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Education in Primary Schools Conducted by Pune Municipal Corporation

PREFACE

At the time of Independence, and even up to a decade after that, most children in urban areas of the country used to go to Municipal primary schools. During the last four decades there has been a decline in the enrolment in these schools, first rather slowly and then rapidly, leading to some observers in some big towns in the country remarking that the per student expenditure in the primary schools in their town had reached the developed country level!

It is not easy to identify the reason or reasons for the decline in enrolment. Some think it was because of the decline in the level and efficiency of teaching in these public schools. Others think it was because the guardians of the children were more attracted by private schools, particularly the English medium schools. The lack of expansion in the number of Municipal primary schools despite the growing urban population was probably the result, and not the cause, of such change in preference.

The Indian School of Political Economy (ISPE) is located in Pune, a fast growing city, where most children were going to municipal or government aided primary schools, teaching through the local language medium in the beginning of the 1950s, when the Pune Municipality was raised to the level of a corporation. In 2005 it decided to make a modest effort to study the trends in enrolment and the expenditure on primary education by the Pune Municipal Corporation and the quality of teaching in the schools set up and conducted by the Corporation.

The purpose was two-fold: In the first place, we desired to record the trend of enrolment in every primary class in all types of schools, in the different wards of the city, run by the PMC during the last over thirty years. This, of course, would not tell us the reason for the decline, if noticed as we suspected we would. But, it would help us identify locations in the city where the decline was faster. That might lead to some pointers. The information about the number of enrolled students and the number of primary teachers in each school in every year might give some indication of one possible reason for the decline. We were also interested in noting the total annual recurring and non-recurring expenditure by the PMC on every one of these schools during the years preceding the survey. That might help us find out the trend in the *real* total expenditure as well as expenditure per student enrolled.

The second question to which our investigation was directed was the quality of education at the primary level. The enquiry would cover the students' ability in reading, writing and arithmetic. This, of course, cannot be done for the years earlier than the year of enquiry But, a meaningful enquiry into this might suggest an important reason for both the cause and result of the decline in numbers. We planned to carefully design the method of investigation into this and use skilled investigators for the enquiry. Also, the amenities currently available at the schools were expected to be compared with the norms specified for the same.

This investigation was not expected to be able to suggest immediate remedial measures. But, its findings would be the basis of discussion about the remedial measures to be taken.

This investigation could be conducted only with the permission and active co-operation of the Pune Municipal Corporation. We proposed to get the attendance data for the schools for as many years into the past as possible, particularly since the time the Municipality became a Corporation, The records were not available in the individual schools, but in the education department of the Corporation. On inspection, it turned out that the records were available from 1975 onwards. Therefore, we collected the information, relating to the number of enrolled students and the number of teachers and the actual expenditures on the teachers' and non-teachers salaries, for more than thirty years preceding 2005. For the enquiry into the students' learning as well as the amenities provided by the schools, we made a random selection of schools, which were advised by the

Corporation to provide the necessary information and permit our investigators to interview students in each class.

The Indian School of Political Economy bore the entire cost of the Study, and sought or obtained no financial assistance from the Corporation. The preliminary study report was first to be presented and discussed in a seminar on 30th and 31st of July, 2008, organised by the School at which the authorities of the Municipal School Board, senior primary school teachers and experts in education were present. The School is publishing the present report after incorporating the suggestions and comments received at the seminar.

During a preliminary discussion on our proposal, the then Commissioner, PMC, Shri Nitin Kareer, who was gracious enough to visit the School for the necessary discussion, raised a question of better integrating the *Anganwadi* and the *Balwadi* programmes with primary school education, with a view to improving the motivation and the preparation of children entering primary schools. Among other things, it would be useful, as suggested by the Commissioner, to examine whether this can be achieved in an economical way by organising suitable training for the *Anganwadi* workers and providing other incremental inputs to the *Anganwadis.* We certainly appreciated the importance of such a study. However, it was not considered practicable to expand the scope of our proposed enquiry to include this aspect as it involved a separate study and survey of the *Anganwadis* and the *Balwadis.*

The compilation and analysis of secondary data was organised and carried out by a team of ISPE, including Ms Sayali Sahasrabuddhe and Mrs. Shilpa Dharmadhikari, under the supervision of Professor Nilakantha Rath and Shri Abhay Tilak. Ms. Varsha Sahasrabuddhe and Shri Nilesh Nimkar provided expertise for design, administration, conduct and analysis of the tests for assessing linguistic and arithmetic achievements and preparing the respective drafts, which have been presented here as separate chapters.

ISPE organised a two-day seminar on July 30-31, 2008, on Education in Primary Schools Conducted by Pune Municipal Corporation, based on the above study. Apart from the Honorary Fellows of ISPE and researchers involved in the above project, the seminar was attended by a number of persons actively associated with primary education. We greatly benefited from the comments made at the seminar by the participants. Grateful acknowledgement must be made here particularly of Shri D.M. Pardeshi, Shri Sambhaji Jadhav, Ms. Shilpakala Randhawe (all then Assistant Education Officers of Pune Municipal corporation and Ms. Dhanvanti Hardikar, then Secretary, Language Department, Bal Bharati, Pune, not only for their comments in the seminar but also for active support and help in various ways provided by them in the conduct of this project.

1. INTRODUCTION

Investment in education is considered to be superior to investment of any other kind, because we all believe that education is the foundation of human life; the development of a rich and all-round personality depends upon the depth and strength of this foundation. Primary education, in turn, is the foundation of all education. Therefore, there has lately been a sustained emphasis on universalisation of primary education the world over, with a view to building an educated and mature global community. Despite the various challenges that they face, developing countries in South Asia, Latin America, the Caribbean Islands and sub-Saharan Africa have achieved very substantial expansion of primary education. Given the fact of this massive expansion in all countries, the task of laying this foundation would, in a way, appear to have been completed.

We say 'in a way' for three reasons. First, although enrolment of primary school-age children into schools is going up in the third-world countries generally, the problem of drop-outs is equally real and critical. There are many reasons for this, but the economic reason is relatively more important. In many developing countries, even today, children from poor families cannot go beyond the level of primary education. Consequently, all that happens is that the children acquire some minimal literacy, or some extremely elementary ability to read and write. With the advance, spread and rapid adoption of technology all over the world, the demand for skilled manpower in the labour market is continuously increasing. As a result, mere basic education and skills are fast proving inadequate to survive in the increasingly competitive employment market. On the other hand, the direct and clear correlation between the level of education and the remuneration offered in the labour market is now clearly visible everywhere. Till about two decades ago, the difference between the average levels of remuneration of those with only primary education and those having completed secondary or higher education was comparatively not very significant. Today, however, the situation is different. In a country like Ghana, the remuneration received by those with a university education has gone up greatly. Naturally, the gap in that country between the levels of remuneration received by university-educated people and people with only primary education has greatly widened. In the labour market in Latin America and the Caribbean Islands, in fact, the average income of those with only primary or secondary education has fallen perceptibly in recent times. At the same time, the average income of those with higher education has gone up rapidly. The experience in Vietnam is the same. Under these circumstances, although the number of children enrolled in the primary education system is increasing, it is only if pupils consistently go beyond the primary level towards the secondary and higher levels that education can be called 'an investment'.

This is particularly important when universalisation of education is connected to eradication of poverty. Although primary education is being - or has been - universalised, developing countries still have a long way to go on this front. When we consider the current education system and the process of learning in the context of the employment situation in the labour market, another aspect assumes importance, namely, 'what kind of' education, in addition to 'how much' education. The expansion of education and the fight against poverty are both inseparably connected to this aspect. Since the pace of the modernisation of technology has accelerated enormously, it has become a common place matter to continuously infuse more advanced technology in the production process. We are all experiencing the constant qualitative changes in the demand for trained manpower in the labour market, in tune with changing technology. Workers and staff are now expected to have up-to-date knowledge-skills and the aptitude as well as the mind-set to be constantly learning and acquiring new technology and skills. To equip pupils with skills consistent with these changing needs and demands of the labour market is proving to be a challenge for the education systems - especially higher education systems - in all countries. The challenge facing higher education

system is to actively encourage the application of the student's mind and to pay keen attention to developing originality as well as versatility of thinking among the students. These qualities are going to be critical in order to cope with the impact of rapidly changing technology and the quickly changing external environment. Every student going through higher education must also be made adept always to leave the imprint of his or her very own personal observation, judgement and insights in the analysis of every problem encountered in work, so that their labour input is not reduced to routine work, lest it should get easily replaced by machines or artificial intelligence

If these varied challenges are to be met, it is necessary that the educational foundation of those who cross the primary stage and enter the secondary and higher stages be sound. As such, the quality of teaching and learning in primary schools has become vital. For, if the foundation laid during the primary stage is not sound, the edifice of secondary and higher education built on that foundation cannot be strong. Today, this is precisely wherein many problems are surfacing, and things are faltering.

The above discussion may give an impression that the case for expansion of primary education is based on the idea of provision of education as an investment in man, that is, on its ability to make the individual a more productive agent in the process of production in the economy. While this is undoubtedly justified, education is not only a matter of making the individual a more productive agent. Are the ability to read and write, to enjoy the writings of others, to be informed about what others are doing or saying, and possibly to share one's thoughts on things with other fellow beings, the ability to appreciate and encourage children in the family to take to education seriously not a part of "good living?".

Although primary education has expanded phenomenally in developing countries, one cannot wish away the grim reality that many young persons cannot even read or write today. Another consequence of the universalisation of primary education is the fact that the higher education system, especially in developing countries, is coming under massive strain-both quantitatively and qualitatively. Since the numbers of those crossing the primary stage - regardless of their merit - are very large, it is proving to be a big challenge to create a secondary and higher education system and provide the required infrastructure for absorbing these numbers. Apart from providing secondary and higher education that is in consonance with and can continuously meet the changing demands of the labour market, the question of making up for the 'backlog' of those who enter the secondary stage with a weak foundation from the primary stage is equally complicated. Since many developing countries have embarked on a programme of economic restructuring, it is not surprising that the issue of the role of the State in a social enterprise like education has also rapidly come to the fore. Given the accelerating urbanisation that is taking place in developing countries, the role and responsibility of local self-government institutions like municipalities and municipal corporations in providing primary education are especially important. This is because although, by now, the private educational sector has come to stay in a big way right from pre-primary to university-level education, the numbers of the sections of society, dependent solely on the primary school system provided or managed by local self-government bodies, are very large in towns and cities. Urban society is not, and has never been, economically or socially homogeneous. Moreover, the heterogeneity of urban society is getting accentuated by the constant migration into the cities. Hence, the adequacy, use and quality of the facilities for primary education provided by urban

local self-government bodies within their respective jurisdictions are matters of serious concern, and call for careful study.

On the backdrop of the foregoing observations, the picture that emerges from a study of the primary schools conducted by the Pune Municipal Corporation (PMC) carried out not very long ago by the Indian School of Political Economy (ISPE) is worth pondering over. According to the Bombay Provincial Municipal Corporations Act, 1949, "It shall be incumbent on the Corporation to make reasonable and adequate provision... for ... maintaining, aiding and suitably accommodating stocks for primary education" (section 63(15).[1] Therefore, it would be revealing and insightful to see how the local self-government body of a city like Pune, which has a long and rich educational tradition, is discharging its duty in the matter of primary education.

The study was initiated towards the middle of June of 2005. The chief task of preparing the time serial database of the school-wise, standard-wise and gender-wise enrolment was taken up in the first phase. With huge efforts, the Indian School of Political Economy could compile a decent year-wise database of enrolment in the primary schools conducted by the Pune Municipal Corporation for the period between 1975-76 and 2005-06. The detailed analysis of the same is presented in the present study. As the contents of that exercise are being published in the year 2017, the statistics presented herewith would appear to be fairly dated. Although this criticism is undoubtedly valid, the glimpses of the reality which emerge out of it are relevant and worth pondering over even today. The study brings to the fore certain crucial qualitative aspects of the world of primary education imparted by an institution of local self-government such as a Municipal Corporation, which has several policy implications. Some of the salient features of this system which emerge out of the present study and warrant careful attention are:

1. Although the enrolment in the primary schools conducted by the Pune Municipal Corporation, of late, depicts a declining trend, the absolute number of children in the school going age who avail of this facility is still sizeable.

2. Majority of the children admitted in these schools belong to the socio-economically deprived strata of the city population. In most of the cases, these children represent may be first or second generation of the school goers in their respective families.

3. With a highly disadvantageous educational background and atmosphere in the household, such children, otherwise, would find it extremely difficult to secure an admission into any other private school. Municipal primary schools alone facilitate their entry into the world of learning.

4. As it appears to be the reality now, municipal primary schools proves to be the sole source of learning for the children belonging to the burgeoning mass of in-migrant workers. With relatively liberal system and procedures pertaining to admission and/or intra city inter school transfers, the community of in-migrants find it easy, convenient and also affordable economically to enroll their wards into the municipal schools.

5. Although the overall enrolment in the primary schools of the Pune Municipal Corporation has started exhibiting a

1. The Marathi translation of the above section elaborates the above section by rendering it to read: "It shall be incumbent on the Corporation to make reasonable and adequate provision... to conduct schools for imparting primary education, make provision for extending assistance to them as also provide suitable accommodation to the primary schools"

declining trend, the statistics indicates that this decline has pronounced geographical/locational dimensions attached to it. Municipal schools situated in the heart of the city depict a relatively early and comparatively more pronounced deceleration in the enrolment compared to the Municipal schools located on the periphery. This is quite understandable considering the fact that majority of migrant and/or floating population resides in the peripheral localities of the city and children belonging to precisely this stratum of locals take recourse to the schooling facility provided by the Pune Municipal Corporation.

6. There is an emerging trend among almost all strata of population to admit children into an English medium school. Recognising this tendency, the Pune Municipal Corporation has started quite a few English medium primary schools of late. Not only that, but, there is reportedly an increasing demand for such schools year by year. This fact is a sound testimony of the relevance of an alert and sensitive schooling system designed, administered and operated by an institution of local self-government, amidst the growing influence of the philosophy of privatisation.

7. Municipal primary schools, as the forthcoming analysis underlines, prove to be a vital instrument in furthering the cause of education of girls up to the upper primary level. The primary education imparted through the municipal schools does not entail any expenditure on schooling on the part of the households. Hence, families belonging to the underprivileged sections of the society prefer to educate their girl children in the municipal schools up to the upper primary level, that is, up to the seventh standard. On the other hand, the male child in the family is put into a private school after the fourth standard. The belief that the male child would be the future principal bread earner of the family and hence needs to be imparted quality education supposedly through a private school, seems to be the underlying consideration on the part of the parents.

The point, made earlier, that education is not a matter only of making the individual a more productive agent, becomes more relevant when it is recognised that many women from economically and socially disadvantaged groups are likely to end up with only upper primary education, or that there are the boys as well as girls from migrant households whose children may not, in a large measure, get into the more productive occupations in this generation. A minimum of good quality primary education is needed for all, irrespective of the possibility of their joining the more productive work force. This is essential as a part of the better living of all people in our society.

Indeed, the fact that children from illiterate households are joining the municipal school system points to the need to provide greater attention to their education at the early stages, both in terms of the quality of teachers and the time devoted per child (as expressed, at least, by the average class size).

Since the launch of the programme of economic restructuring, it is forcefully argued in some sections of society that the government should take a ‘back seat’ in various economic activities. The idea behind this view, mostly, is that all that is done by government is inferior and all that is done by private parties is superior. This is not the place to discuss how far this view

is correct. Nevertheless, the related figures given in detail in the following pages convey an accurate idea of the enormity of even the mere quantitative expanse of the basic facility like primary education, provided by a local self-government body, namely PMC, in a city like Pune. There is yet another objective behind providing this detailed statistical information. These findings need to be studied carefully, so that the following crucial point does not get neglected: When it is argued that the government should exit from a field such as education, what effective alternative are we going to provide immediately to these large numbers who are perforce dependent on this very education system currently provided by the government? In fact, the need of the hour is to develop a culture of carrying out such studies in our respective cities.

An important special feature of the present study is that while assessing the quality of learning of the pupils in a sample of the PMC conducted primary schools, the study has put questions to them which bring out their performance in innate abilities as well as in learning schools acquired in the schools. It emerged that the pupils did extremely well in innate abilities such as: writing a few sentences after observing an activity performed before them or a picture shown to them (they were much better in the latter); understanding cause and effect; displaying the ability of multi-directional thinking. Where they seem to be falling behind are in reading and writing, that is in skills they are expected to learn in the schools. They do relatively better in constructing sentences in their own dialects rather than in standard Marathi, the relative performance in standard Marathi surprisingly considerably worsening in the higher, fifth, standard. In skills related to maths, the pupils seem to do better in solving sums which are related to their world of experience, rather than those bearing on abstract methods. The study makes detailed suggestions on how to remedy the difficulties in the learning of language and maths, based on close examination of the kind of mistakes which the pupils make. Indeed, the object and the main thrust of the assessment exercises was a positive one to see how the learning could be improved rather than on where learning was poor.

The clear presence of much better innate abilities shows that a high potential exists among students of all social and economic backgrounds to pick up the acquired skills if a closer personal attention is paid to them by teachers, using teaching methods and aids thoughtfully designed after considering the nature of learning difficulties faced by them. What is more important, this also brings out the great possibilities which exist in enriching their lives to some extent through good education, inspite of the odds in their day to day life.

The more the glimpses of the varied aspects of the large universe of primary education in and across our cities that such studies show us, the more the directions in which efforts need to be made for improving that universe would manifest before us.

2. A: ENROLMENT IN PRIMARY SCHOOLS CONDUCTED BY PMC

ISPE Research Team

Statistics pertaining to enrolment in the primary schools conducted by the Pune Municipal Corporation's Board of Education has been compiled from two sources. The Board of Education publishes a report of its activities every year. Details such as the total number of schools, medium of instruction-wise classification of total number of schools, teachers therein, number of students enroled, gender-wise break up of the total number of students are provided in these annual reports in an aggregative form. One does not get standard-wise enrolment of students through this set of data. The Board of Education has classified total number of schools under its jurisdiction into nine geographical zones. These zones have been defined taking into account the administrative convenience of the Board. Further, all the Urdu medium schools have been clubbed into a separate zone. Urdu medium schools scattered all over the city have been included in this zone. Accordingly, all the schools under the Board have been classified into the aforesaid ten zones. These annual reports, hence, prove to be a very valuable source of published official data. ISPE could obtain copies of these annual reports for the period of three decades between 1975-76 and 2005-06, (at the time of conducting this study). The annual reports of the Board, however, do not provide zonal classification of schools and enrolment therein.

The present inquiry undertaken by ISPE concerning the dynamics of primary education system conducted by the Pune Municipal Corporation, primarily, was triggered by a set of the following questions:

1. What has been the direction and magnitude of change in the total number of schools and enrolment therein over the years?
2. To what extent these trends support the widespread notion that total enrolment in municipal primary schools depict a declining trend noticeably after the advent of philosophy of privatisation?
3. What has been the temporal dimensions of the dynamics of enrolment in municipal primary schools?
4. Are there any significant differences as far as enrolment is concerned with respect to factors such as gender, geographical location of the school, standard and medium of education?

One needs disaggregated data if one has to find satisfactory explanations to these questions. The annual reports of the Board of Education, hence, do not prove to be an adequate and useful source in this respect. Recognising this, ISPE appointed a team of investigators to gather and copy down statistics pertaining to enrolment from another source of official information, namely, "Monthly Salary Statement". School-wise, standard-wise, medium of instruction-wise and gender-wise data on enrolment was copied down from this source for the entire period between 1969-70 to 2005-06 by the team of investigators appointed by ISPE. Table 1 presents the aggregates for enrolment, number of schools, number of teachers, number of non-teaching staff, teachers' salaries and salaries of non-teaching staff from this data source.

Salient features of the dynamics of enrolment as reflected in the statistics obtained from the aforesaid two sources are presented herewith. Further, a set of more than 200 enclosed graphs portray the same dynamics in an extremely vivid manner. These graphs are so self-explanatory that any comment to elaborate their contents would be utterly unwarranted.

DYNAMICS OF ENROLMENT

(A) Statistics obtained from the Annual Reports

Total count of primary schools conducted by the Board of Education of the Pune Municipal Corporation stood at 182 in the year 1975-76. Subsequently, the number of schools maintained

a steady but consistent growth till the year 1999-2000. A number of primary schools located in the peripheral regions of the city were brought under the jurisdiction of the Pune Municipal Corporation in the year 1999-2000 and hence the total count of schools recorded a sudden rise. The count of primary schools reached its peak and stood at 315 in the year 2001-02. Further, a few of the primary schools belonging to the peripheral areas and which were transferred to the Pune Municipal Corporation earlier, were removed from its jurisdiction and hence the total count of primary schools depicted a fall in the year 2003-04. Finally, the count of primary schools stood at 287 in the year 2005-06.

Total enrolment in the 182 primary schools stood at 77, 412 in the year 1975-76. The enrolment count attained its peak and stood at 1,19,927 in the year 2000-01. Subsequent to that, the enrolment count recorded a declining trend and stood at 1,05,587 in the year 2005-06. In percentage terms, this turns out to be a fall of 12 per cent.

It would be very interesting to look at the gender dimension of the enrolment and the dynamics therein. Total number of male students in the primary schools stood at 38,943, while the total count of female students stood at 38,469 in the year 1975-76. That means, the total count of male and female students was almost at a comparable level in the year 1975-76. However, the enrolment of male students attained its peak level of 67,133 in the year 1996-97, while the count of female students reached its peak five years later, that is, in the academic year 2000-01. In other words, the count of male students in the primary schools started recording a declining tendency before that of female students.

(B) Statistics obtained from the Monthly Salary Statements:

Each and every primary school is expected to submit a copy of its Monthly Salary Statement to the office of the Board of Education, every month. Details such as the total count of teaching as well as non-teaching staff in the school, total salary payable, standard-wise and gender-wise enrolment in the school are recorded in this Monthly Salary Statement. ISPE arranged for copying of enrolment statistics from this document for all the years between 1969-70 and 2005-06. Standard-wise and gender-wise enrolment data was copied down from these Monthly Salary Statements for the two months of September and March of every academic year, for every school, for the period between 1969-70 and 2005-06.

Year-wise enrolment statistics compiled from the aforesaid two sources of data have been presented pictorially in the form of graphs. The fact that the statistics obtained from the two sources corroborate each other quite well emerges out of the various graphs appended herewith. The dynamics of change in the enrolment as depicted in both the data sets is remarkably comparable and consistent with each other.

One feature of the statistics compiled from the Monthly Salary Statements needs to be clarified here at this juncture. This set of enrolment data does not include enrolment count of:

1. Vidya-Niketan Schools conducted by the Pune Municipal Corporation.
2. Primary Schools located in the peripheral regions of the city which were transferred to the Pune Municipal Corporation in the year 1999-2000 and were subsequently removed from its jurisdiction in the year 2003-04.
3. Enrolment in primary schools with mediums of instruction other than Marathi and Urdu.
4. Schools which did not record their enrolment count in the Monthly Salary Statement for the respective academic years.

In view of this, the enrolment statistics compiled by ISPE from Monthly Salary Statements turns out to be consistently lower than the aggregate enrolment count as recorded in the Annual Reports of the Board of Education of the Pune Municipal Corporation. Throughout the period between 1975-76 and 2005-06, the enrolment statistics compiled from the Monthly Salary Statements accounts for about 91 to 95 per cent of the aggregate enrolment count depicted in the Annual Reports. However, the overall direction of change and its pattern is comparable in both the data sets. Monthly Salary Statements for most of the primary schools could not be located in the records of the Board of Education for the three academic years of 1982-83, 1983-84 and 1984-85. Accordingly, the absolute difference between the aggregate enrolment count recorded in the Annual Reports and the enrolment count compiled by ISPE from the Monthly Salary Statements appears to be particularly large for these three years.

Broad features of dynamics of standard-wise and gender-wise enrolment as depicted in the statistics compiled from the Monthly Salary Statements are presented herewith. Needless to say, the set of appended graphs is so vivid and crystally self explanatory that any further elaboration on the contents of graphs would be a mere repetition.

1. Total enrolment: Standards 1 to 7.

Total count of students stood at 40,742 in the year 1969-70. This count depicted a consistently rising trend for the following two decades and it attained the level of 1,07,533 in the year 1990-91. Post 1990-91 this count records a somewhat unstable trend. It reached peak level of 1,15,758 students in the year 1999-2000 after which it exhibited a continuously declining tendency. The total count stood at 86, 240 in the year 2005-06. Between 1999-2000 and 2005-06 this works out to be a fall of almost 26 per cent.

2. Total enrolment: Standards 1 to 4.

Total count of students in this sub-section stood at 27, 871 in the year 1969-70. In the following two decades, this count recorded a rise of about 187 per cent and reached its peak of 79,854 in the year 1990-91. After that, enrolment in this sub-section depicted a consistently declining trend and reached a level of 56,804 by the year 2005-06. Between 1990-91 and 2005-06, this works out to be a fall of about 29 per cent.

3. Total enrolment: Standards 5 to 7.

Total enrolment of 12,871 in this sub-section in the year 1969-70 recorded a rising tendency till the year 1987-88. Before attaining a peak level of 37,142 in the year 2001-02, this count exhibited a somewhat unstable trend during the in-between years. That means, the total enrolment count in this sub-section started depicting a declining trend a full decade later when compared to the beginning of declining trend in the total count of students enroled into standards 1 to 4.

4. Gender-wise total enrolment of students: 1 to 7

One finds a marked difference in the dynamics of enrolment of male and female students. Total count of male students in standards 1 to 7 stood at 26, 031 in the year 1969-70. In the same year, the total count of female students stood at 14,711. Total count of female students, hence, worked out to be about 57 per cent of that of male students in that year. Total count of male students attained its peak level of 59,912 in the year 1980-81. However, the total count of female students reached its peak of 58,316 much later, that is, after almost two decades, in the year 1999-2000. Further, the total count of female students of 41,657 in the year 2005-06 worked out to be about 94 per cent of the total count of male students of 44,583 in the same year. This dynamics highlights an interesting phenomenon. It appears that, the retention span

of female students in municipal primary schools is relatively longer compared to that of male students.

5. Gender-wise enrolment of students : 1 to 4

Total count of male students in the standards 1 to 4 stood at 17,627 in the year 1969-70. Total count of female students, in the same year, stood at a slightly lower level of 10,244. Enrolment count of male students attained its peak of 45,458 in the year 1980-81. Count of female students reached its highest level of 40, 630 much later, that is, in the year 1999-2000. Total enrolment count of male students in this sub-section depicted a consistently declining trend since 1980-81. This, once again, reinforces the inference that, parents seem to be awarding a relatively longer period of schooling for their female child through municipal school system, compared to the male child.

6. Gender-wise enrolment of students : 5 to 7

Total enrolment count of female students of 4,467 in this sub-section in the year 1969-70, was almost half of that of male students (8,404) in that year. However, the count of female students in this sub-section in the year 2005-06 (14, 403) was almost 96 per cent of the total count of male students (15,033) in the same year. The count of male students attained its peak level of 18,588 in the year 2001-02. Count of female students, too, attained its highest level of 18,554 in the same year.

7. Spatial/locational dimension of enrolment

Analysis of spatial/locational dimension of the dynamics of enrolment, too, provides quite interesting and equally thought provoking insights. Enrolment count of the municipal primary schools located in the heart of the city exhibits relatively early and comparatively sharper decelerating tendency compared to those schools which are located in the peripheral regions of the city. Accordingly, as the data reveals, municipal primary schools situated in areas such as Shivaji Nagar, Aundh, Pune City, parts of Kothrud and Sinhagad Road start losing students relatively earlier and in a more pronounced manner compared to the municipal schools located in areas such as Hadapsar, Mundhwa-Ramwadi, Yerawada, parts of Kothrud and Bibwewadi.

Two factors seem to be triggering this phenomenon. Parts of the central city are inhabited by relatively more educated and economically sounder strata of population. Constituents of these socio-economic classes have an intrinsic attraction towards educational activities materialising out of private initiative. Perhaps, a belief that anything which emerges out of private enterprise is inherently superior to the one provided by the State apparatus, may be deeply rooted and nurtured in the psyche of the households belonging to these socio-economic groups. With the advent of economic restructuring at the beginning of the decade of 1990s, these central parts of the cities experienced a marked increase in the number of primary schools conducted by private institutions or agencies. With this, parents belonging to the aforesaid segments immediately opted for the option of private schools as against that of the municipal schools. As a consequence, municipal primary schools began losing their strength. A few of them had to be closed owing to massive outgo of wards.

Over the years, besides being a cultural capital of the country and an educational hub, the city of Pune has emerged as an important and leading industrial conglomerate. In view of this, the city routinely attracts a sizeable army of immigrants. Of these, relatively less educated and unskilled/semi-skilled migrant workers, usually, reside on the periphery of the city. Such migrants

also constitute a large chunk of floating population of the city of Pune. It was reported during the field inquiries that, children belonging to these migrant families are routinely admitted into municipal primary schools. In the first place, the municipal primary school system has a relatively liberal admission procedure and mechanism. This suits the convenience of migrant families which do not have any fixed schedule of arriving and settling down in the city, quite well. Further, imparting schooling to wards through municipal primary school system does not entail much of a financial burden to the migrant families as all the bare necessities associated with learning are provided by the school. Municipal primary schools located in the fringe areas of the city, hence, tend to have relatively larger enrolment counts compared to those located in the heart of the city.

An important point which came to our notice during the course of discussion about the performance of the pupils from the migrant families in the peripheral areas of the city was that, in a number of cases, the mother tongue of the migrant children (who came from other states) happened to be different than the official medium of instruction administered in the municipal schools.

These dimensions, undoubtedly, have huge policy implications as far as the system of municipal primary schooling in a sprawling metropoly such as Pune is concerned.

8. Urdu medium schools

It is quite noteworthy that, the enrolment counts of students studying in all the three subsections of standards 1 to 4, standards 5 to 7 and standards 1 to 7 attained their peak levels during the decade of 1980s. The only difference was that, the enrolment count of students in the standards 5 to 7 attained its highest level towards the end of the decade as against the count of students in standards 1 to 4 and 1 to 7 wherein the peak levels were attained in the first half of the 1980s. This was true in the case of female students too. The enrolment count of female students reached its peak level in the second half of the decade of 1980s.

With the advent of the recent amendment to the Constitution of India, elementary education has been recognised to be a fundamental right of every individual. Accordingly, schooling beginning from standard 1 up to standard 8 has been now designated as Elementary Education. Earlier, schooling up to standard 4 would be described as Lower Primary; while, schooling from standard 5 to standard 7 would be termed as Upper Primary. So far, in the above paragraphs, we have acquainted ourselves with the dynamics of enrolment count of students belonging to lower as well as upper primary schooling system. If one adheres to the earlier definition of "Primary Education" which implied schooling up to standard 4 only, the picture that emerges out of the analysis of the relevant statistics is presented in part B of this chapter.

B: ENROLMENT AND DROP-OUTS IN PMC CONDUCTED PURELY PRIMARY SCHOOLS (THAT IS, CLASSES I-IV)

ISPE Research Team

The data relating to the number of primary school students and teachers under the Pune Municipal Corporation start from 1970. The earlier records were not available in the office of the Corporation. The records containing the number of students were not available for the year 1983. Similarly, the records relating to the number of teachers and their total monthly salaries were not available for six years, 1977, 1979 to 1982, and 1986. The number of students on record for the year 2000 is suddenly very high. It is difficult for us to explain this sudden rise in one particular year, followed by its sharp decline in the next. (Our effort to seek an explanation by looking at enrolment data Zone-wise also failed since these data were not continuously and systematically available.) We have to bear with these limitations of the data in discussing trends.

We had data for every month of the year. However, we collected data for two months of the academic year, September and the succeeding March. The September data is expected to show the maximum number enroled in the beginning of the year. But, subsequently every year, students drop out for a variety of reasons. It is the data of the number of students on the rolls in the month of March that we thought would indicate the number that regularly attended school during the academic year. So, we use that data to trace the firm number of students that attended municipal primary classes.

The Corporation had two types of primary classes; the exclusively primary schools, with classes from I to IV, and middle Schools that had classes from I to VII. There were 149 schools of the two types in March 1970. This number steadily increased to 309 by March 2006. The purely primary schools are smaller in number, increasing from 38 in 1970 to 78 in 1993-94 and then declining to only 49 in 2006. The middle schools, however, are larger in number right from the beginning. They were 111 in 1970, increasing to 171 by March 1983, fluctuating between 160 and 170 till 1999 when they went up to 233 and increased further to 260 by 2006 (See Table 1).

For examining the number of students in primary classes, we have taken the numbers from the exclusive primary schools as well as the enrolment in classes from I to IV in the middle schools. For the salaries of teachers, however, we have taken the data only for the primary schools, since we have no separate information about the teachers teaching the primary classes in the middle schools, and the average salaries of the teachers in the middle schools are sure to be higher than in the exclusively primary schools.

There were 27,871 students in the primary classes in the Corporation's schools in March 1970 (academic year 1969-70). The number increased sharply in the subsequent three years. Subsequently the increase was less sharp and rather fluctuating till it reached the figure of 70,974 in March 1980. After this the number began declining till 1984. Since then, however, it increased steadily till 1994 when the number reached 77,472. This was nearly 178 per cent higher than in March 1970. After 1994, however, the number has steadily declined (except for the year 2000) and by 2006 had reduced to 57,302, a decline of about 20,000 (by about 26 per cent), to only a little over double the number in March 1970 (See Table 1).

Over these 36 years the number of children of primary school going age in Pune has steadily increased. So, it is clear that not only lesser number of children than in 1984 but also a declining proportion of children in the primary school going age group was coming to the Corporation's primary school classes. The others

were going, in increasing numbers and proportions, to private primary schools, mainly English medium schools.

There is some difference in the enrolment of boys and girls in the Corporation's primary classes, Between March 1970 and March 1981, the number of boys in the primary classes increased from 17,627 to 45,683, i.e., about 159 per cent increase, and much higher than the increase in total enrolment, The number of girls in these schools was much lower, about 10,244 in March 1970 and increased to 27,697 in March 1980. The increase, however, was higher in percentage, than in the case of boys, about 170 per cent. From March 1981, however, the decline in number of boys has been continuous, if not steady. By March 2006 it had declined to only 29,883, a decline of about 35 per cent. The enrolment of girls, however shows a different trend: after 1980 it registered increase, and from 1988 it stayed around 35 thousand, with ups and downs, till the beginning of the current century when it also declined to the level of 1980 in March 2006.

The differential trend in the enrolment of boys and girls reflects the difference in social attitude to the education of boys and girls. Traditionally in Indian society girls were most often not put to school and quite frequently, if put to school in the early years, were withdrawn for domestic work or earning some wage for the household, pending early marriage. Their increasing enrolment, partly a result of the growing population of the city, was due to a slow acceptance of the girl child's education by the working class families. The more or less steady number of enrolment of the girl students during the 1980s and 1990s indicates a different phenomenon. In case of boys there was a growing tendency to withdraw boys from the municipal schools in order to get them admitted to private and preferably English medium schools. Many parents think the boys should get educated in English since they have to seek jobs in later life and they should be put to such schools to learn English, if the parents can afford it. As against this, the attitude towards girls in the same type households has been different. The parents think the girls, after marriage, will be engaged in households, child care and, if forced to earn something, will seek work as domestic help. That does not require English education. So, the same household that may withdraw a male child from vernacular medium Corporation School and put into an expensive English medium one, will keep the girl child in the vernacular medium corporation school. The reasons for drop-out can be many others. A child does not like going to school, and if the parents do not insist, he/she may drop out. The mother may withdraw a girl child from school to help her in her domestic works in many households. In the case of migrant households, the parents may move out with the family for a part of the year. This may happen in areas where large numbers of migrant labour households reside (which are not unknown in the fringe areas of Pune City).

In this context, it would be useful to examine the data relating to withdrawal of boys and girls from primary schools during an academic year, over these thirty six years. While we have no direct information about the reasons for withdrawals or drop-outs, the data might strengthen our suspicions expressed above. The data is calculated by deducting the number of students on roll in the month of March in an academic year from the number on rolls in the preceding month of September. It is possible that sometimes the March number may be higher than the September number, if admissions have been delayed for any reason. Subject to this, the data show that the withdrawals or drop outs have been persistent, except in a few years when possibly some admissions were late.

The data show there is no particular trend in the number of drop-out students over the 36 years under enquiry. Over most of the years, the total number of students who appear to have dropped out during the school year in all the primary classes taken together, appear to have varied between three and seven thousand, excepting the years 1982-3 to 1984-5 for which data were not available. The years from around 1998-99 to 2001-2 show much higher drop-outs. But these also happen to be the period when the number of middle schools went up very sharply, from 166 to 233. This decline in numbers of students may have something to do with the opening of new schools, with children coming in and going out or coming in late. The average number of drop-outs per school has fluctuated largely between 10 and 30, with the average per class varying between 2 and 6. This may appear rather small per class. But it is not a very happy sign that most of the time students are dropping out of school.

The decline in the number of students in the Corporation's primary schools and classes over these three or four decades is something to be worried about. There was a time when almost all children going to primary schools in Pune (and, indeed, in all towns in the state and the country) were going to municipal schools. The reasons for the steady decline are broadly two-fold. One is the declining level of learning in the municipal primary schools. The later part of this report indicates this and suggests remedies. The second reason is the "need" felt by growing population of parents about the knowledge of English of their children. Till almost a decade after Independence, school education in India was in the medium of the regional language. English was taught only from the fifth standard, in the high schools, as only a subject, not as the medium. However, the teaching of English as a language was so good that students passing out of high schools did not find it difficult to read English books and papers and write correctly, even when speaking fluently might not be as common and easy. But, during the last three or four decades the level of teaching of English as a language has sharply declined, so much so that students passing SSC examination are unable to read even elementary children's books, in large print. The result is, parents - not only of the growing number of the middle class, but also a growing proportion of the working class, with steady income in cities and towns and even better of farm families in villages - think that English education for their wards is possible only if they learn English from the first standard onward. Hence, the decline in enrolment in the regional language primary schools.

In many states in India, including Maharashtra, the state government, in order to attract students to the regional medium primary schools, has accepted a policy of teaching English as a language from the first standard in primary schools. This policy decision had not been implemented in the Pune Corporation's schools when we collected the data in 2007 and conducted our enquiry into the learning of the students. Recent casual enquiries by various agencies, however, show no great impact of this on enrolment and learning.

We think if teaching of the three R's is improved, the enrolment will improve. As for learning English, experiments in some schools in the state with teaching the primary level students to speak commonly used sentences in English, along with good training in their mother tongue, will give them greater confidence, and help them get over their inferiority feeling *vis-à-vis* the children from English medium primary schools. Teaching of English in the high schools also needs considerable improvement. What needs to be emphasized is the student's ability to read and understand English books without difficulty and his/her ability to compose general correspondence, etc., in English. The ability to speak

fluently in English need not be emphasized in the teaching of English. If reading is free and competent, the student can go to any college where English may be the medium of instruction, without difficulty. What should be emphasized is the student's ability to understand and translate English articles in to the mother tongue. For all this to happen, teaching English to children from the very first standard is not necessary, indeed, is undesirable. If such steps are taken, the enrolment in the Municipal Schools will surely improve. Failure to take such steps amounts to the state flouting the constitutional obligation to provide elementary education to all children.

The strength of the class in primary schools has also deteriorated over the years. In 1971 the average class strength was 35. But, soon it went beyond 40 and reached 60 around the beginning of the 1990s. During the first six years of this century it has hovered round 50. This is contrary to accepted principles of primary education, particularly where many students come from households with little educational background. This requires increase in the number of teachers at the primary level. The large number of students enroled in the late 1980s and 1990s led to some increase in the number of teachers, but not proportionately, leading to the class size increasing to sixty. The decline in the strength of students appears to have led to a more rapid decline in teachers' strength, leaving the size of the class around 50. This calls for greater budgetary allocation for school education by the Corporation, so that the average strength of the class is around 30.

There is no reason to fear that the salary of teachers of primary schools in Pune city's Corporation Schools is low, by historical standards. We have data for the teachers' salary in the exclusive primary schools run by the corporation (Table 1). The data show that the average salary of a teacher was Rs 263.4 in the month of March, 1970. By March, 2006 it had risen to Rs 12,396.6, all at current prices. Adjusting it for the rise in the Consumer Price Index for industrial workers in Pune, we find the salary in 2006, at March 1970 prices to be Rs 793.8, that is, three times the salary in 1970, in real terms. Besides full compensation for rise in prices, the salary scales have undergone frequent upward changes over these three or more decades. The real problem is training of suitable teachers for proper education. These questions are raised and answered in the later part of this report.

Table 1. Aggregate Enrolment, Number of Schools, Number of Teaching and Non-Teaching Staff and Salaries of Teachers and Non-teaching Staff, March

Year	No. of Schools			No. of reporting Schools	Enrolment (1 To 4)				Enrolment (1 To 7)		
	B	G	Total		B	G	Total	No. of Classes	B	G	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(1)	(11)	(12)
1969-70	94	55	149	98	17627	10244	27871	688	26031	14711	40,742
1970-71	94	55	149	124	24014	14542	38556	906	33442	19687	53,129
1971-72	99	59	158	140	29986	16668	46654	1079	41189	23066	64,255
1972-73	114	61	175	163	33532	17521	51053	1166	44230	23637	67,867
1973-74	115	61	176	167	35090	19608	54698	1252	45864	25724	71,588
1974-75	117	64	181	178	34101	24757	58858	1330	44078	32506	76,584
1975-76	118	64	182	168	33413	21627	55040	1282	43255	28496	71,751
1976-77	119	64	183	172	36676	22250	58926	1268	47132	29441	76,573
1977-78	123	75	198	188	35974	26971	62945	1296	47104	35990	83,094
1978-79	128	76	204	186	41377	25173	66550	1305	53136	31809	84,945
1979-80	128	77	205	200	44094	28007	72101	1415	56931	36798	93,729
1980-81	128+6	77+4	215	205	45458	27823	73281	1440	59912	36244	96,156
1981-82	133+3	83	219	203	41479	27918	69397	1398	55150	36851	92,001
1982-83	133+3	83	219	191	28080	24338	52418	1027	35281	33459	68,740
1983-84	133	83	216	156	26012	25408	51420	999	35000	33747	68,747
1984-85	135	87	222	179	27134	27245	54379	1141	38148	36530	74,678
1985-86	139	87	226	222	35753	33635	69388	1456	50255	46613	96,868
1986-87	135+1	87	223	213	36065	35253	71318	1370	50410	48270	98,680
1987-88	135+1	87+1	224	215	36928	35853	72781	1367	52165	49991	102,156
1988-89	135+2	87+1	225	217	37831	39140	76971	1420	51360	52343	103,703
1989-90	140	87	227	213	39458	37922	77380	1390	53771	51108	104,879
1990-91	140+3	87+2	232	215	41985	37869	79854	1406	56285	51248	107,533
1991-92	141+1	87+1	230	213	39732	37646	77378	1401	54611	50894	105,505
1992-93	140+1	87	228	216	38868	36262	75130	1359	52814	49626	102,440
1993-94	140+2	87+1	230	214	39952	38195	78147	1362	54525	51398	105,923
1994-95	140+1	87	228	217	37547	36179	73726	1333	52329	50718	103,047
1995-96	140	87	227	221	37352	37371	74723	1427	51935	52063	103,998
1996-97	140	87	227	220	37472	36292	73764	1325	52305	51534	103,839
1997-98	141	87+1	229	224	36915	37560	74475	1372	51626	52452	104,078
1998-99	146+2	88	236	229	34955	36339	71294	1313	49308	50802	100,110
1999-00	146+1	89	236	236	34115	34891	69006	1357	49931	49708	99,639
2000-01	147	88	235	226	29167	28558	57725	1269	44602	43533	88,135
2001-02	146+1	88+1	236	226	27818	27336	55154	1237	43532	42771	86,303
2002-03	146+3	88	237	213	25261	25518	50779	1179	40117	40772	80,889
2003-04	146+3	88	237	213	24173	24972	49145	1148	37779	39227	77,006
2004-05	146+3	88+1	238	211	24690	22721	47411	1134	38832	34982	73,814
2005-06	146+5	88	239	210	22699	20878	43577	1107	34865	32394	67,259

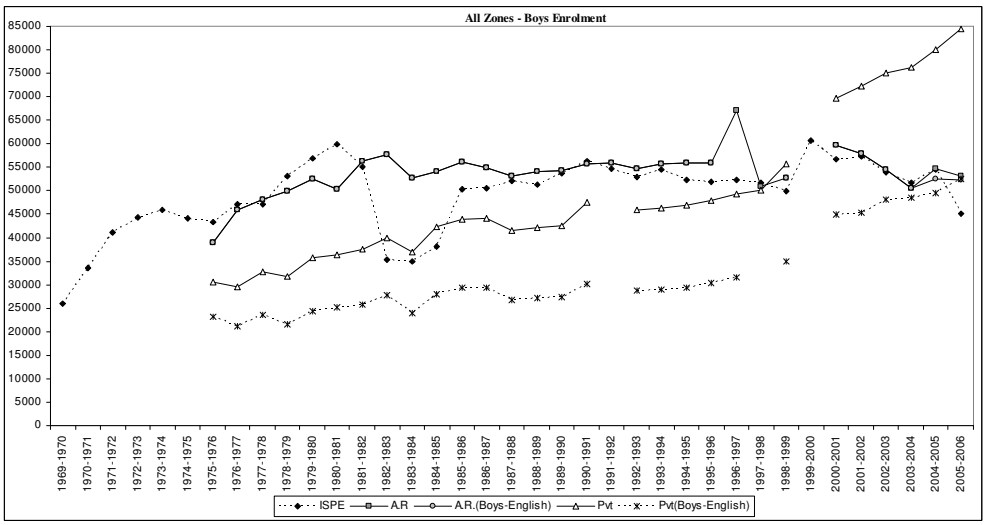
(contd.)

Table 1. ***(Concld.)***

Year		Enrolment (5 To 7)				No. of Teachers	Total Salary	Non-teaching Staff	Non-teaching Salary
	No. of Classes	B	G	Total	No. of Classes				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1969-70	1027	8404	4467	12871	339	1648	449961	187	13770
1970-71	1326	9428	5145	14573	420	1630	484053	193	21083
1971-72	1563	11203	6398	17601	484	1962	570263	203	25742
1972-73	1638	10698	6116	16814	472	1988	700552	230	34746
1973-74	1720	10774	6116	16890	468	2063	750755	228	37241
1974-75	1805	9977	7749	17726	475	2146	802833	228	38640
1975-76	1730	9842	6869	16711	448	2205	997590	212	43595
1976-77	1732	10456	7191	17647	464	2256	1070383	245	55426
1977-78	1806	11130	9019	20149	510	2257	1285772	266	65741
1978-79	1751	11759	6636	18395	446	2324	1458183	271	73741
1979-80	1923	12837	8791	21628	508	2326	1576385	289	81697
1980-81	1970	14454	8421	22875	530	2235	1771656	292	89491
1981-82	1913	13671	8933	22604	515	2190	1898015	287	99891
1982-83	1388	7201	9121	16322	361	1710	1534846	205	87923
1983-84	1392	8988	8339	17327	393	2088	2575430	246	188556
1984-85	1600	11014	9285	20299	459	2368	2895365	258	212037
1985-86	2106	14502	12978	27480	650	2462	3591895	264	247175
1986-87	1984	14345	13017	27362	614	2384	3595320	269	255339
1987-88	2046	15237	14138	29375	679	2344	4153240	269	316192
1988-89	1991	13529	13203	26732	571	2336	5118228	287	371606
1989-90	1994	14313	13186	27499	604	2259	5276123	276	388806
1990-91	2003	14300	13379	27679	597	2366	7131133	287	477977
1991-92	2004	14879	13248	28127	603	2328	7488864	299	517783
1992-93	1945	13946	13364	27310	586	2180	7849004	285	529863
1993-94	1949	14573	13203	27776	587	2340	8588854	284	585662
1994-95	1957	14782	14539	29321	624	2252	10583045	339	743445
1995-96	2072	14583	14692	29275	645	2196	10674584	330	852658
1996-97	1987	14833	15242	30075	662	1755	9604190	256	746946
1997-98	2034	14711	14892	29603	662	2351	20025472	356	1065503
1998-99	1971	14353	14463	28816	658	2250	16703880	351	1120223
1999-00	2056	15816	14817	30633	699	2131	16546690	369	1369851
2000-01	1993	15435	14975	30410	724	2085	20444267	352	1498276
2001-02	1987	15714	15435	31149	750	2056	20454598	302	1322624
2002-03	1929	14856	15254	30110	750	1984	20195104	292	1663532
2003-04	1864	13606	14255	27861	716	1898	23528954	390	2236941
2004-05	1806	14142	12261	26403	672	1802	24898329	383	2617718
2005-06	1776	12166	11516	23682	669	1748	26006264	371	2410403

Source: Monthly Salary Statement submitted by the Primary Schools to PMC Board of Education; Aggregates for the Reporting Schools.

LIST OF ZONEWISE GRAPHS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65000
60000
55000
50000
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40000
35000
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25000
20000
15000
10000
5000
0
1969-1970
1970-1971
1971-1972
1972-1973
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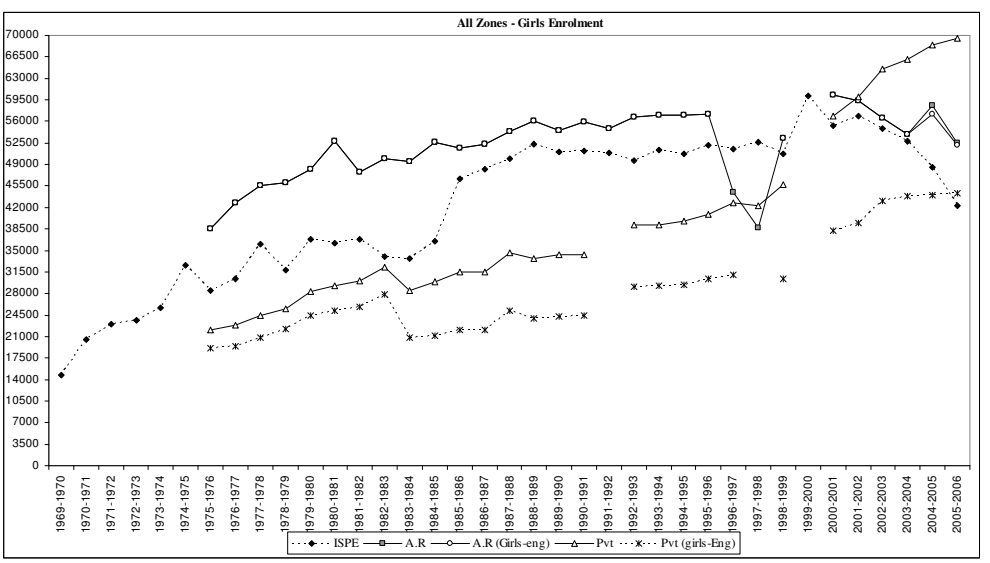
Pvt
Pvt(Boys-English)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70000
66500
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59500
56000
52500
49000
45500
42000
38500
35000
31500
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21000
17500
14000
10500
7000
3500
0
1969-1970
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1974-1975
1975-1976
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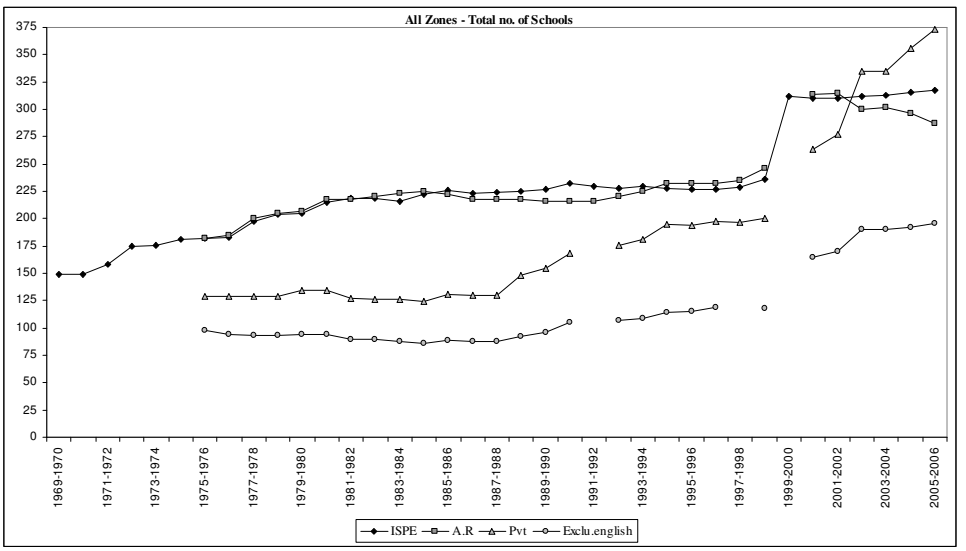
1992-1993
1993-1994
1994-1995
1995-1996
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
ISPE
A.R
A.R (Girls-eng)
Pvt
Pvt (girls-Eng)


All Zones - Total no. of Schools
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350
325
300
275
250
225
200
175
150
125
100
75
50
25
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1969-1970
1971-1972
1973-1974
1975-1976
1977-1978
1979-1980
1981-1982
1983-1984
1985-1986
1987-1988
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ISPE
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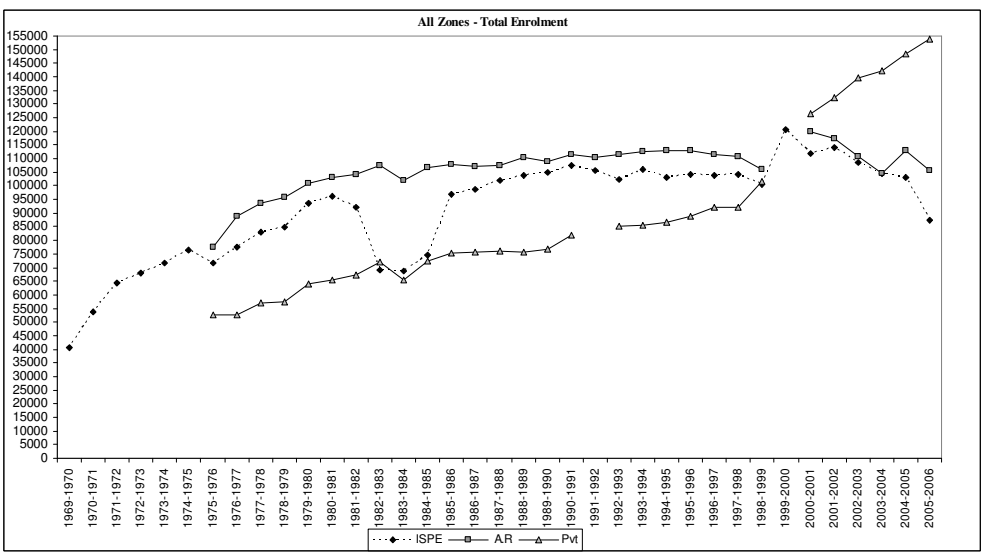
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150000
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140000
135000
130000
125000
120000
115000
110000
105000
100000
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85000
80000
75000
70000
65000
60000
55000
50000
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1971-1972
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1973-1974
1974-1975
1975-1976
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1998-1999
1999-2000
2000-2001
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
ISPE
A.R
Pvt

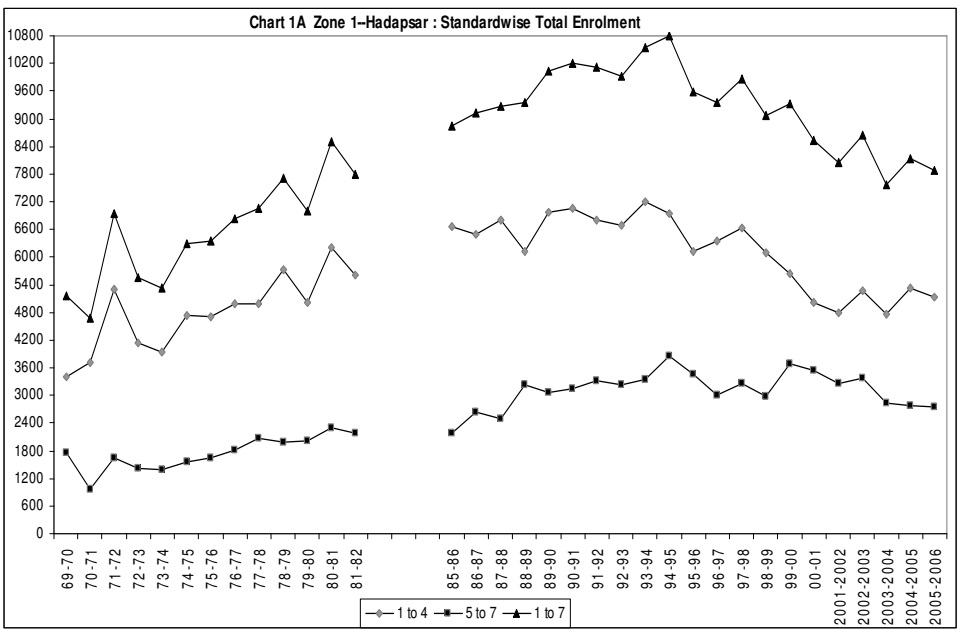
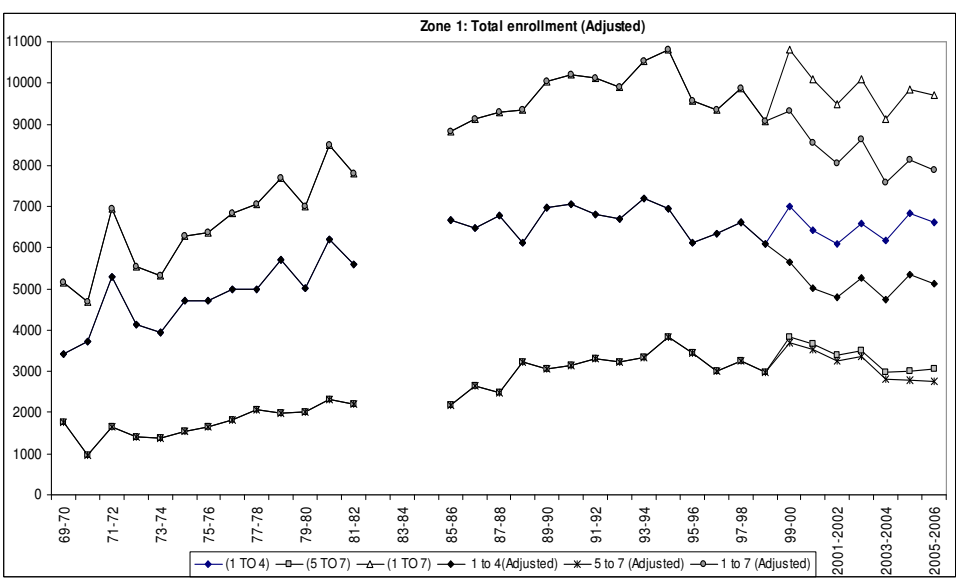
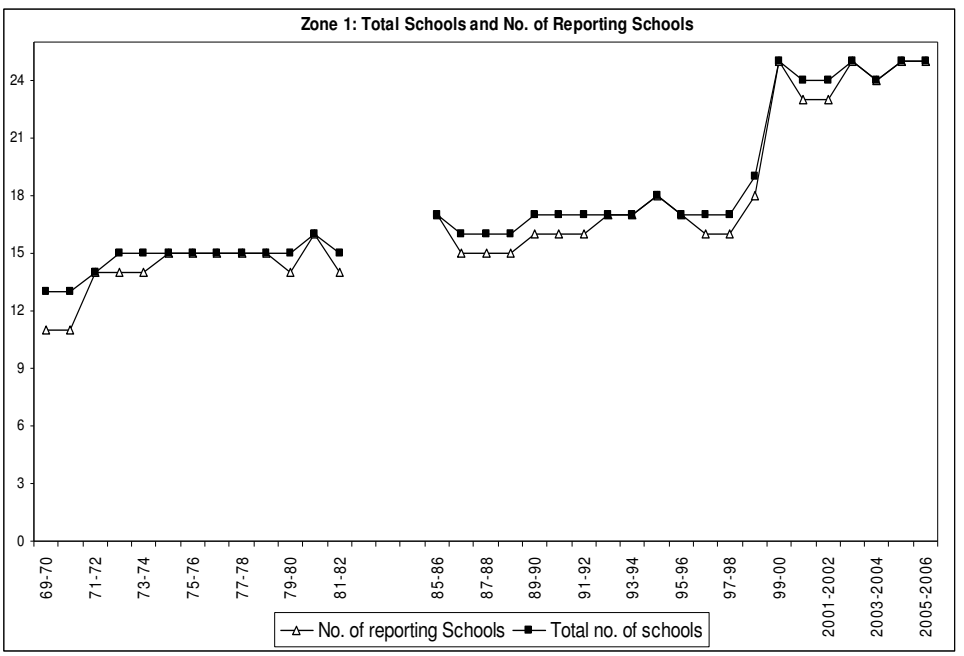
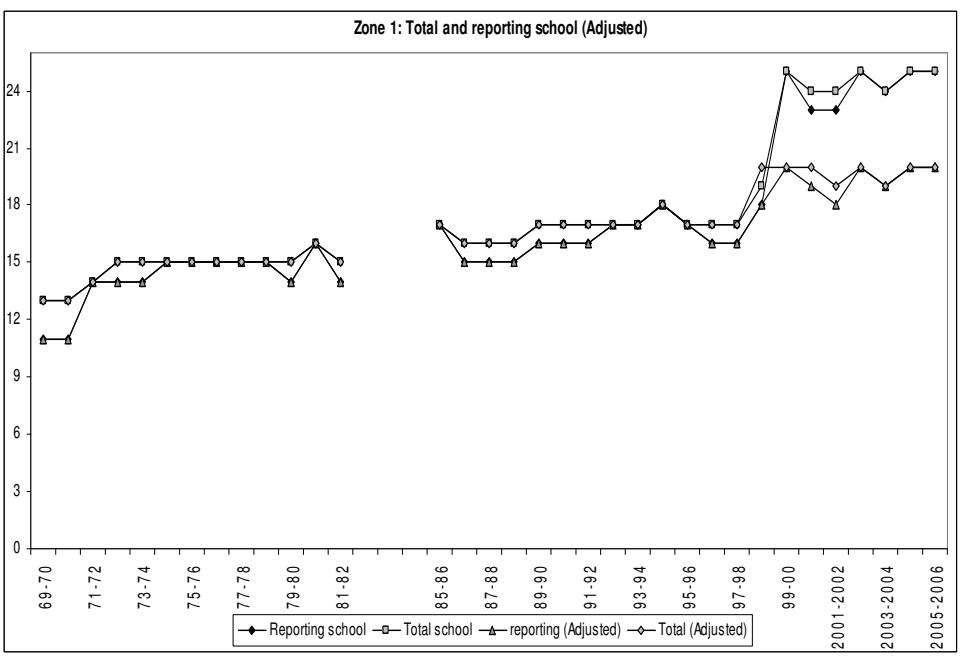


Chart 1A Zone 1–Hadapsar : Standardwise Total Enrolment
10800
10200
9600
9000
8400
7800
7200
6600
6000
5400
4800
4200
3600
3000
2400
1800
1200
600
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1 to 4
5 to 7
1 to 7


Zone 1: Total enrollment (Adjusted)
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
83-84
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
(1 TO 4)
(5 TO 7)
(1 TO 7)
1 to 4(Adjusted)
5 to 7 (Adjusted)
1 to 7 (Adjusted)


Zone 1: Total Schools and No. of Reporting Schools
0
3
6
9
12
15
18
21
24
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
No. of reporting Schools
Total no. of schools


Zone 1: Total and reporting school (Adjusted)
0
3
6
9
12
15
18
21
24
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Reporting school
Total school
reporting (Adjusted)
Total (Adjusted)

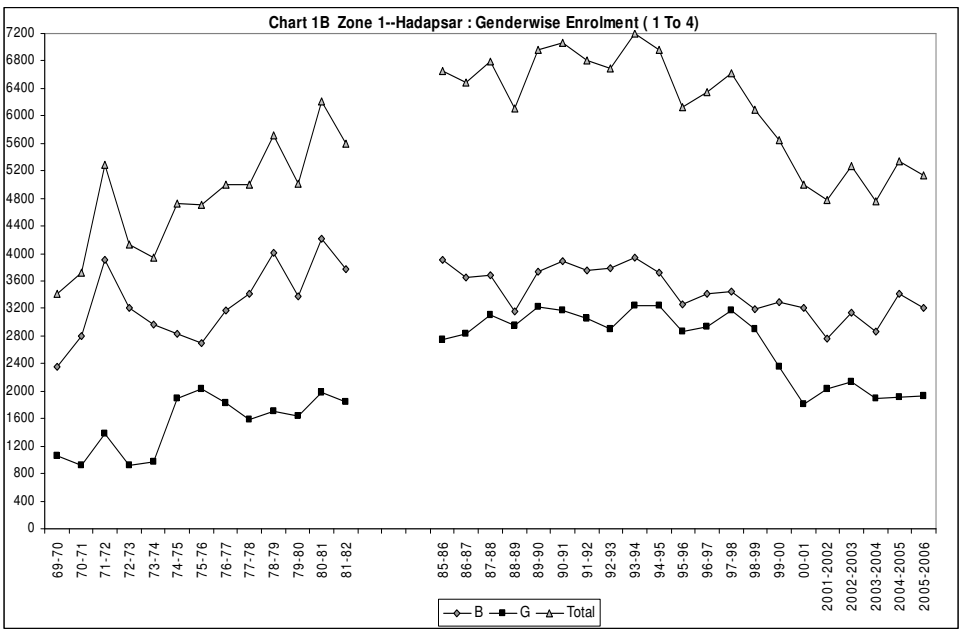
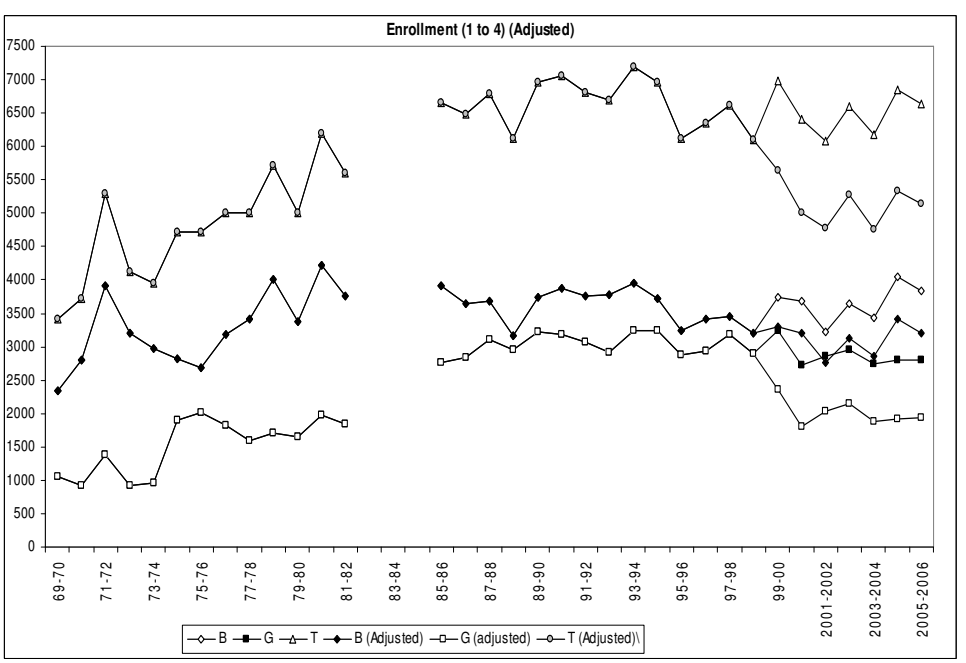


Chart 1B Zone 1--Hadapsar : Genderwise Enrolment (1 To 4)
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
Total


Enrollment (1 to 4) (Adjusted)
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
83-84
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (Adjusted)
G (adjusted)
T (Adjusted)\

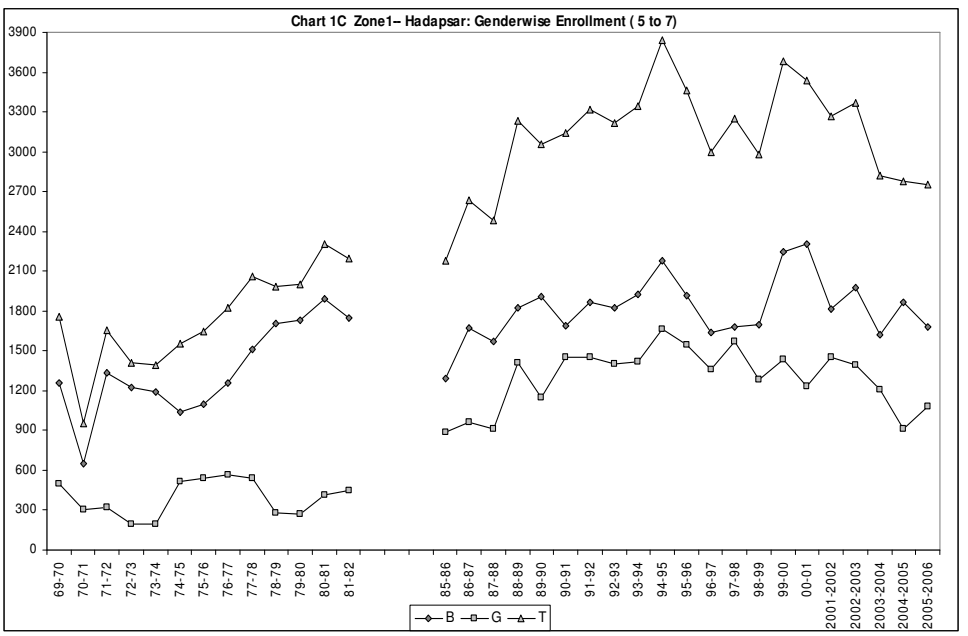
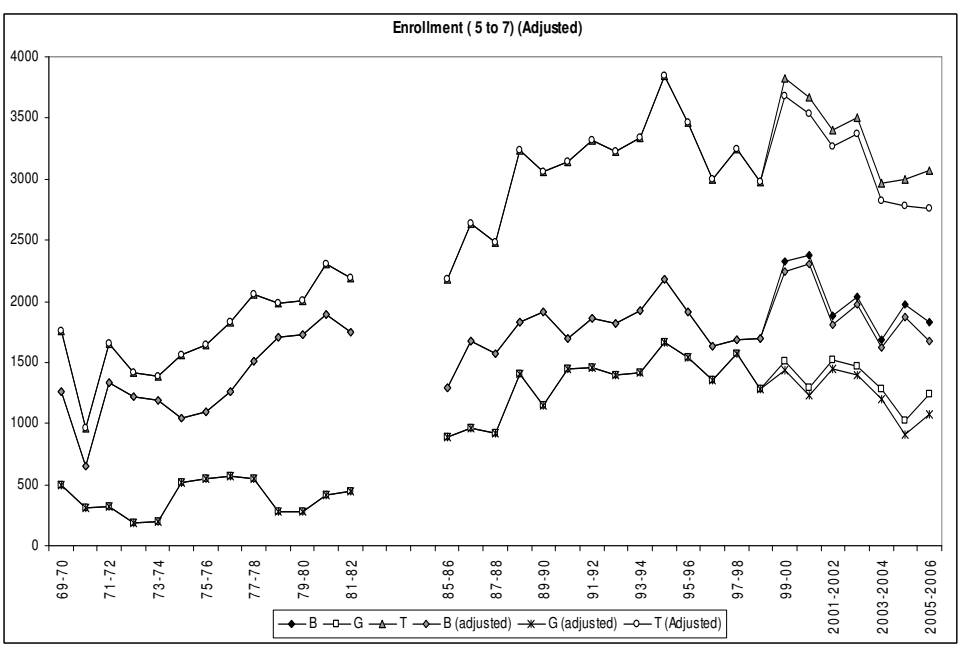


Chart 1C Zone1– Hadapsar: Genderwise Enrollment (5 to 7)
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T


Enrollment (5 to 7) (Adjusted)
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (adjusted)
G (adjusted)
T (Adjusted)

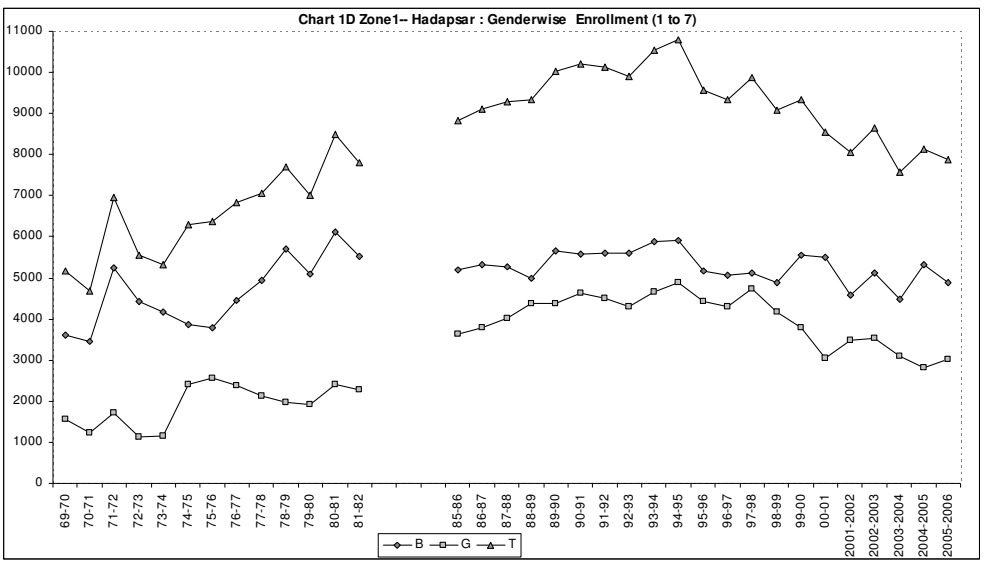
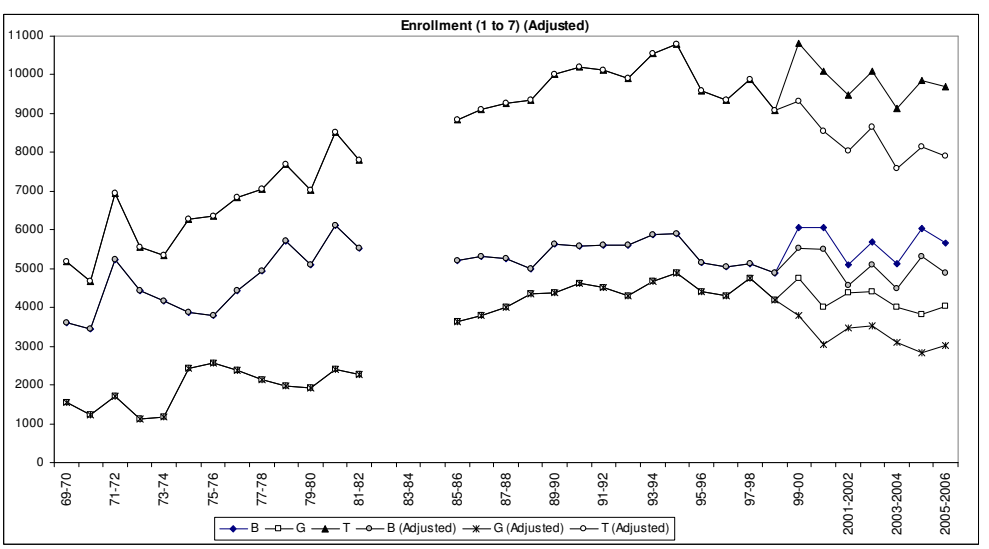
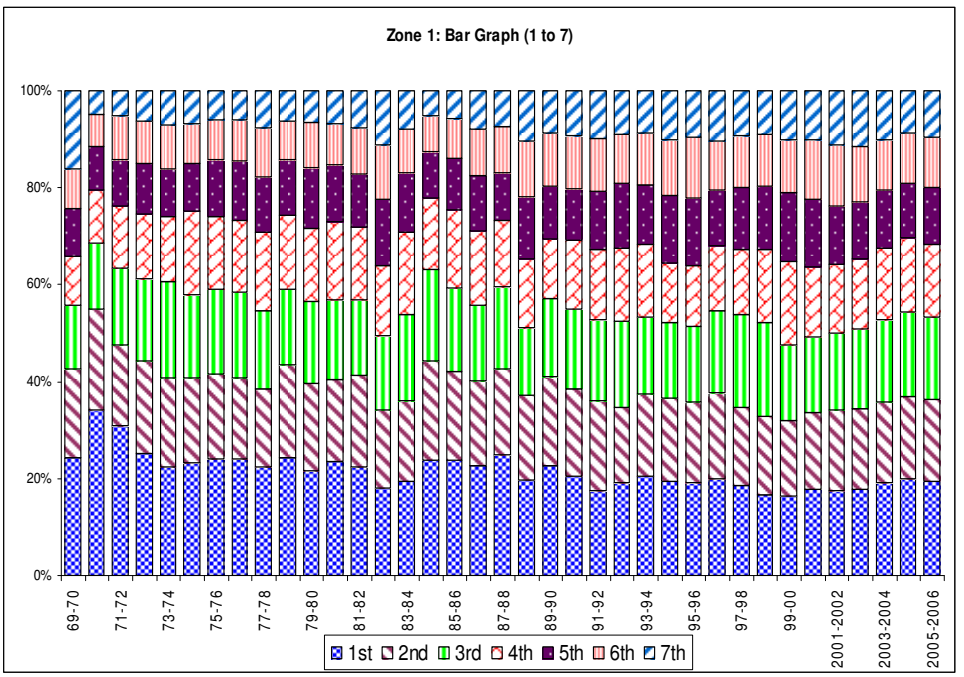
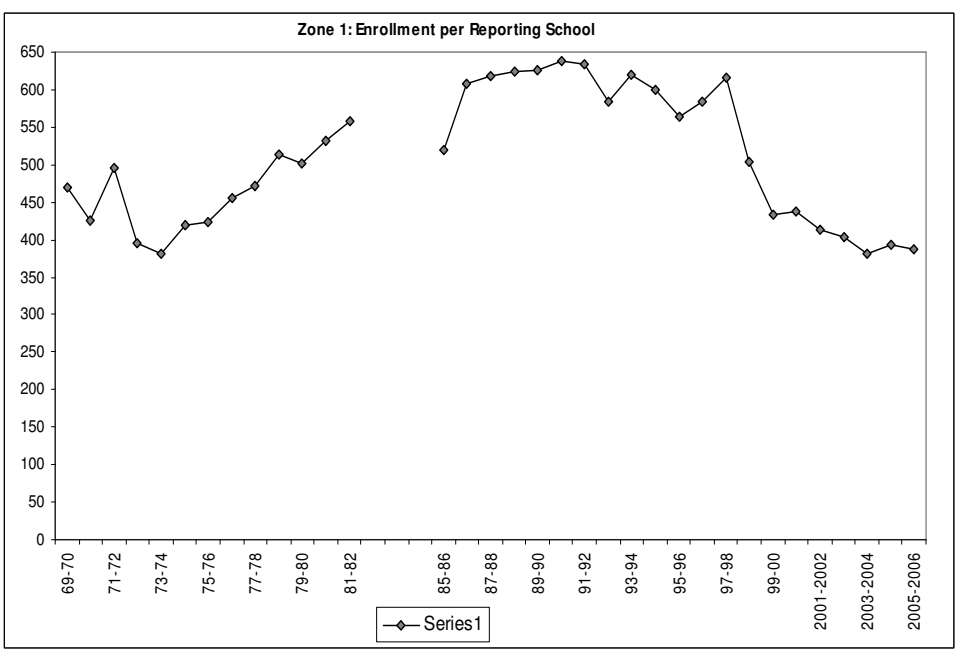
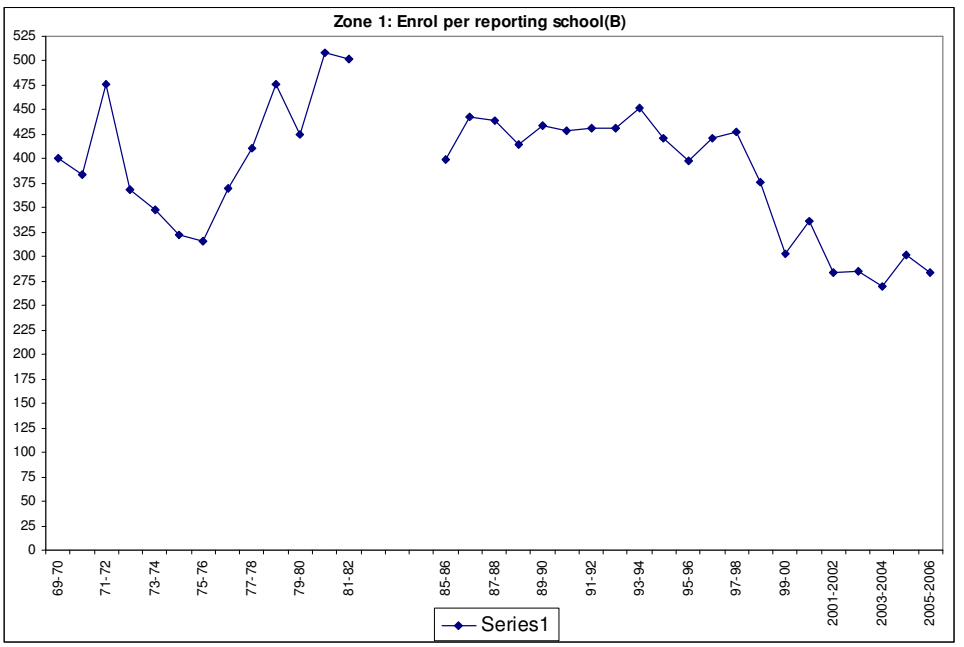


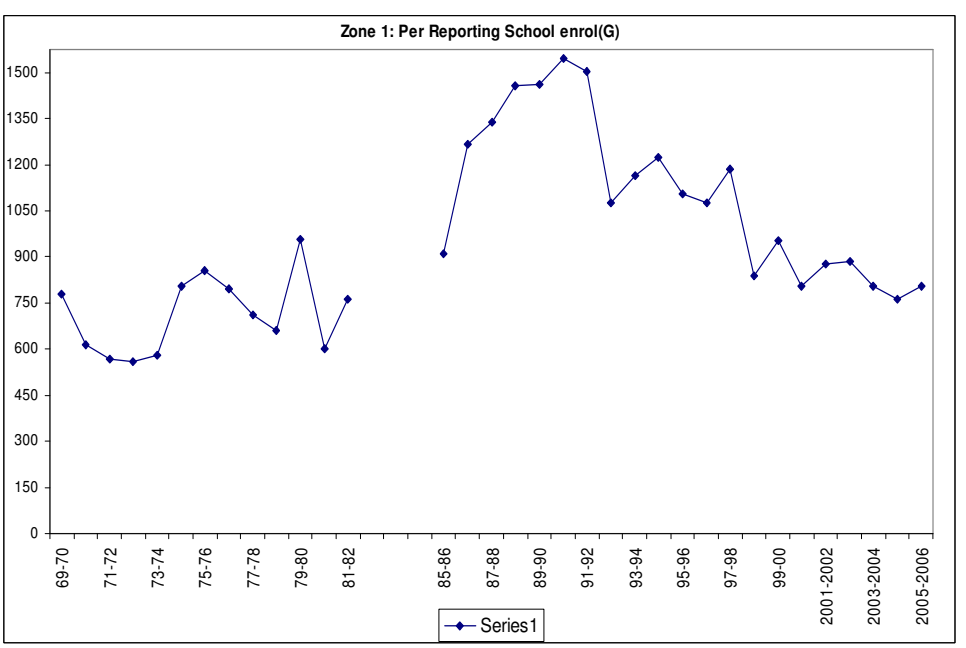
Chart 1D Zone1-- Hadapsar : Genderwise Enrollment (1 to 7)
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T

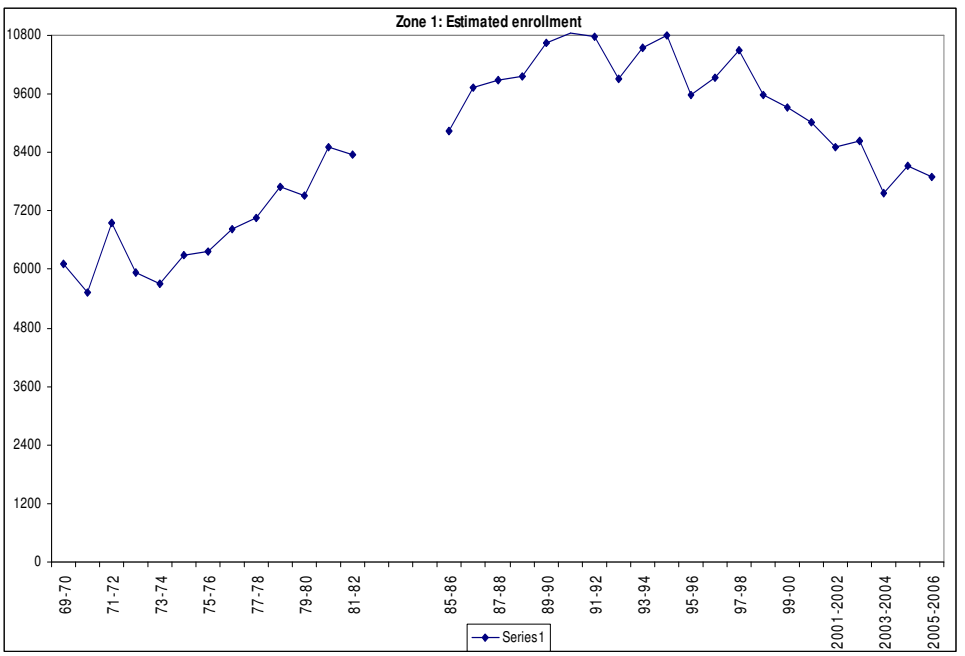

Enrollment (1 to 7) (Adjusted)
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
83-84
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (Adjusted)
G (Adjusted)
T (Adjusted)

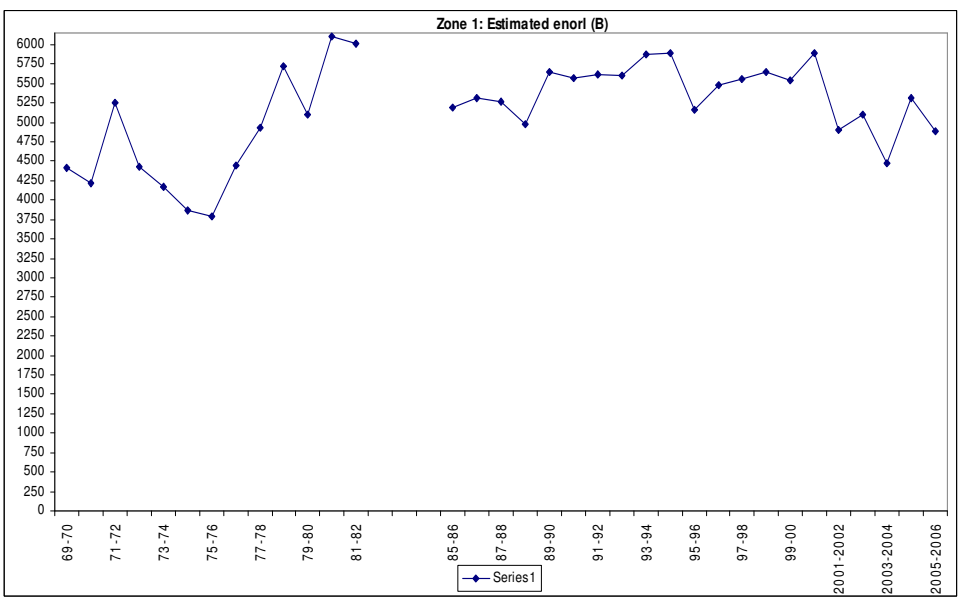

Zone 1: Bar Graph (1 to 7)
100%
80%
60%
40%
20%
0%
69-70
71-72
73-74
75-76
77-78
79-80
81-82
83-84
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1st 2nd 3rd 4th 5th 6th 7th

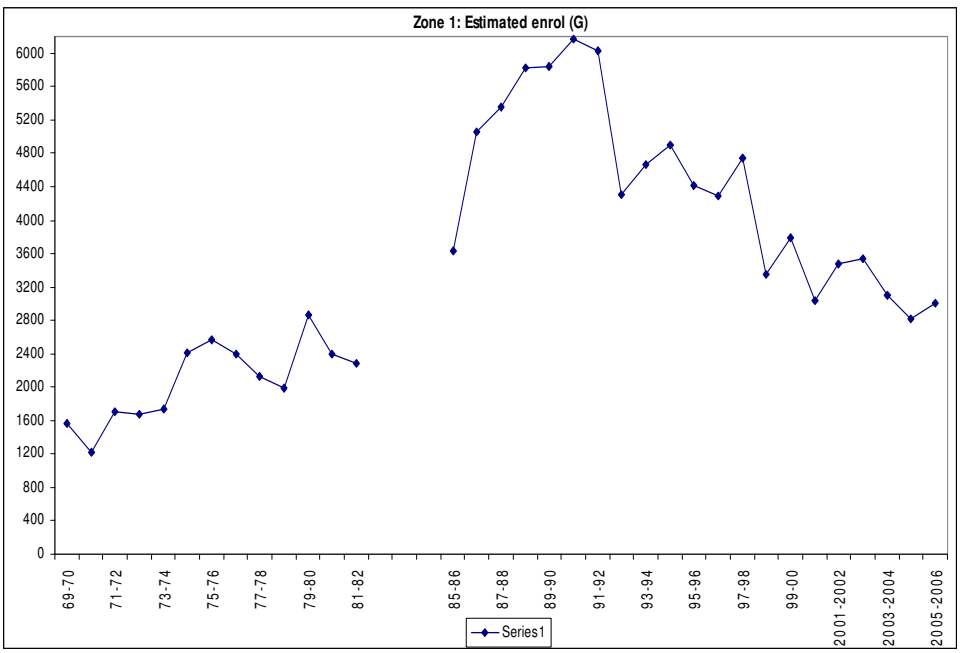

Zone 1: Enrollment per Reporting School
650
600
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

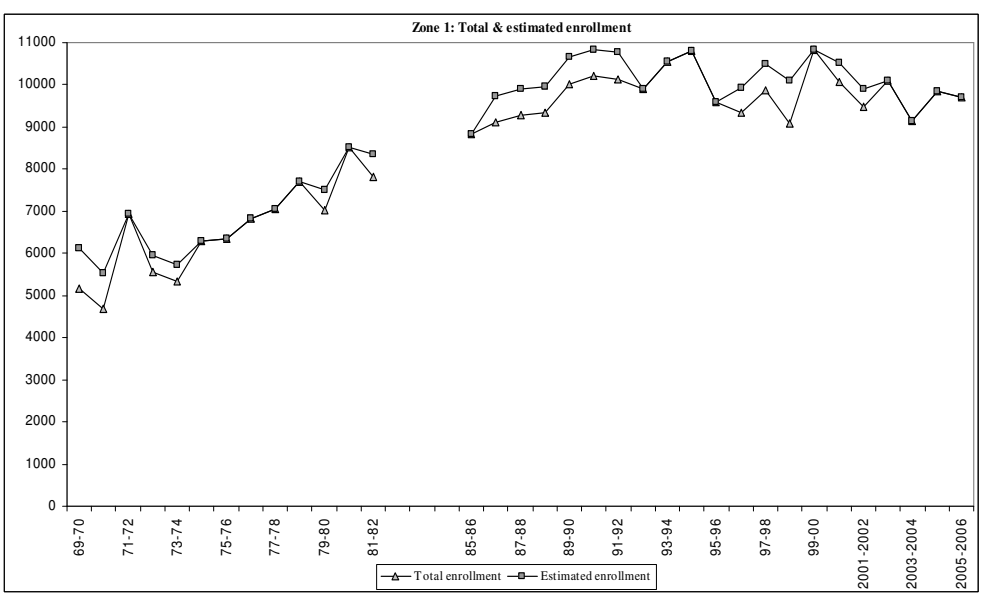

Zone 1: Enrol per reporting school(B)
525
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

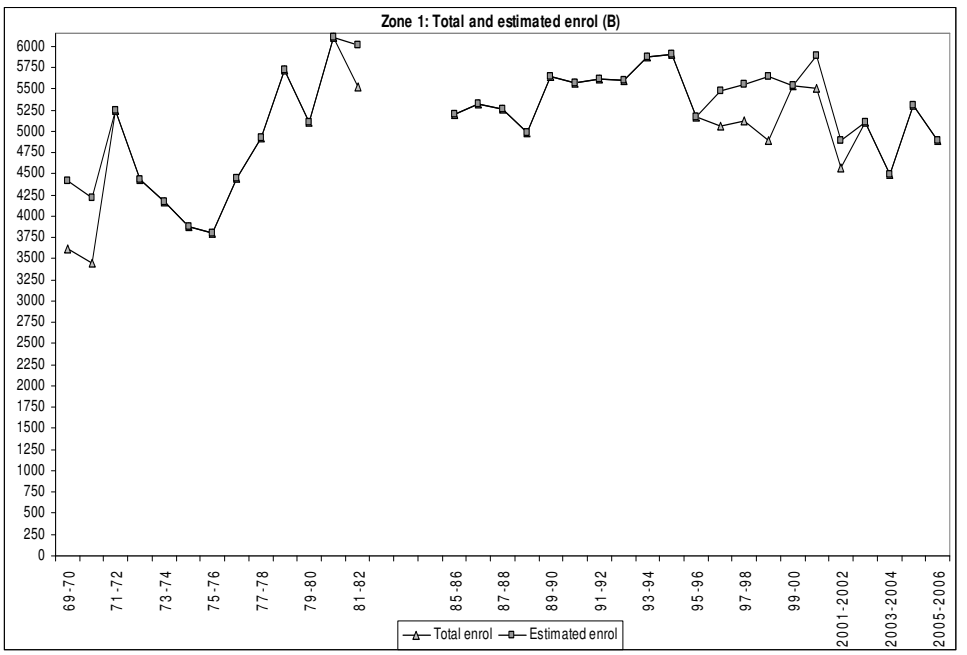

Zone 1: Per Reporting School enrol(G)
1500
1350
1200
1050
900
750
600
450
300
150
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

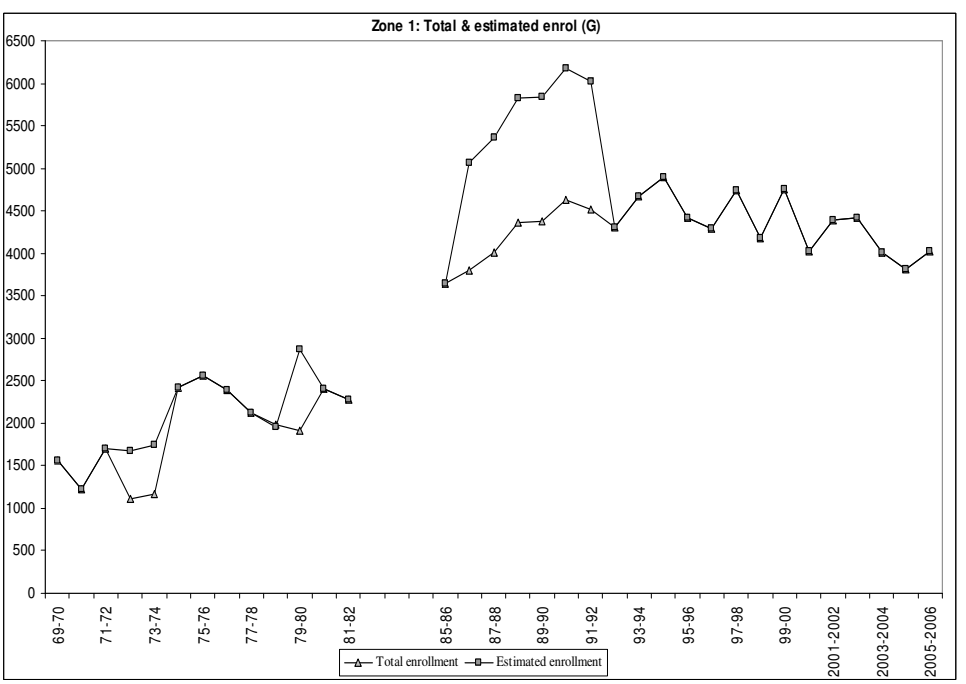

Zone 1: Estimated enrollment
10800
9600
8400
7200
6000
4800
3600
2400
1200
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 1: Estimated enorl (B)
6000
5750
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 1: Estimated enrol (G)
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 1: Total & estimated enrollment
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 1: Total and estimated enrol (B)
6000
5750
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrol
Estimated enrol


Zone 1: Total & estimated enrol (G)
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment

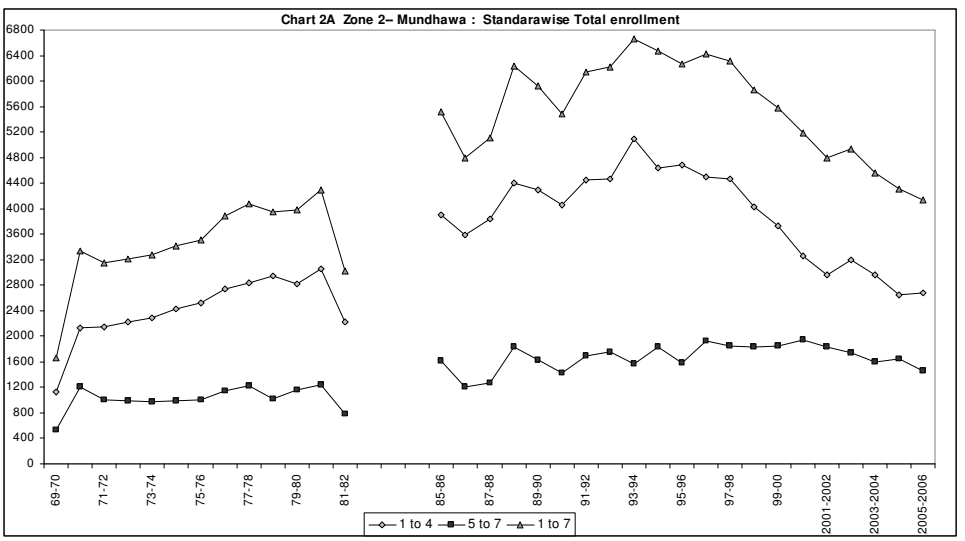
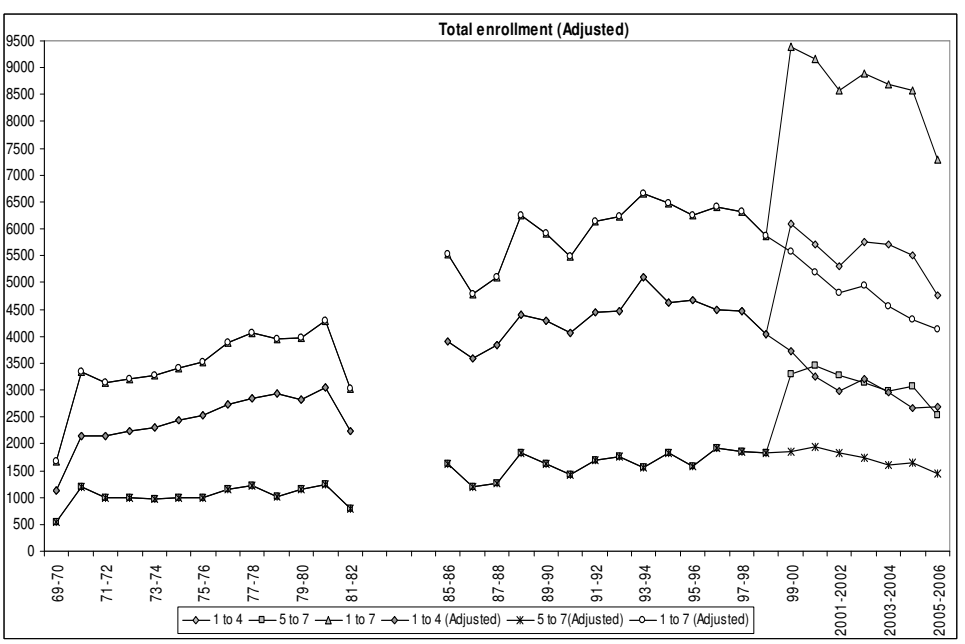
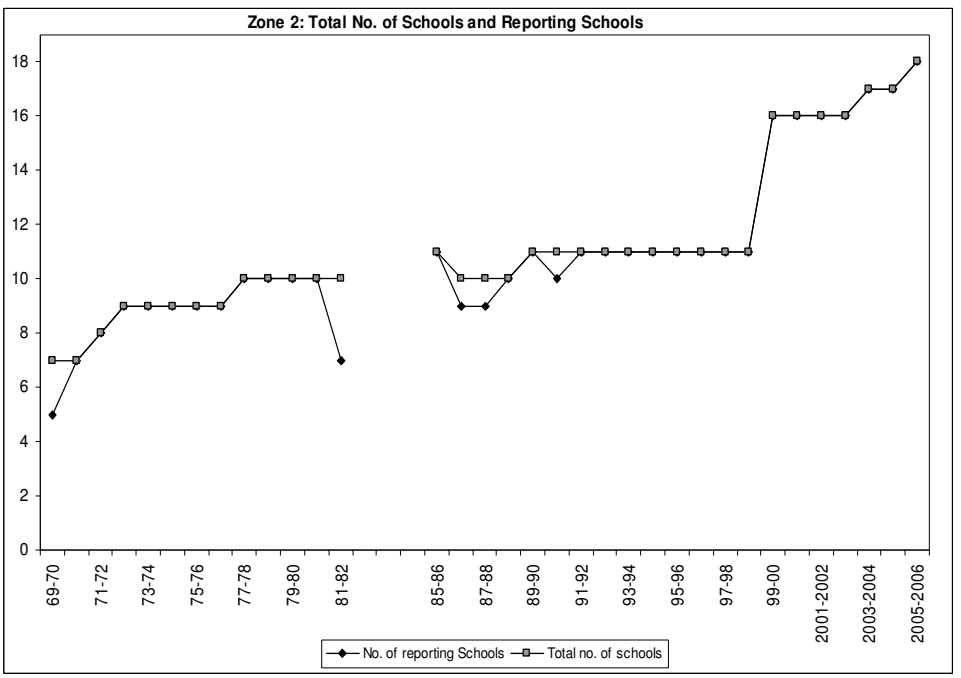
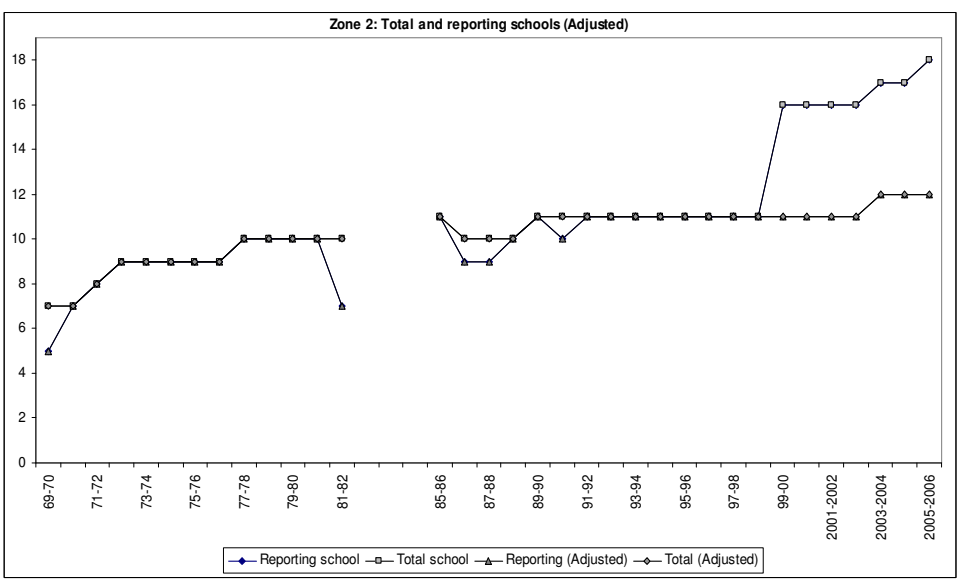


Chart 2A Zone 2– Mundhawa : Standarawise Total enrollment
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 to 4
5 to 7
1 to 7


Total enrollment (Adjusted)
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 to 4
5 to 7
1 to 7
1 to 4 (Adjusted)
5 to 7(Adjusted)
1 to 7 (Adjusted)


Zone 2: Total No. of Schools and Reporting Schools
18
16
14
12
10
8
6
4
2
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
No. of reporting Schools
Total no. of schools


Zone 2: Total and reporting schools (Adjusted)
18
16
14
12
10
8
6
4
2
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Reporting school
Total school
Reporting (Adjusted)
Total (Adjusted)

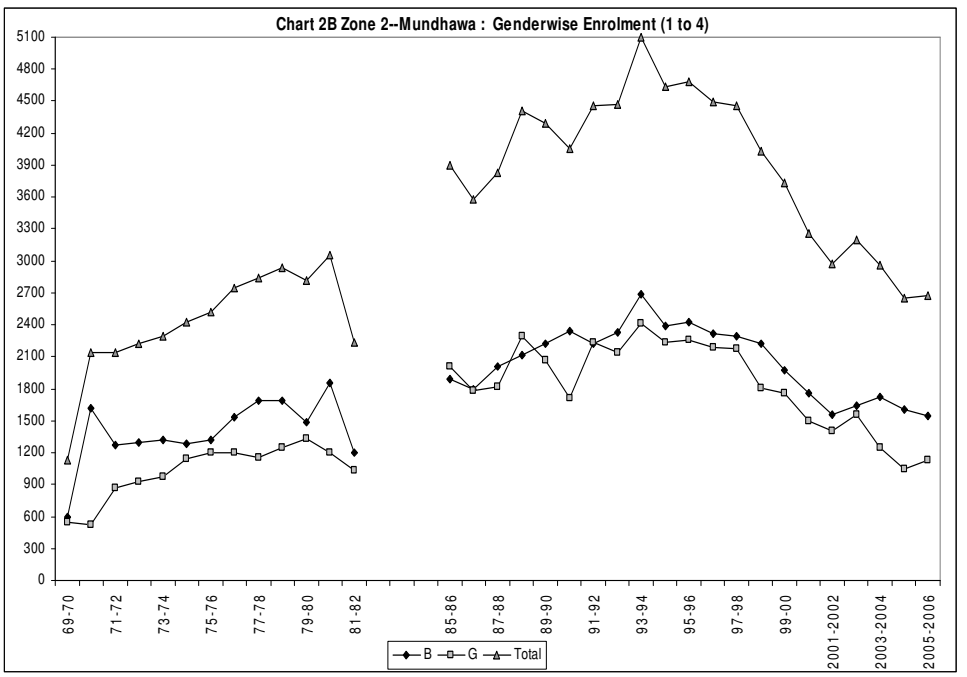
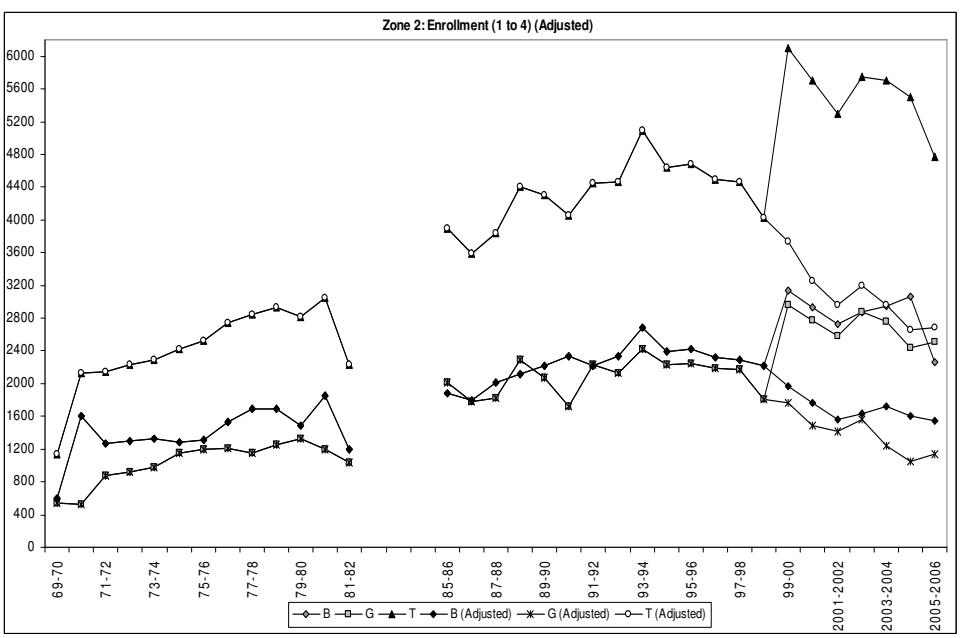


Chart 2B Zone 2--Mundhawa : Genderwise Enrolment (1 to 4)
5100
4800
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
Total


Zone 2: Enrollment (1 to 4) (Adjusted)
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (Adjusted)
G (Adjusted)
T (Adjusted)

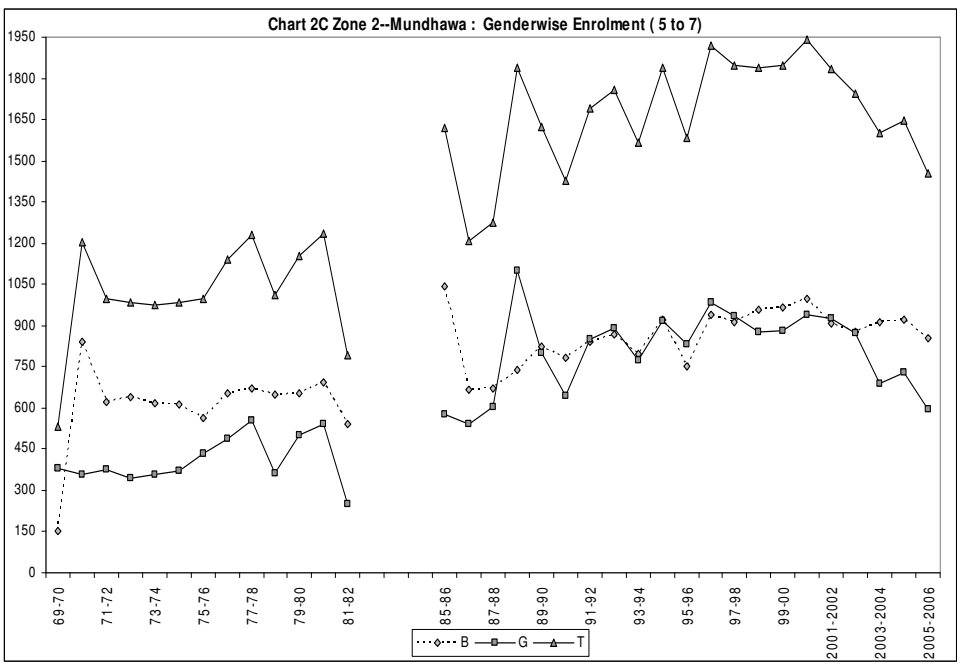
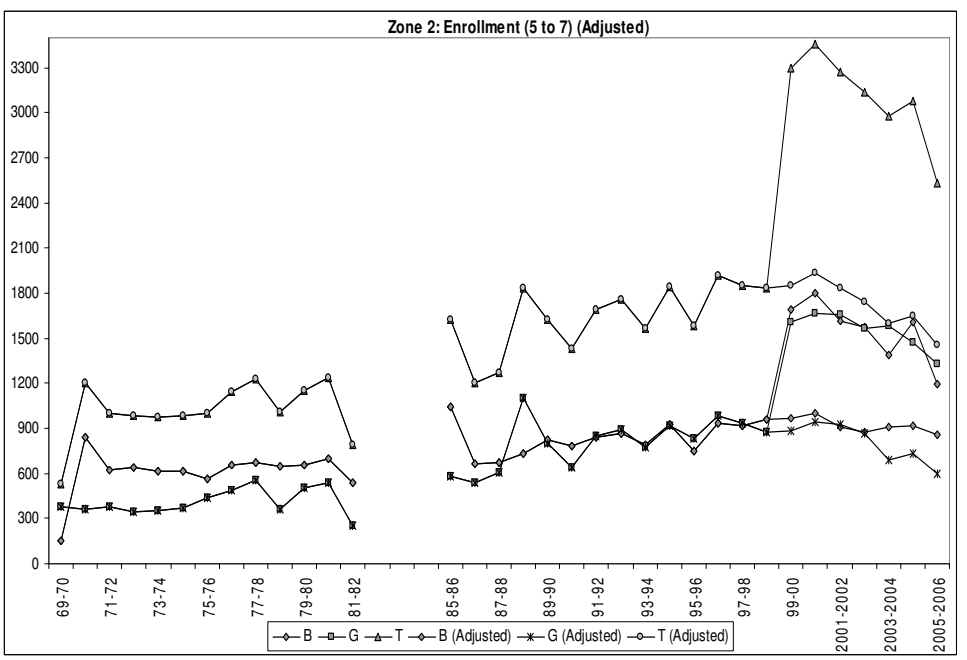


Chart 2C Zone 2--Mundhawa : Genderwise Enrolment (5 to 7)
1950
1800
1650
1500
1350
1200
1050
900
750
600
450
300
150
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T


Zone 2: Enrollment (5 to 7) (Adjusted)
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (Adjusted)
G (Adjusted)
T (Adjusted)

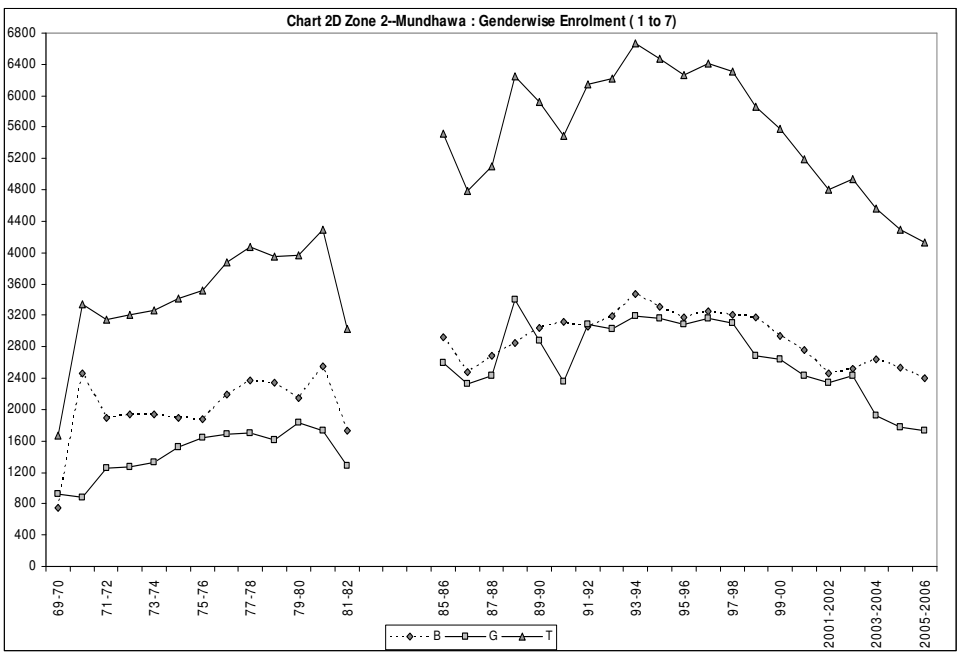
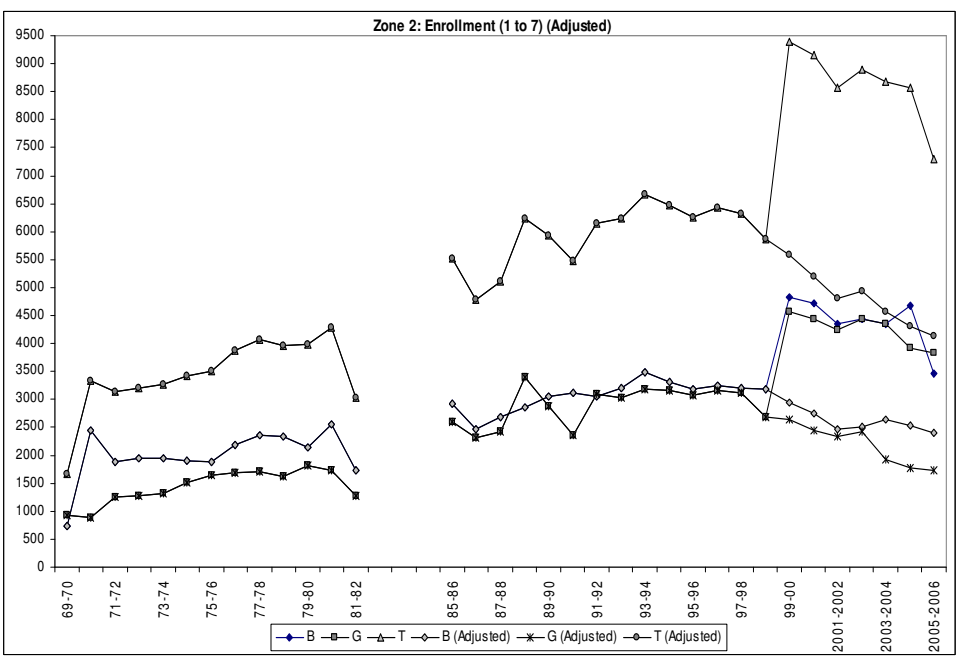
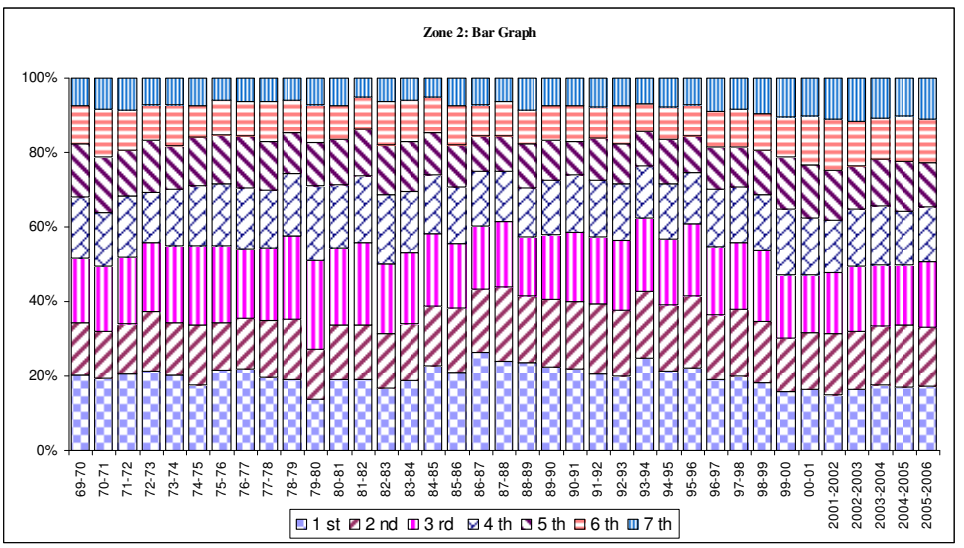
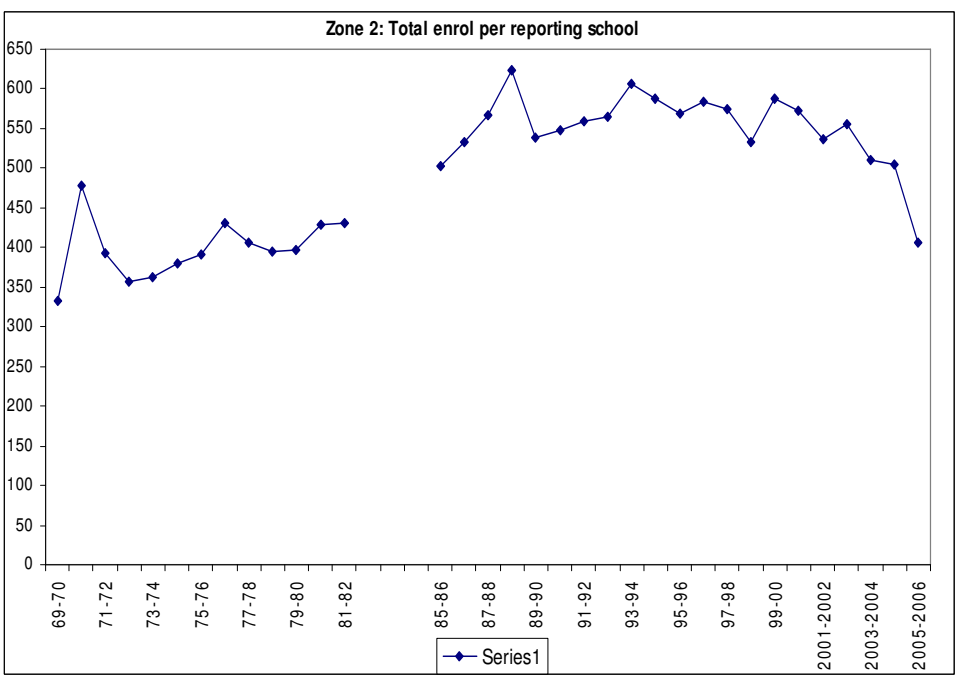
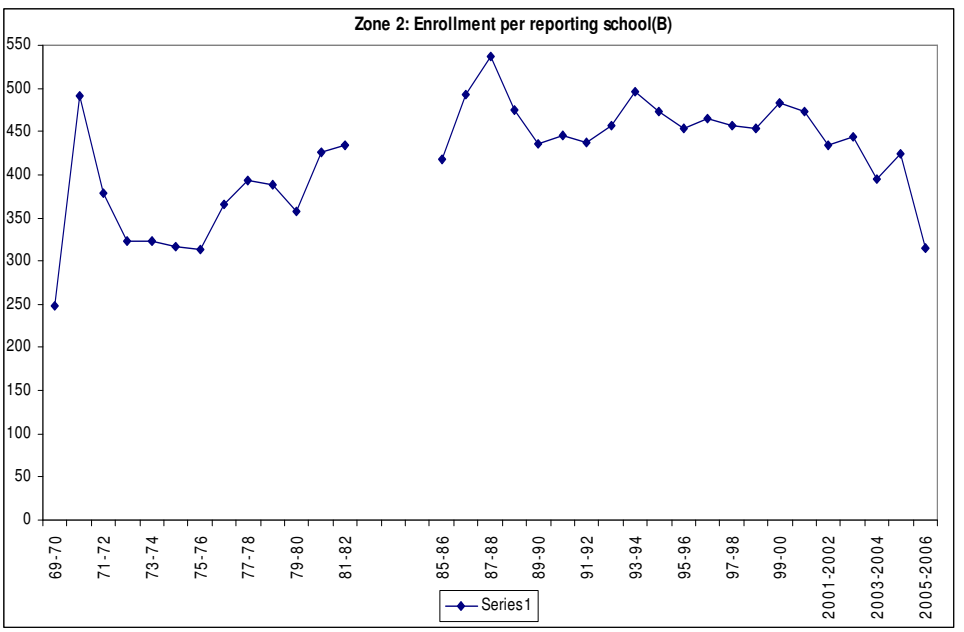


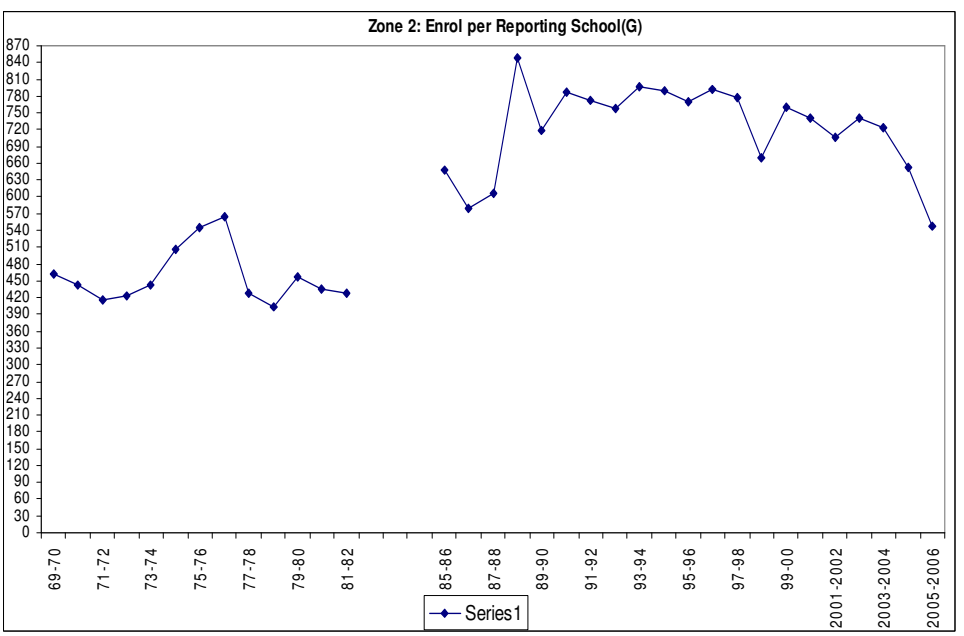
Chart 2D Zone 2--Mundhawa : Genderwise Enrolment (1 to 7)
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T

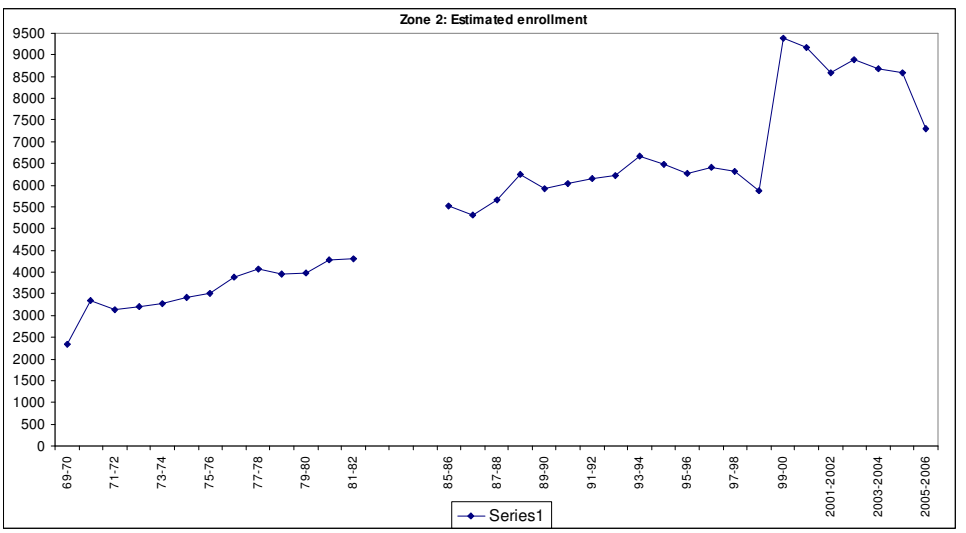

Zone 2: Enrollment (1 to 7) (Adjusted)
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (Adjusted)
G (Adjusted)
T (Adjusted)

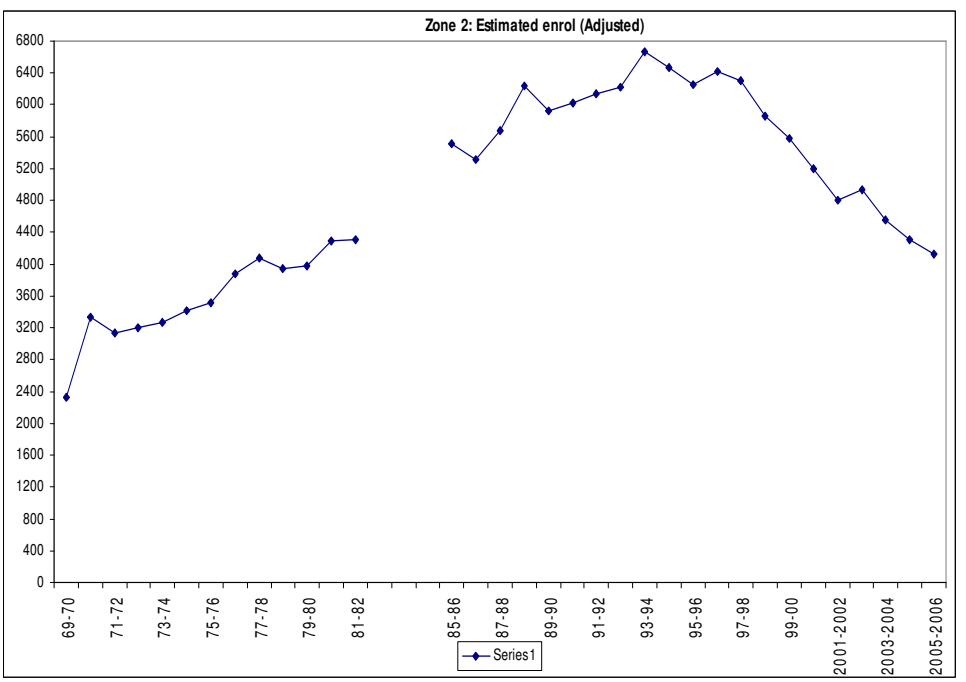

Zone 2: Bar Graph
100%
80%
60%
40%
20%
0%
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1 st
2 nd
3 rd
4 th
5 th
6 th
7 th

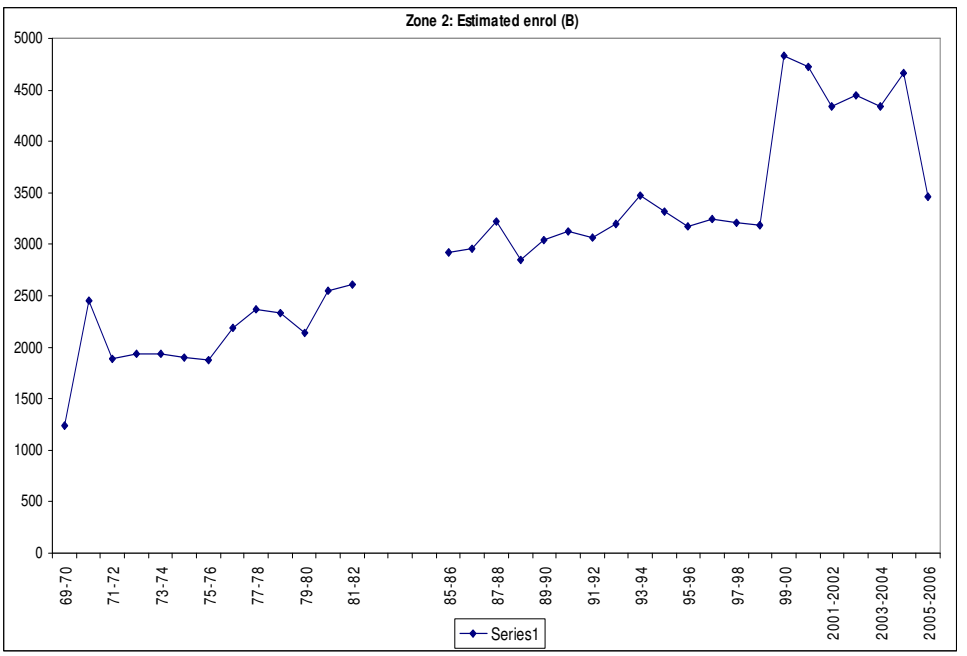

Zone 2: Total enrol per reporting school
650
600
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

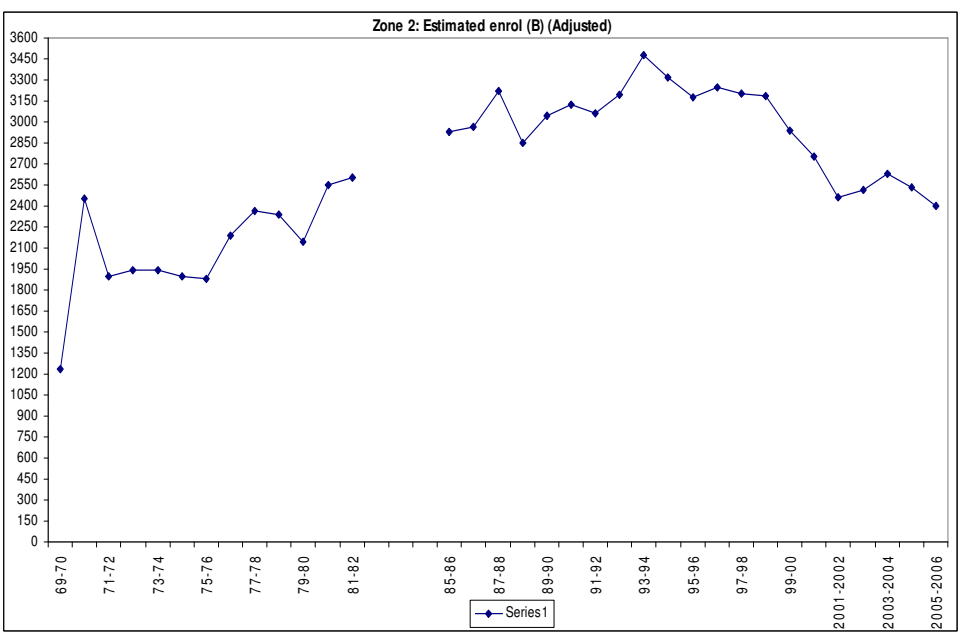

Zone 2: Enrollment per reporting school(B)
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

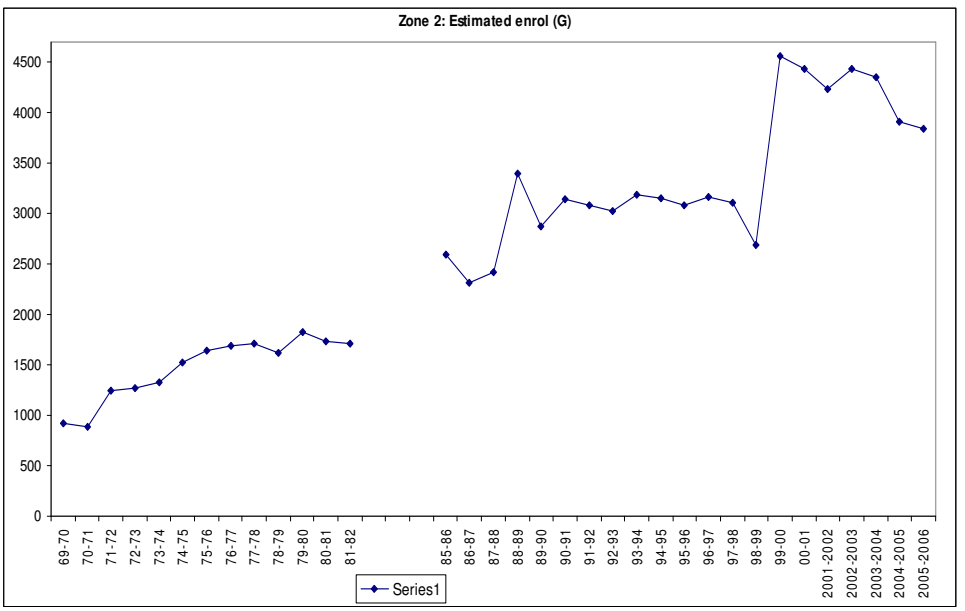

Zone 2: Enrol per Reporting School(G)
870
840
810
780
750
720
690
660
630
600
570
540
510
480
450
420
390
360
330
300
270
240
210
180
150
120
90
60
30
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

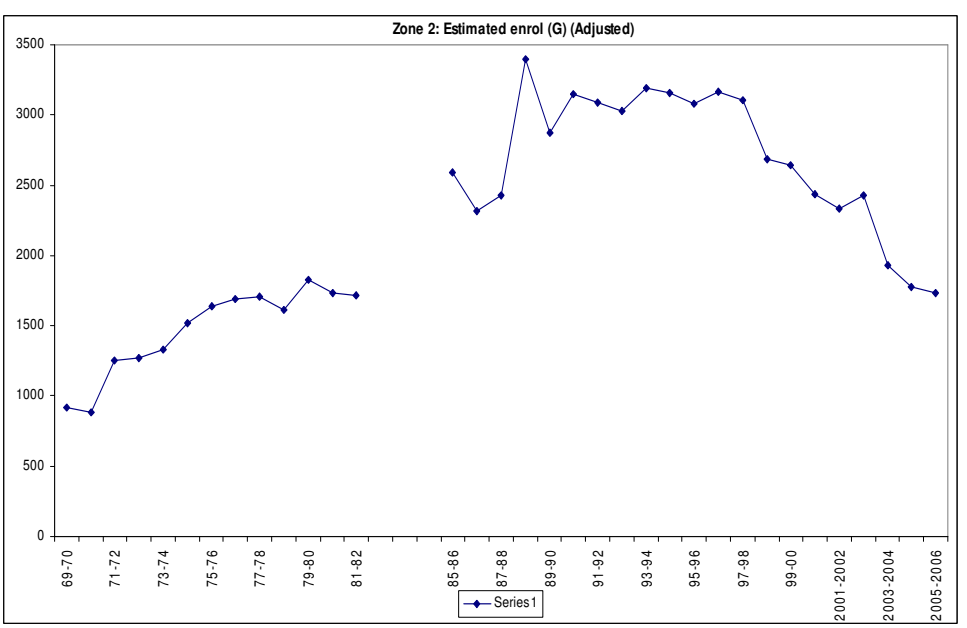

Zone 2: Estimated enrollment
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

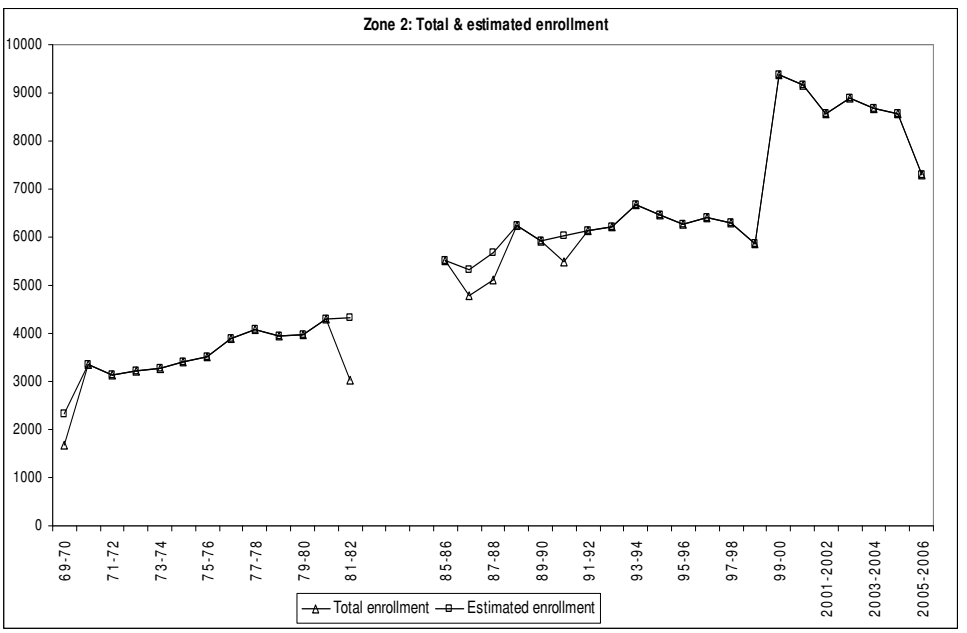

Zone 2: Estimated enrol (Adjusted)
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

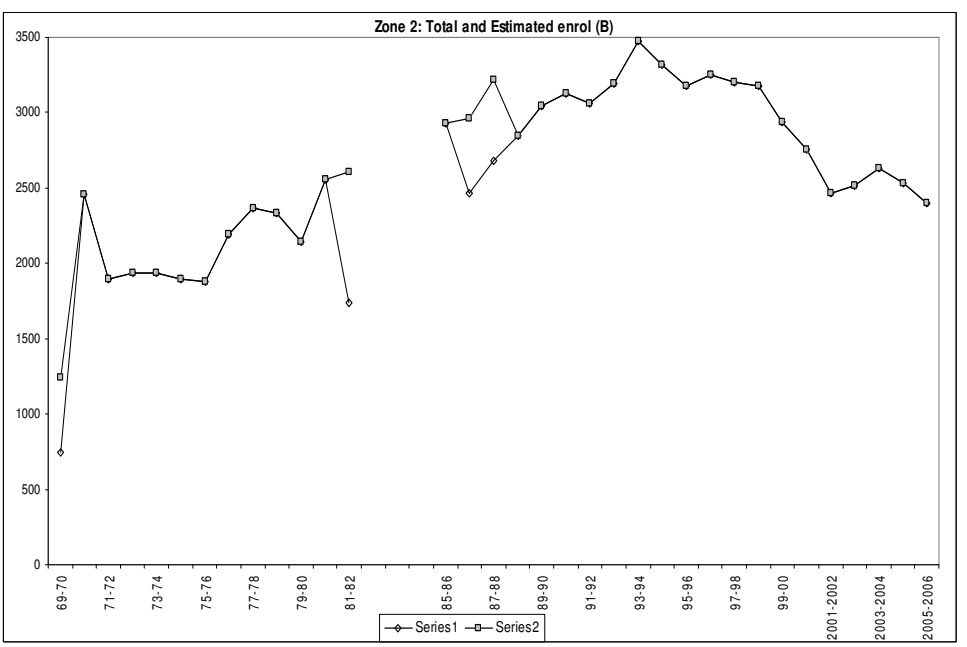

Zone 2: Estimated enrol (B)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

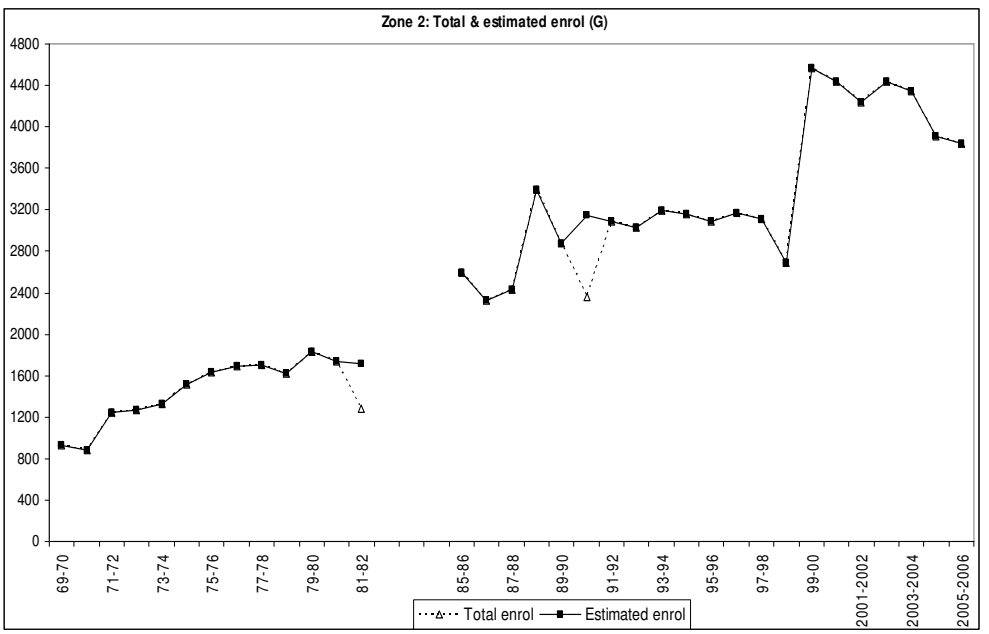

Zone 2: Estimated enrol (B) (Adjusted)
3600
3450
3300
3150
3000
2850
2700
2550
2400
2250
2100
1950
1800
1650
1500
1350
1200
1050
900
750
600
450
300
150
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 2: Estimated enrol (G)
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
Series1

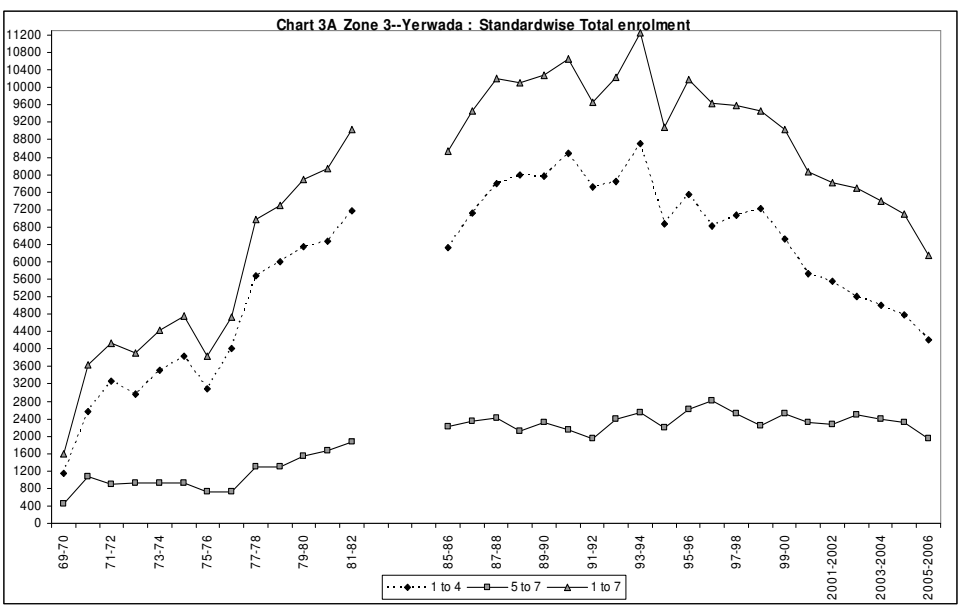

Zone 2: Estimated enrol (G) (Adjusted)
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

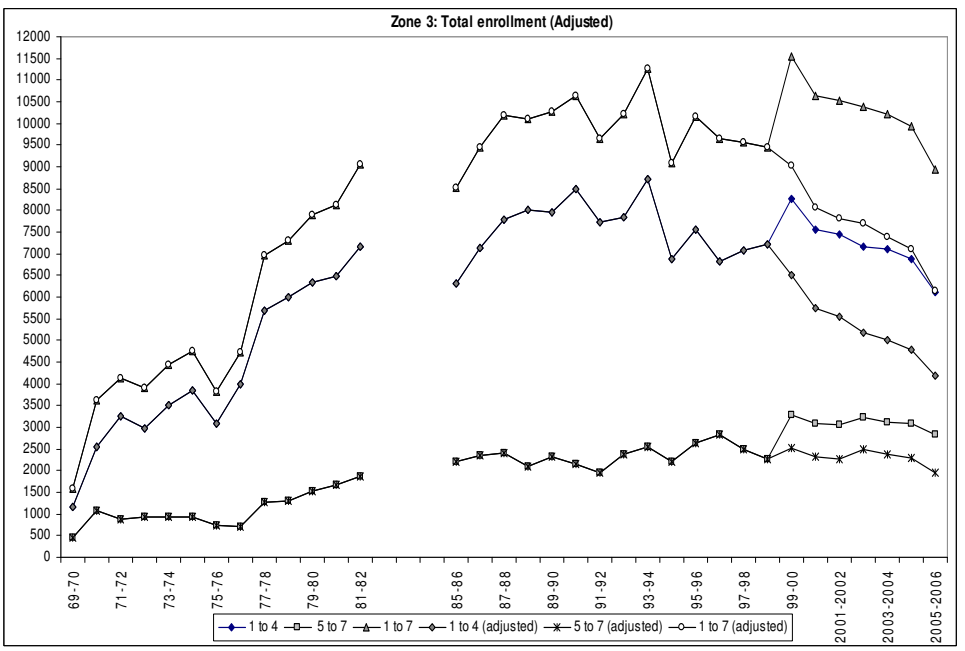

Zone 2: Total & estimated enrollment
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment

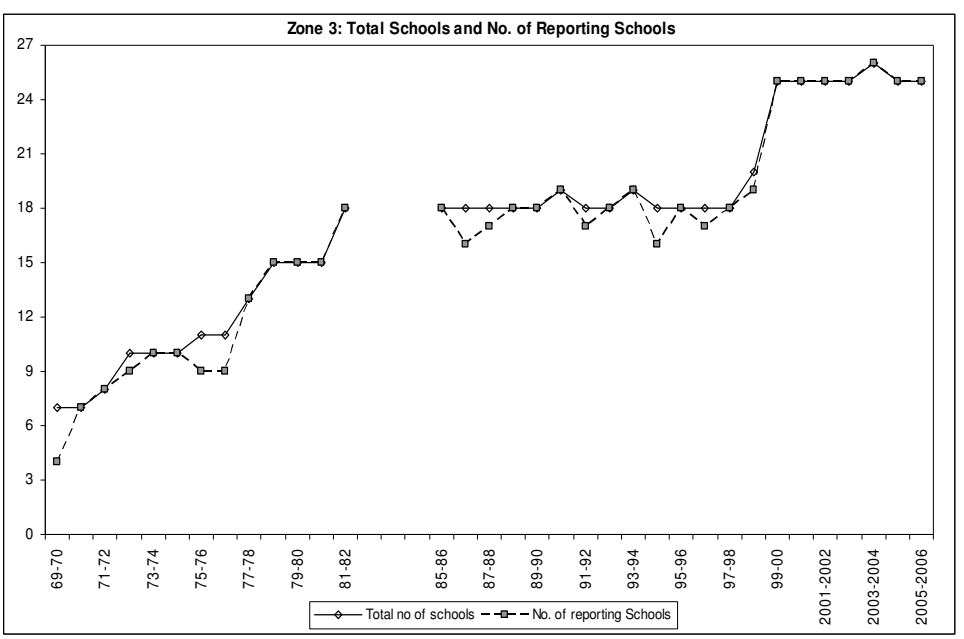

Zone 2: Total and Estimated enrol (B)
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1
Series2

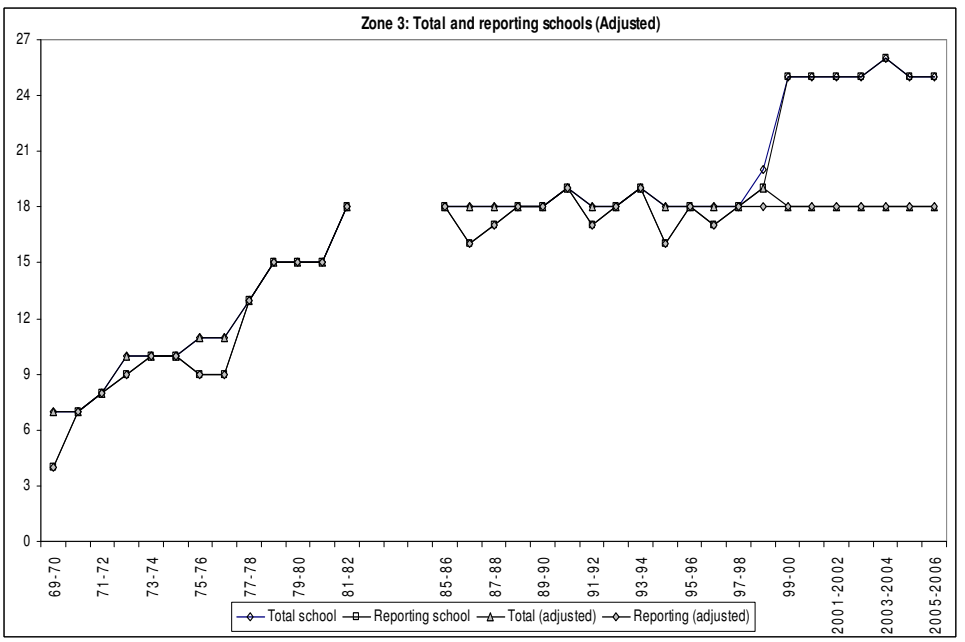


Zone 3 Yerwada Laxminagar




Zone 3: Total enrollment (Adjusted)
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 to 4
5 to 7
1 to 7
1 to 4 (adjusted)
5 to 7 (adjusted)
1 to 7 (adjusted)


Zone 3: Total Schools and No. of Reporting Schools
27
24
21
18
15
12
9
6
3
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total no of schools
No. of reporting Schools


Zone 3: Total and reporting schools (Adjusted)
27
24
21
18
15
12
9
6
3
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total school
Reporting school
Total (adjusted)
Reporting (adjusted)

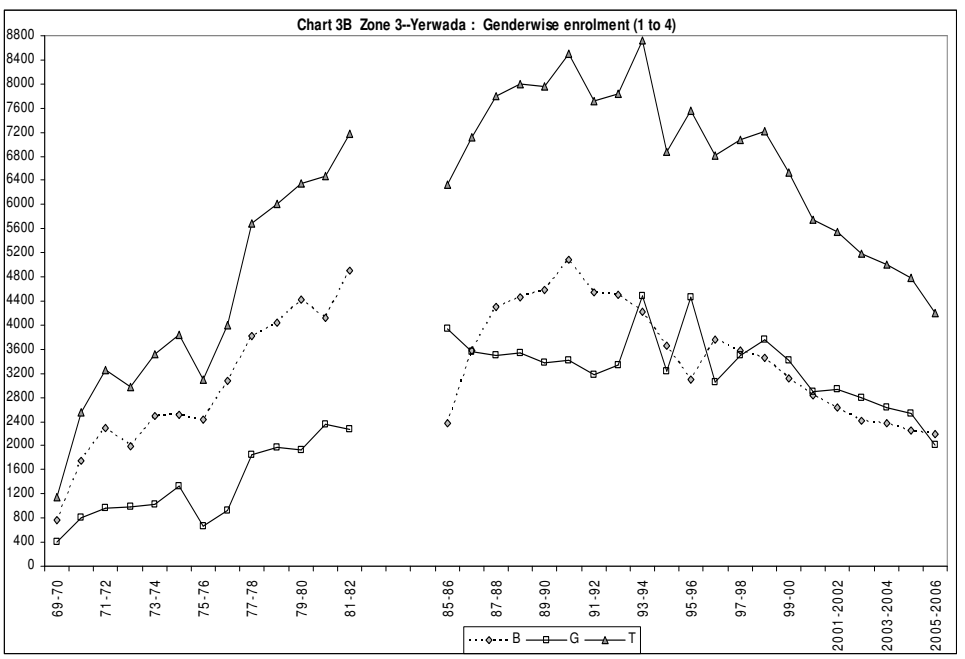
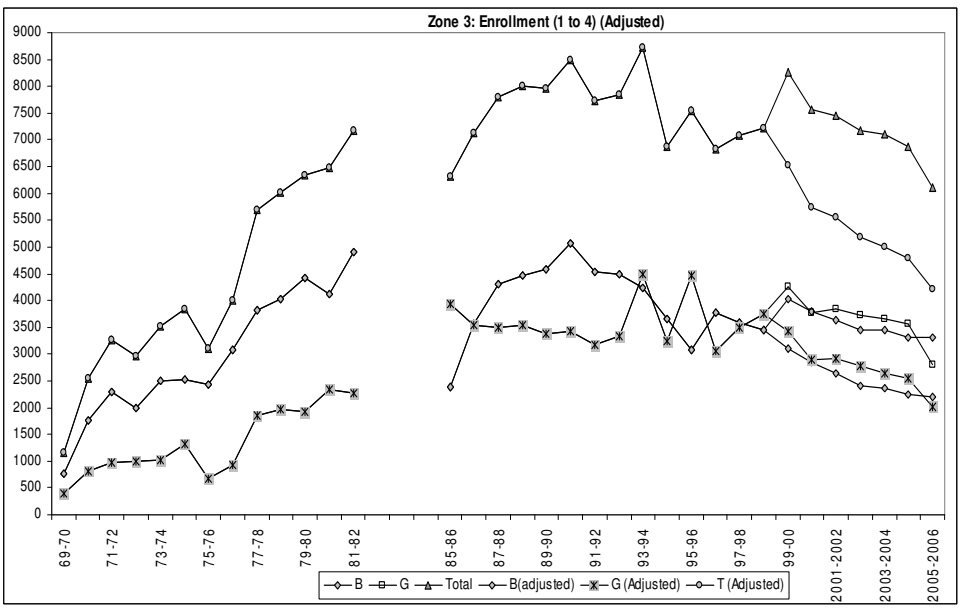


Chart 3B Zone 3--Yerwada : Genderwise enrolment (1 to 4)
8800
8400
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T


Zone 3: Enrollment (1 to 4) (Adjusted)
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
Total
B(adjusted)
G (Adjusted)
T (Adjusted)

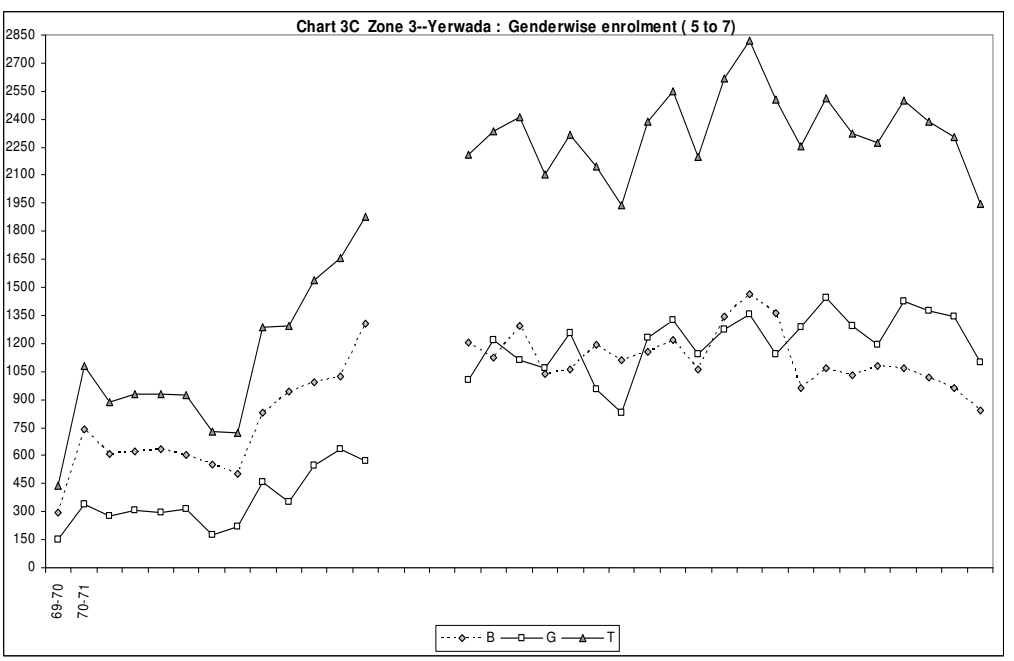
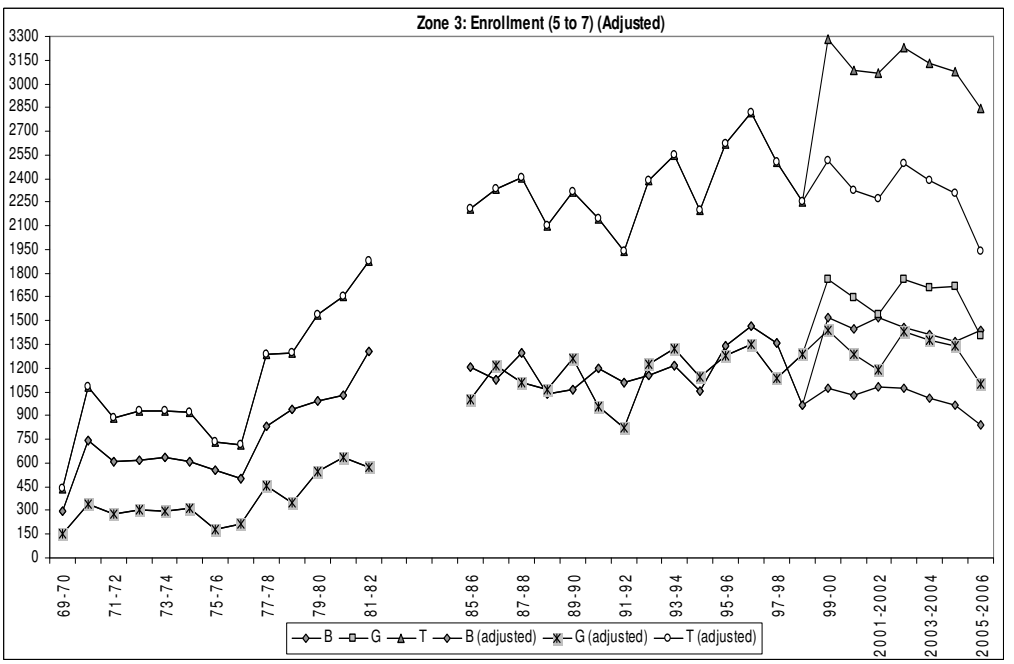


Chart 3C Zone 3--Yerwada : Genderwise enrolment (5 to 7)
2850
2700
2550
2400
2250
2100
1950
1800
1650
1500
1350
1200
1050
900
750
600
450
300
150
0
69-70
70-71
B
G
T


Zone 3: Enrollment (5 to 7) (Adjusted)
3300
3150
3000
2850
2700
2550
2400
2250
2100
1950
1800
1650
1500
1350
1200
1050
900
750
600
450
300
150
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (adjusted)
G (adjusted)
T (adjusted)

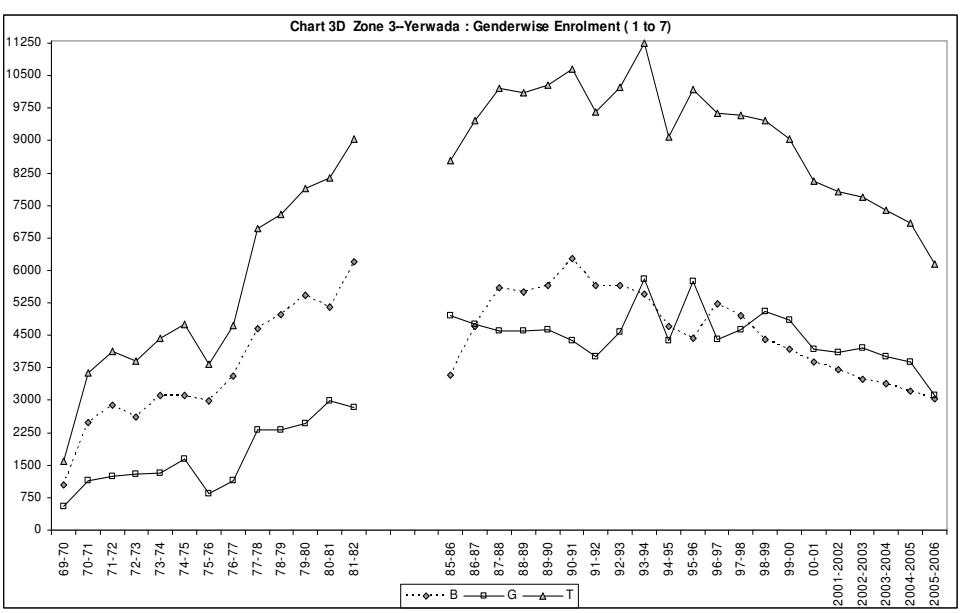
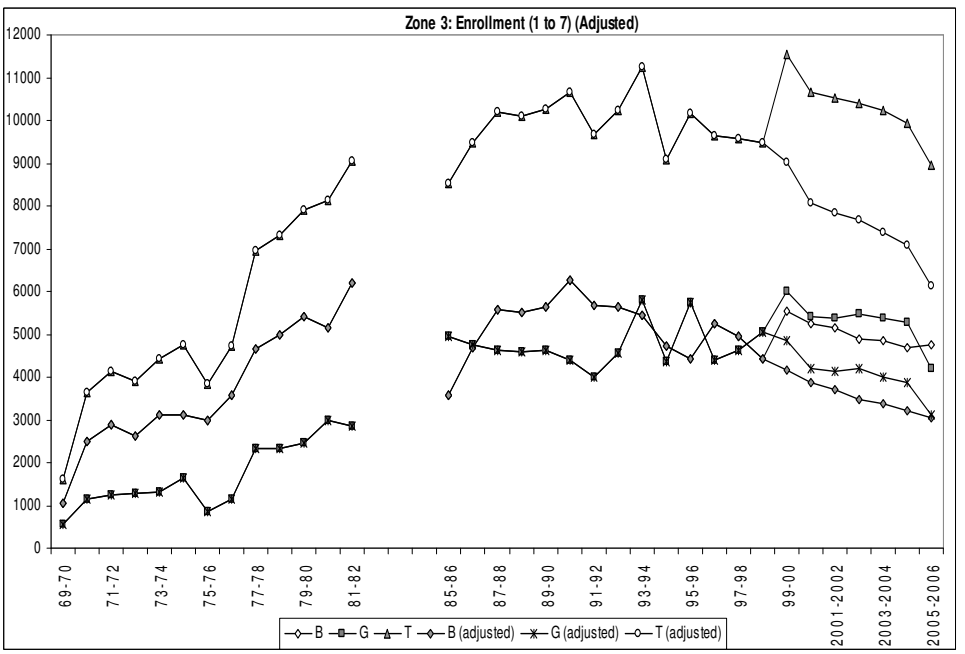
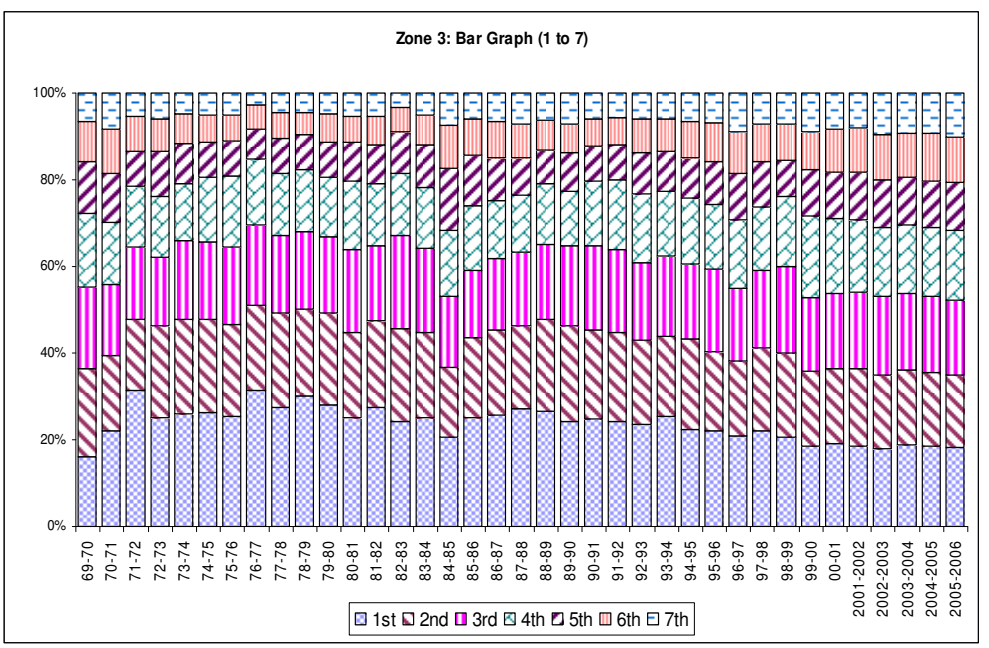
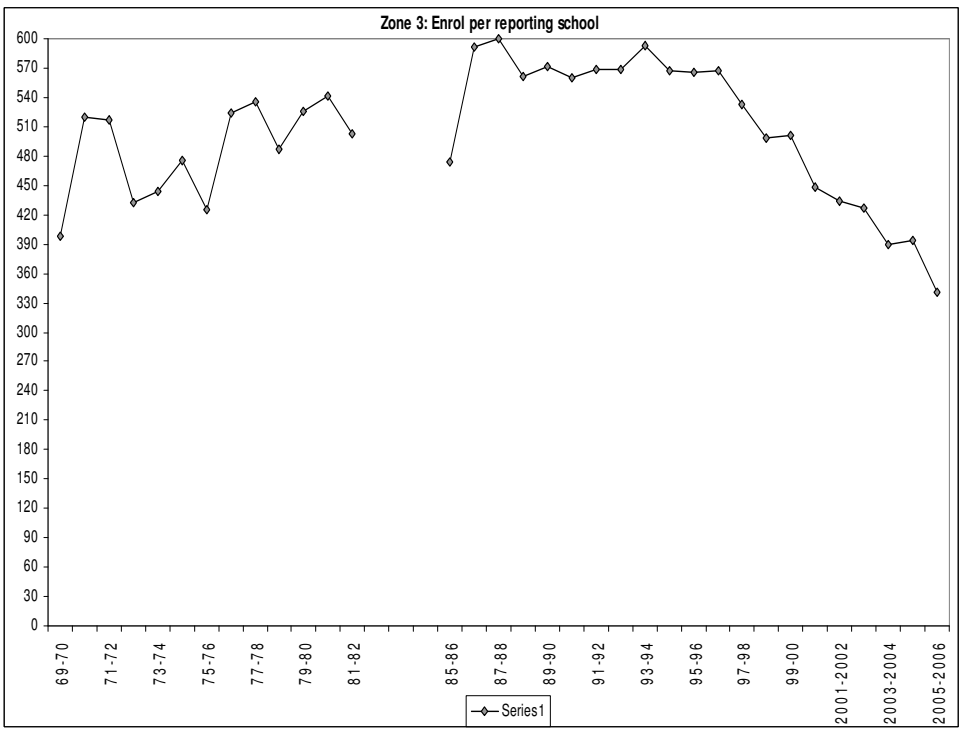
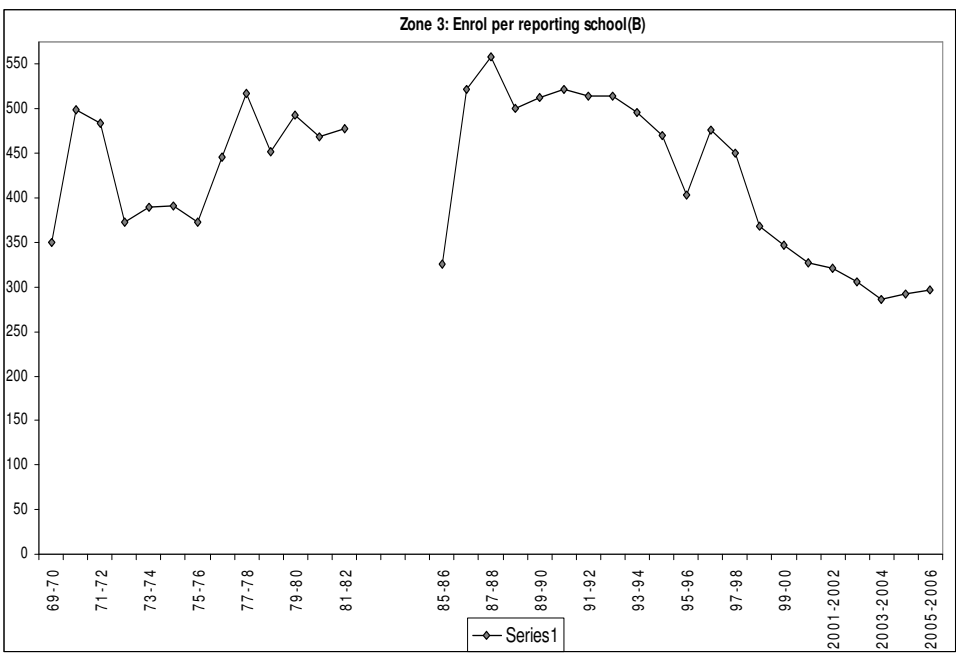


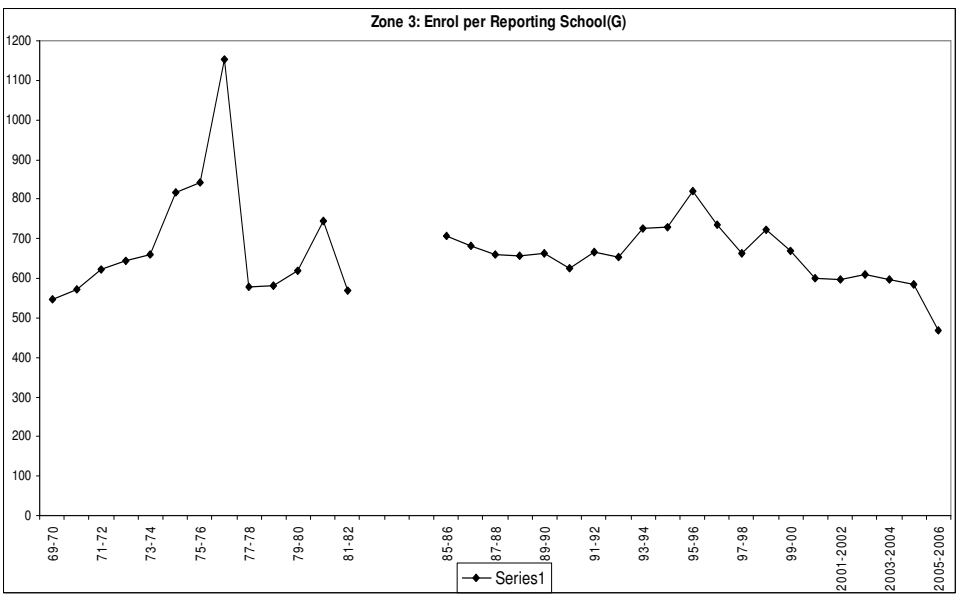
Chart 3D Zone 3--Yerwada : Genderwise Enrolment (1 to 7)
11250
10500
9750
9000
8250
7500
6750
6000
5250
4500
3750
3000
2250
1500
750
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T

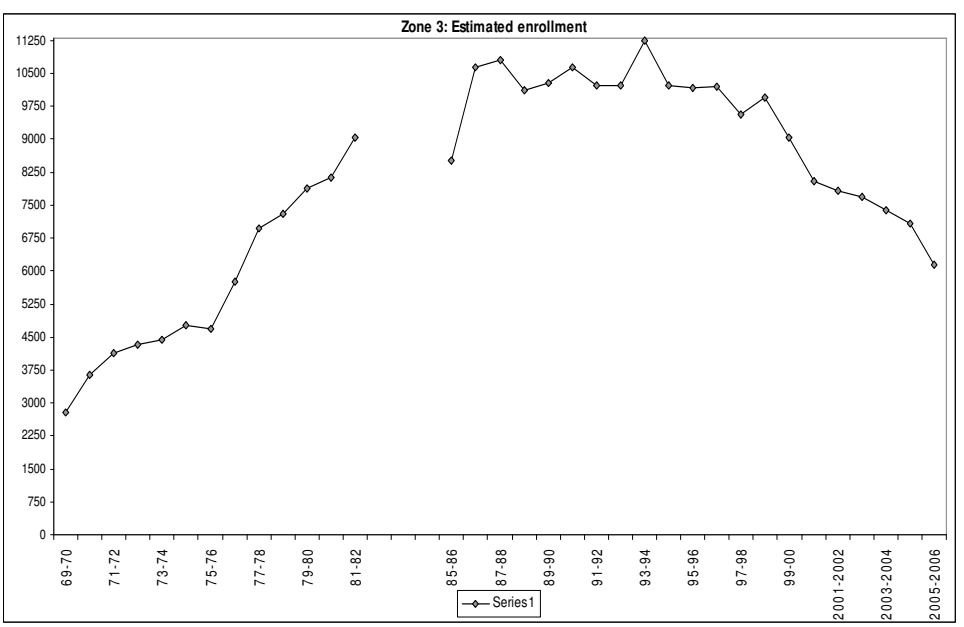

Zone 3: Enrollment (1 to 7) (Adjusted)
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (adjusted)
G (adjusted)
T (adjusted)

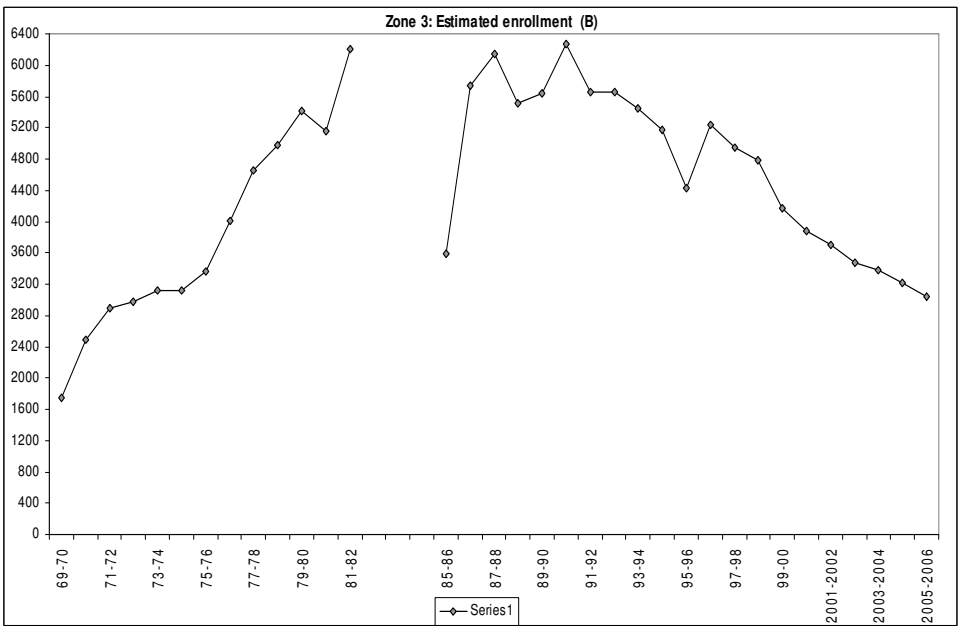

Zone 3: Bar Graph (1 to 7)
100%
80%
60%
40%
20%
0%
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1st
2nd
3rd
4th
5th
6th
7th

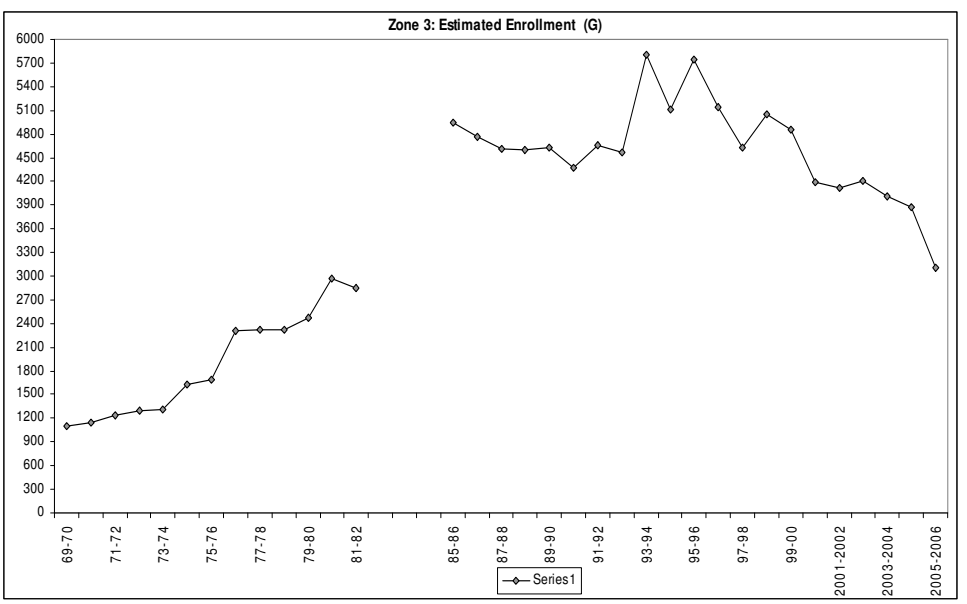

Zone 3: Enrol per reporting school
600
570
540
510
480
450
420
390
360
330
300
270
240
210
180
150
120
90
60
30
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 3: Enrol per reporting school(B)
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

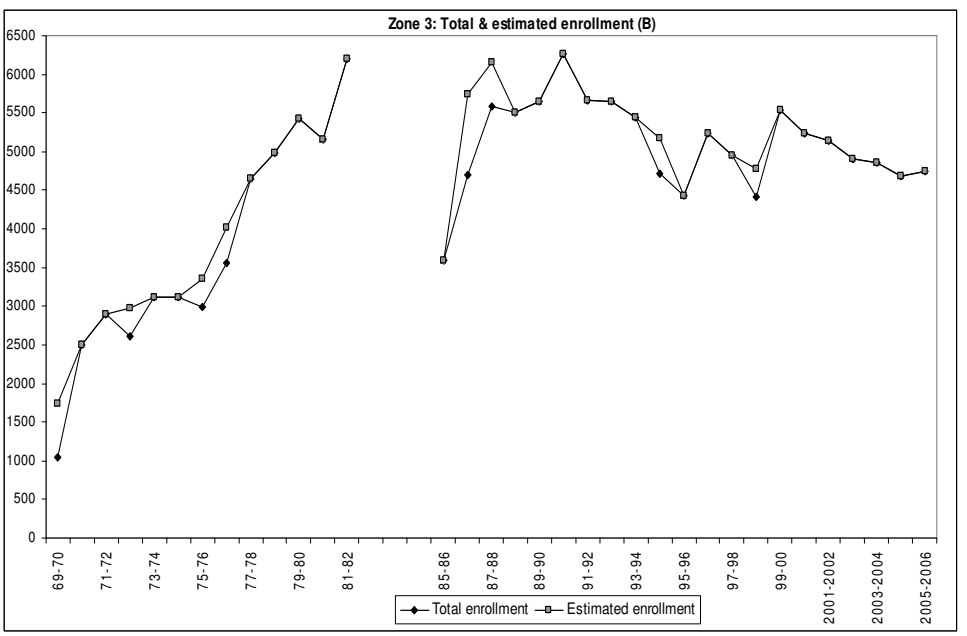

Zone 3: Enrol per Reporting School(G)
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

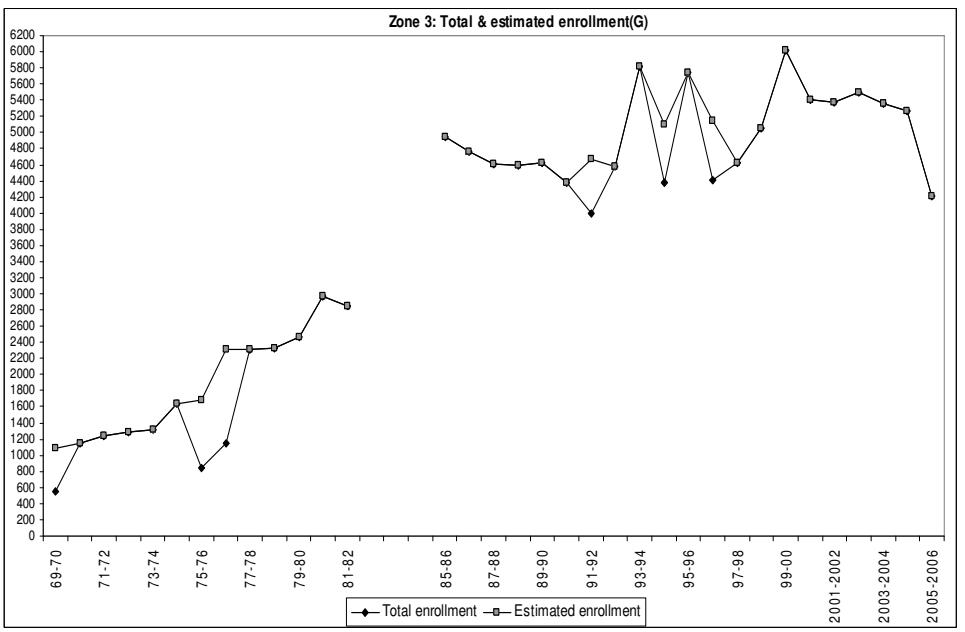

Zone 3: Estimated enrollment
11250
10500
9750
9000
8250
7500
6750
6000
5250
4500
3750
3000
2250
1500
750
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 3: Estimated enrollment (B)
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 3: Estimated Enrollment (G)
6000
5700
5400
5100
4800
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 3: Total & estimated enrollment
11200
10400
9600
8800
8000
7200
6400
5600
4800
4000
3200
2400
1600
800
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 3: Total & estimated enrollment (B)
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 3: Total & estimated enrollment(G)
6200
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment

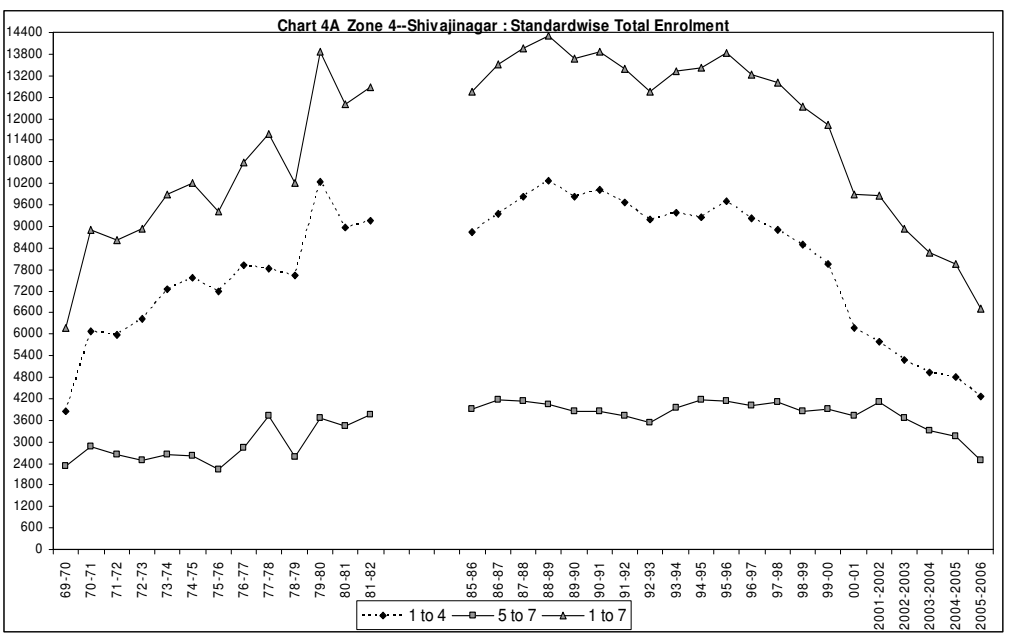
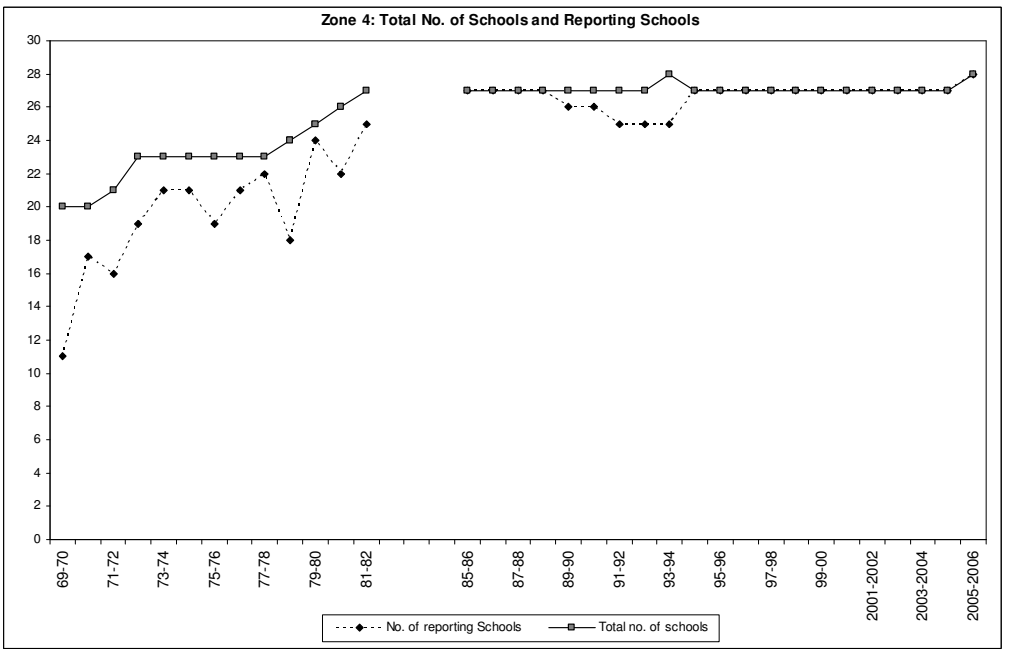


Chart 4A Zone 4--Shivajinagar : Standardwise Total Enrolment
14400
13800
13200
12600
12000
11400
10800
10200
9600
9000
8400
7800
7200
6600
6000
5400
4800
4200
3600
3000
2400
1800
1200
600
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1 to 4
5 to 7
1 to 7


Zone 4: Total No. of Schools and Reporting Schools
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
No. of reporting Schools
Total no. of schools

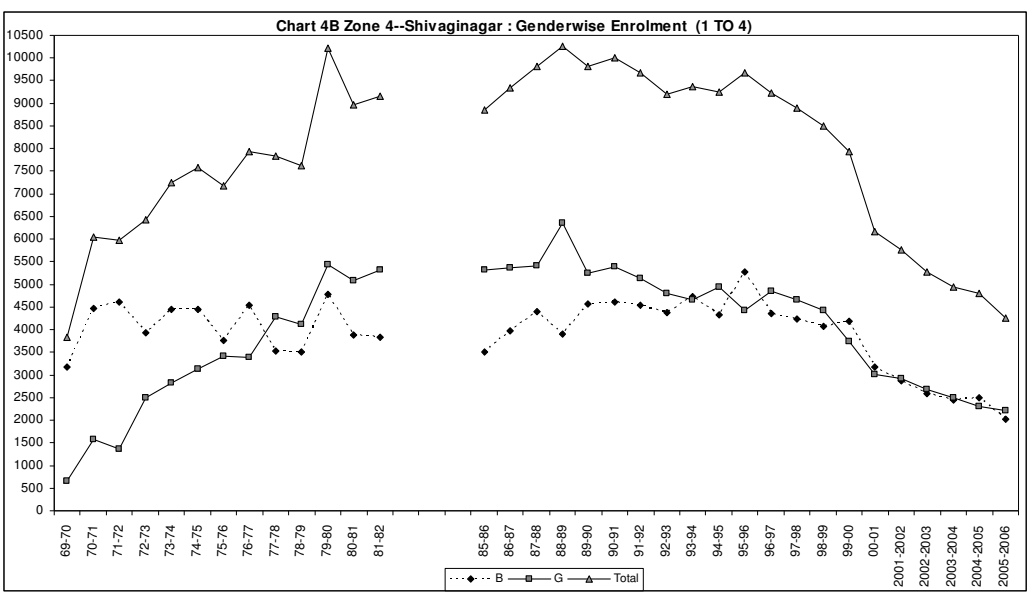


Chart 4B Zone 4--Shivaginagar : Genderwise Enrolment (1 TO 4)
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
Total

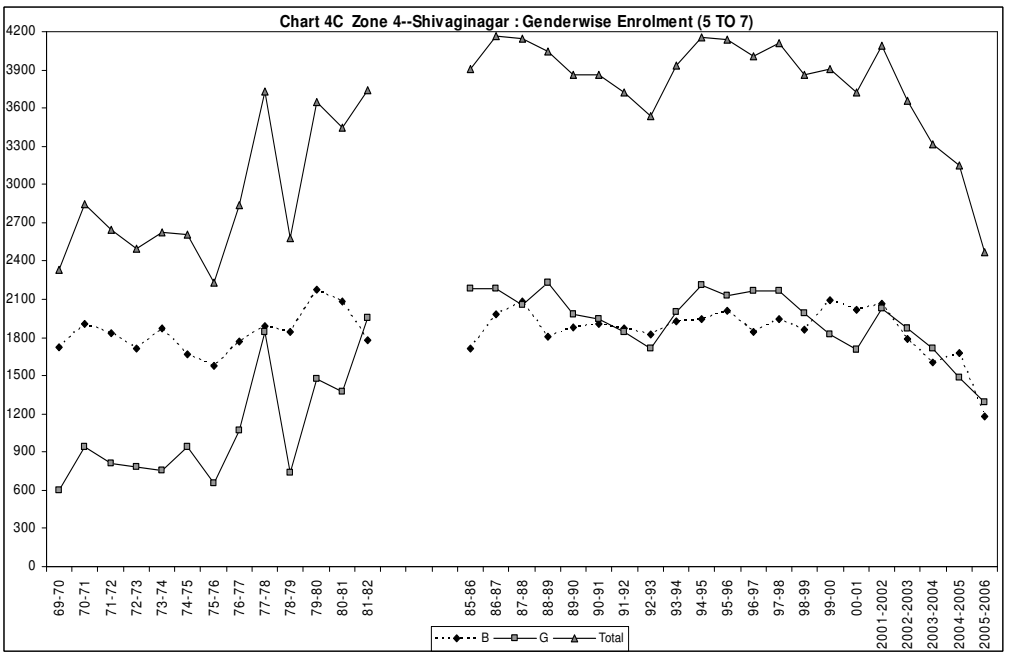


Chart 4C Zone 4--Shivaginagar : Genderwise Enrolment (5 TO 7)
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
Total

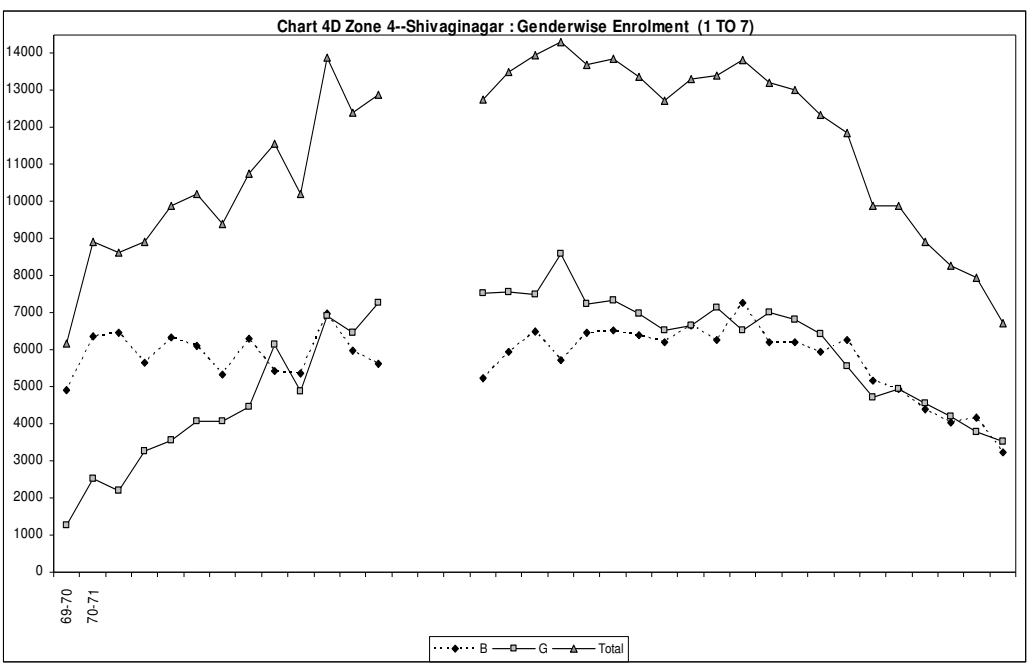
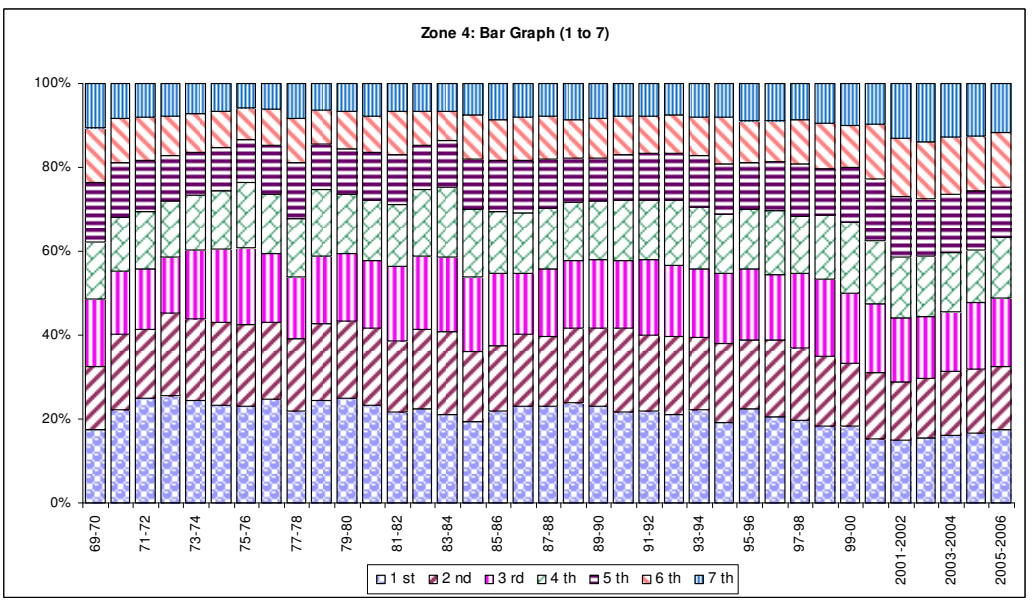
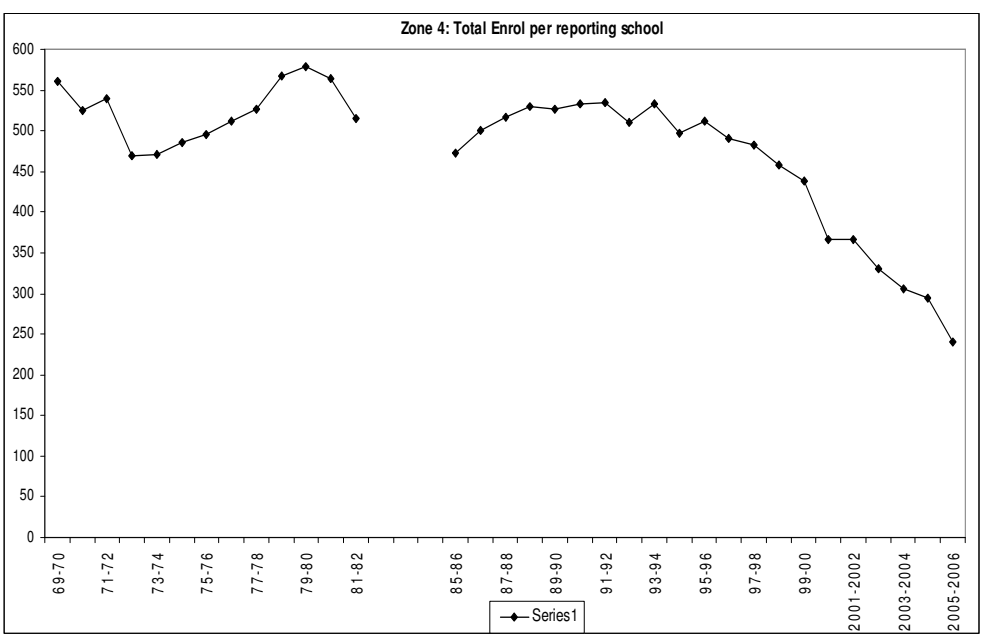
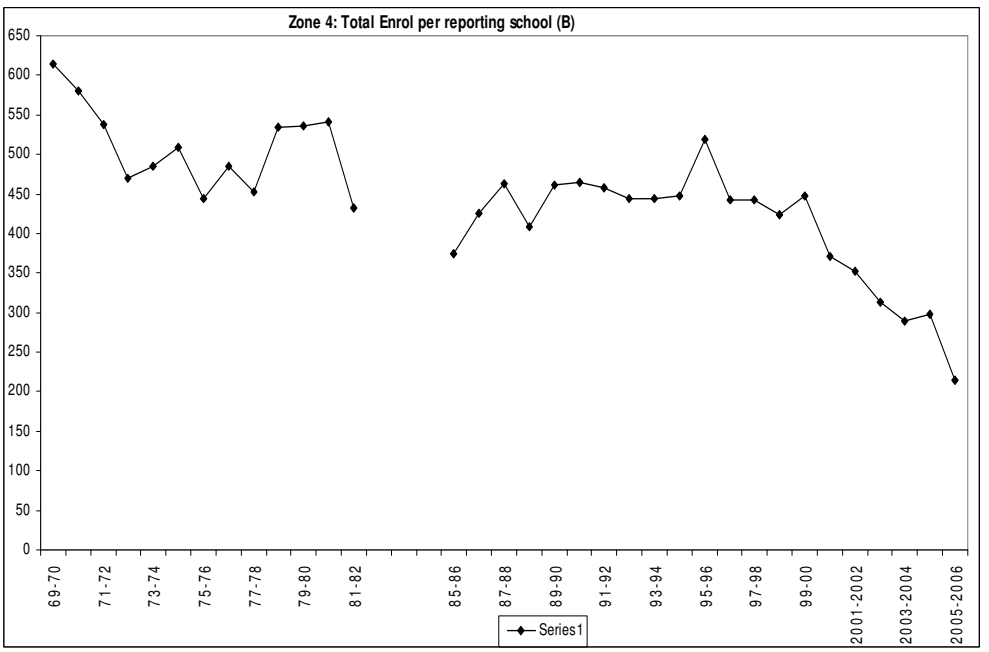
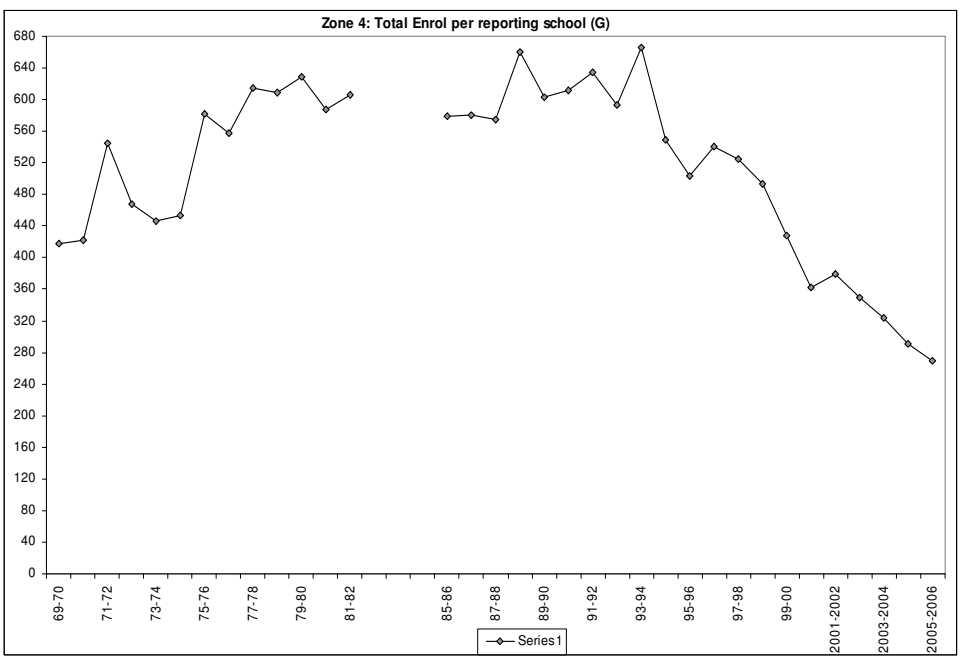


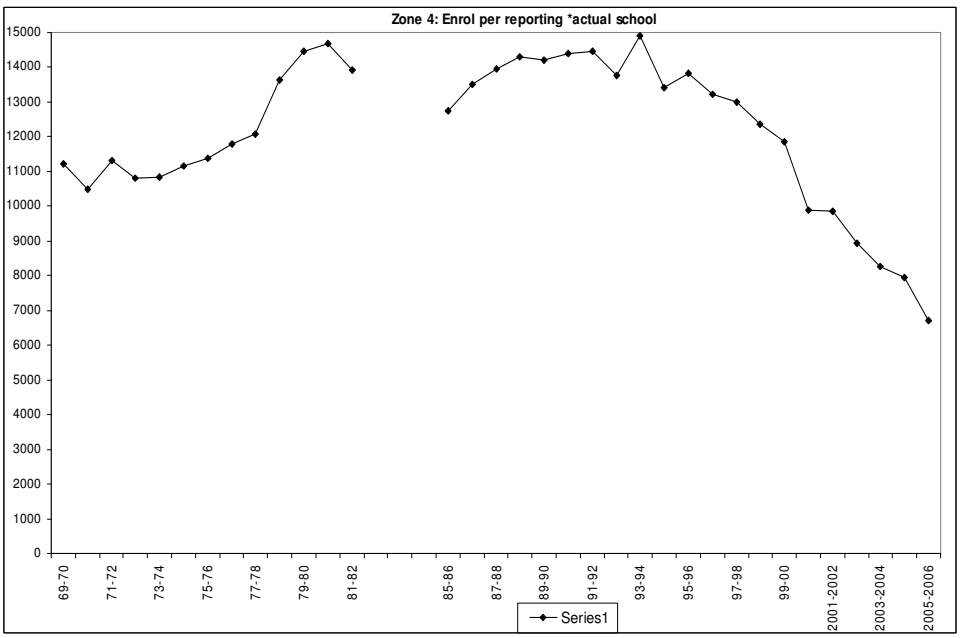
Chart 4D Zone 4--Shivaginagar : Genderwise Enrolment (1 TO 7)
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
69-70
70-71
B
G
Total

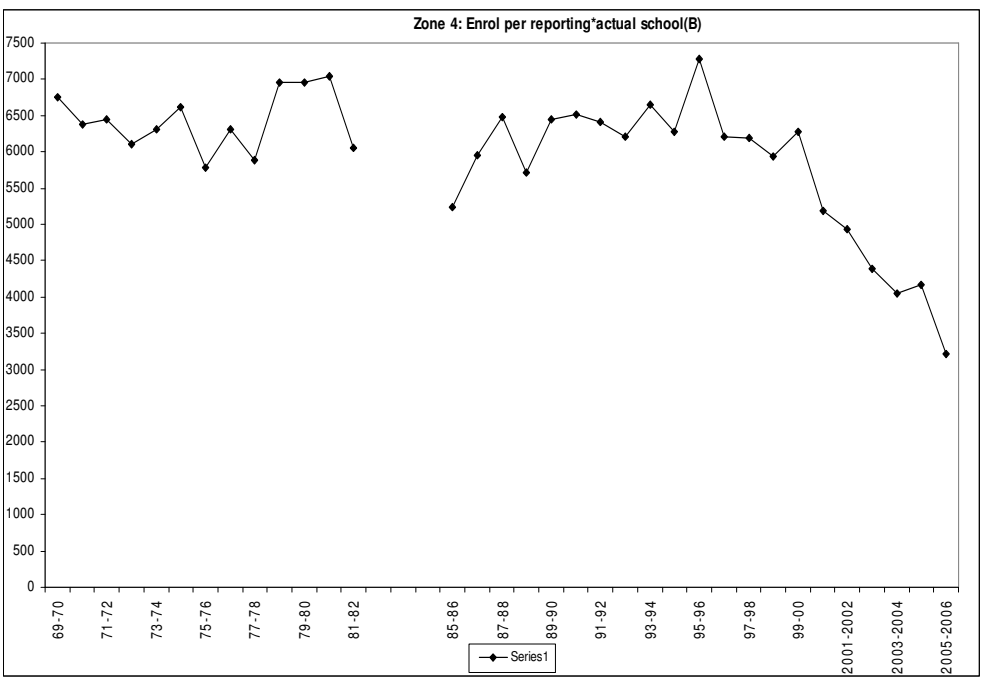

Zone 4: Bar Graph (1 to 7)
100%
80%
60%
40%
20%
0%
69-70
71-72
73-74
75-76
77-78
79-80
81-82
83-84
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 st
2 nd
3 rd
4 th
5 th
6 th
7 th

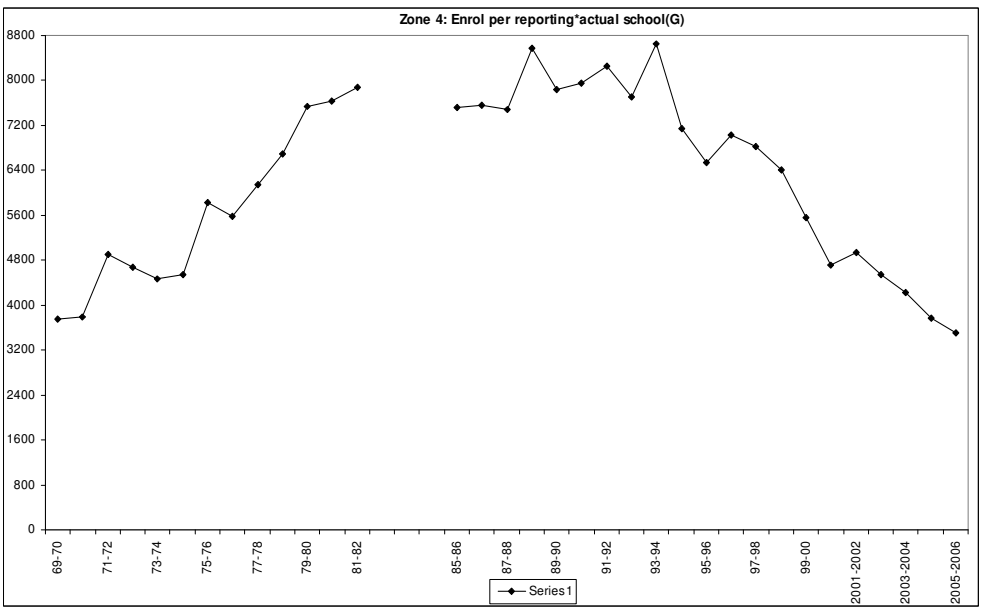

Zone 4: Total Enrol per reporting school
600
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

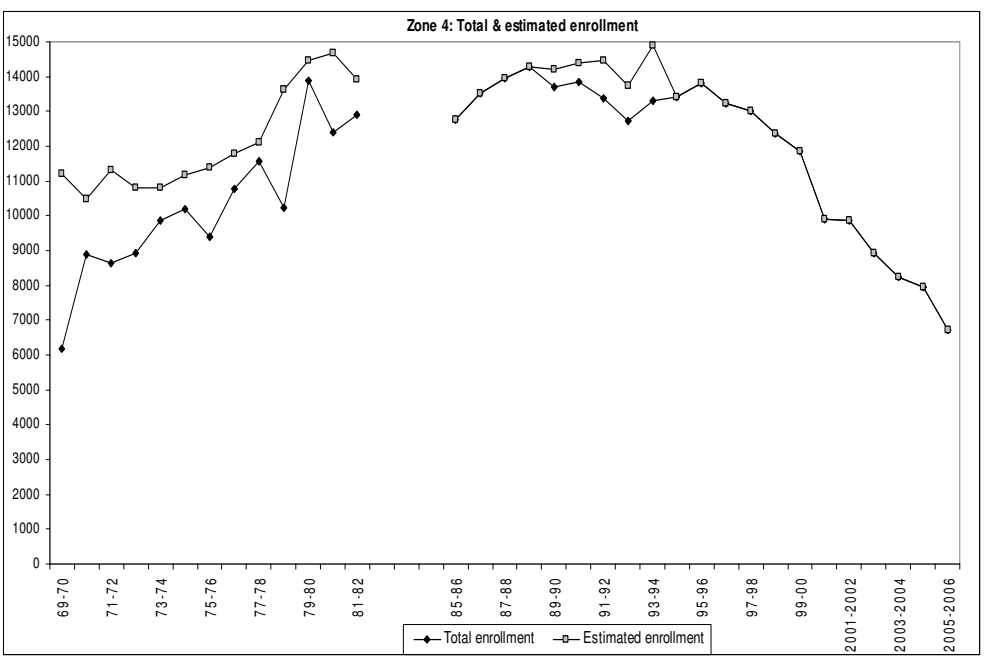

Zone 4: Total Enrol per reporting school (B)
650
600
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

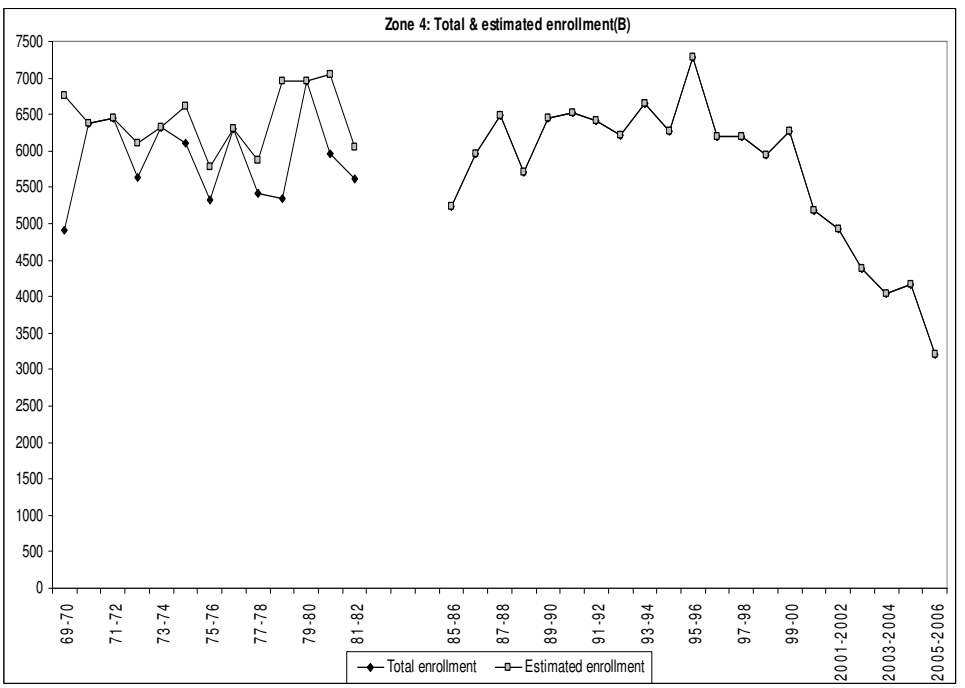

Zone 4: Total Enrol per reporting school (G)
680
640
600
560
520
480
440
400
360
320
280
240
200
160
120
80
40
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

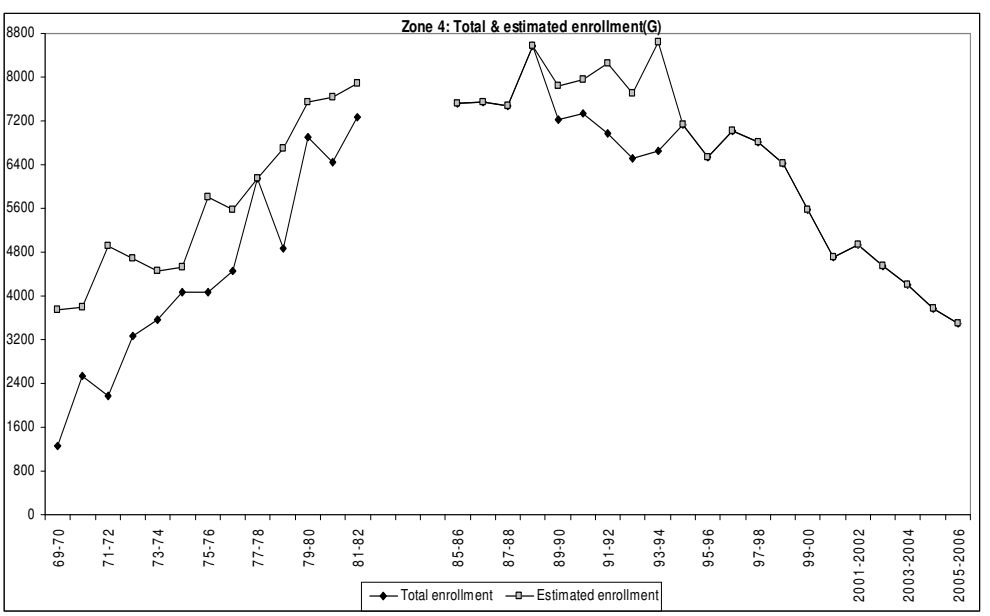

Zone 4: Enrol per reporting *actual school
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 4: Enrol per reporting*actual school(B)
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 4: Enrol per reporting*actual school(G)
8800
8000
7200
6400
5600
4800
4000
3200
2400
1600
800
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 4: Total & estimated enrollment
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 4: Total & estimated enrollment(B)
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 4: Total & estimated enrollment(G)
8800
8000
7200
6400
5600
4800
4000
3200
2400
1600
800
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment

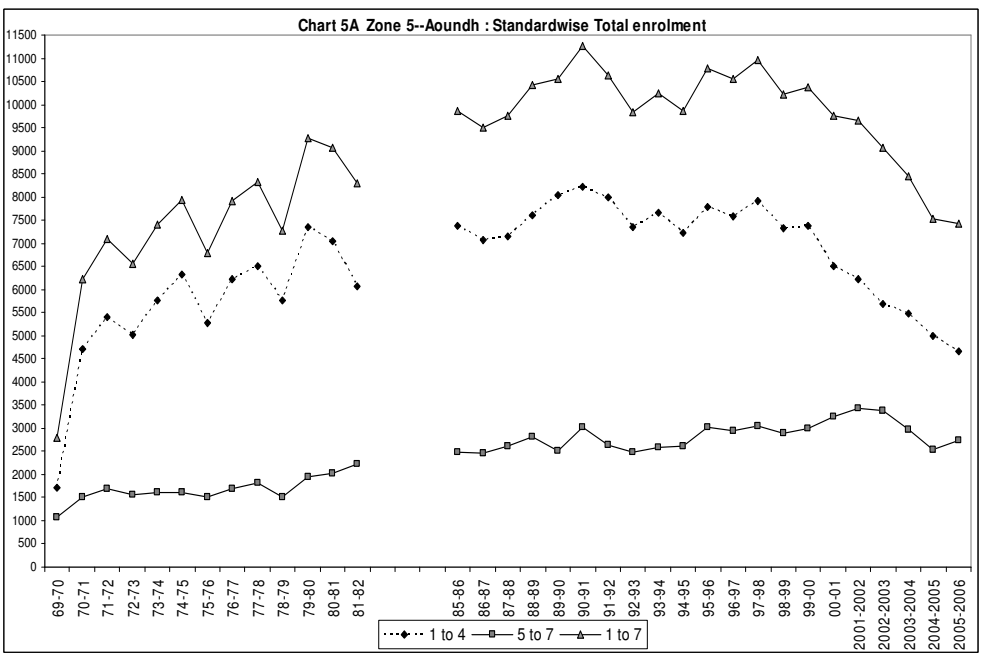
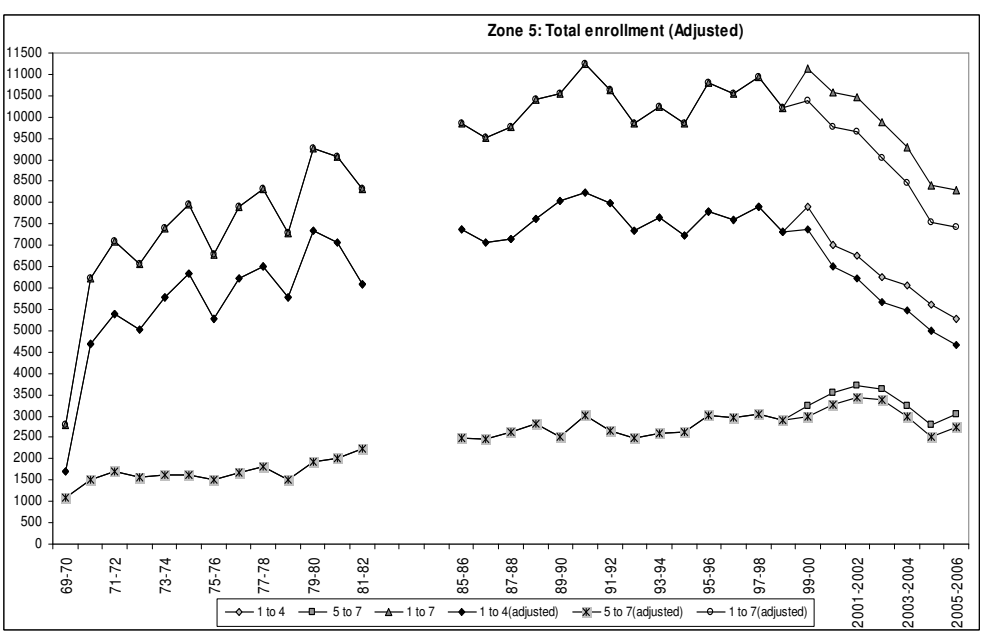
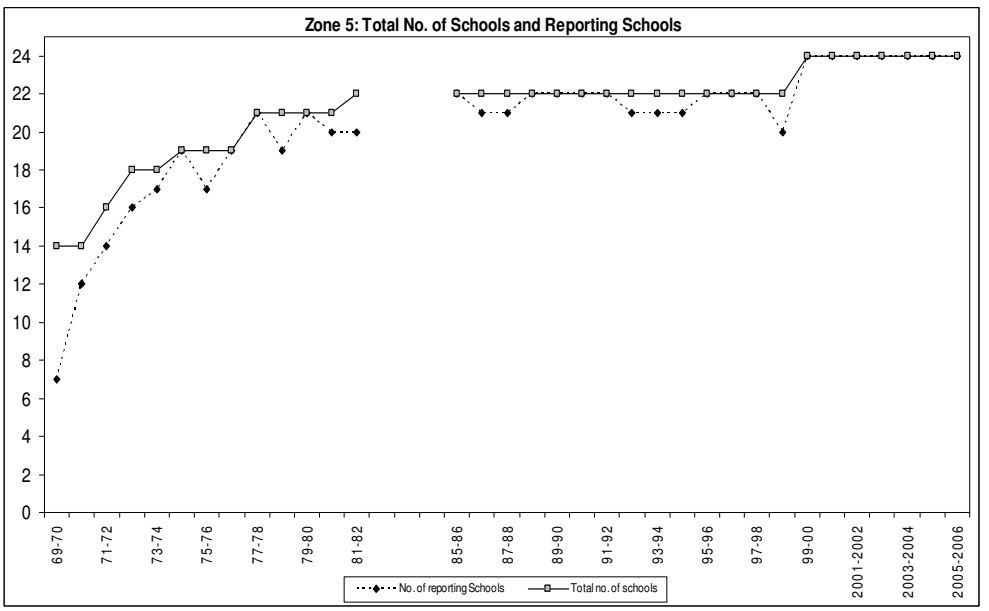
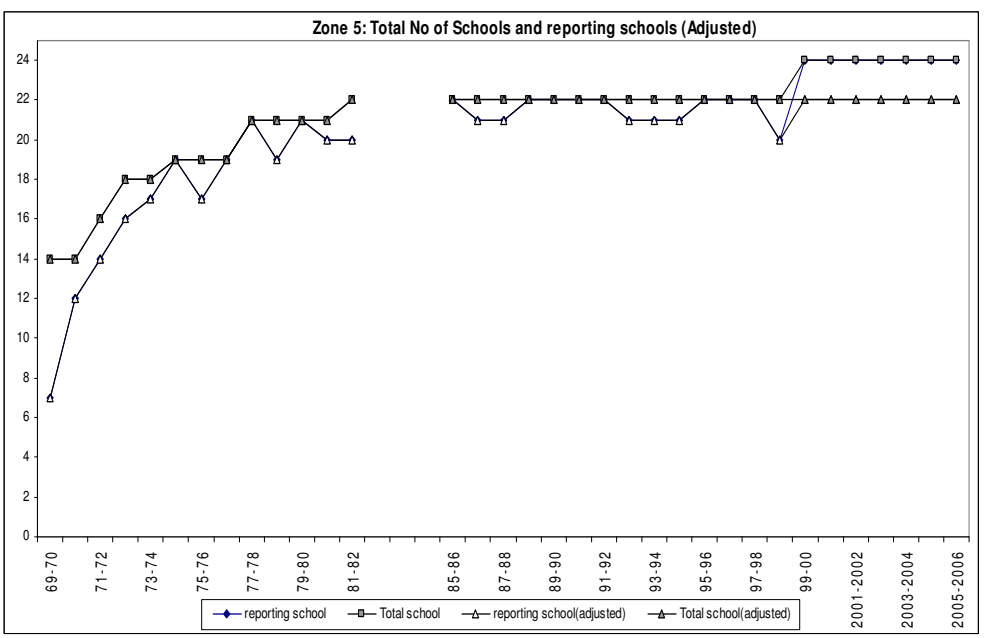


Chart 5A Zone 5--Aoundh : Standardwise Total enrolment
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1 to 4
5 to 7
1 to 7


Zone 5: Total enrollment (Adjusted)
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 to 4
5 to 7
1 to 7
1 to 4(adjusted)
5 to 7(adjusted)
1 to 7(adjusted)


Zone 5: Total No. of Schools and Reporting Schools
24
22
20
18
16
14
12
10
8
6
4
2
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
No. of reporting Schools
Total no. of schools


Zone 5: Total No of Schools and reporting schools (Adjusted)
24
22
20
18
16
14
12
10
8
6
4
2
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
reporting school
Total school
reporting school(adjusted)
Total school(adjusted)

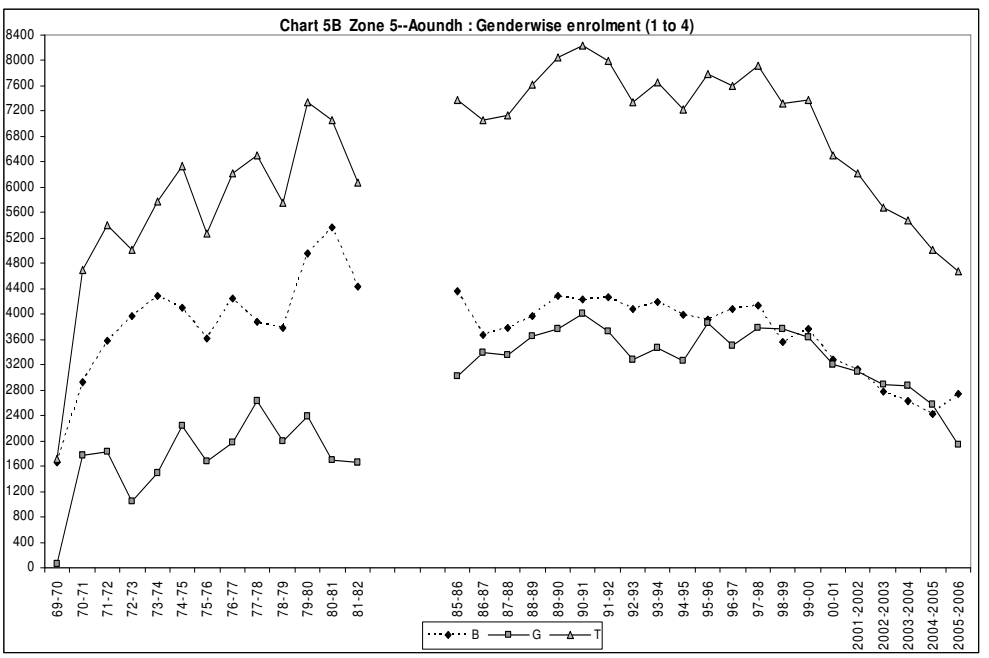
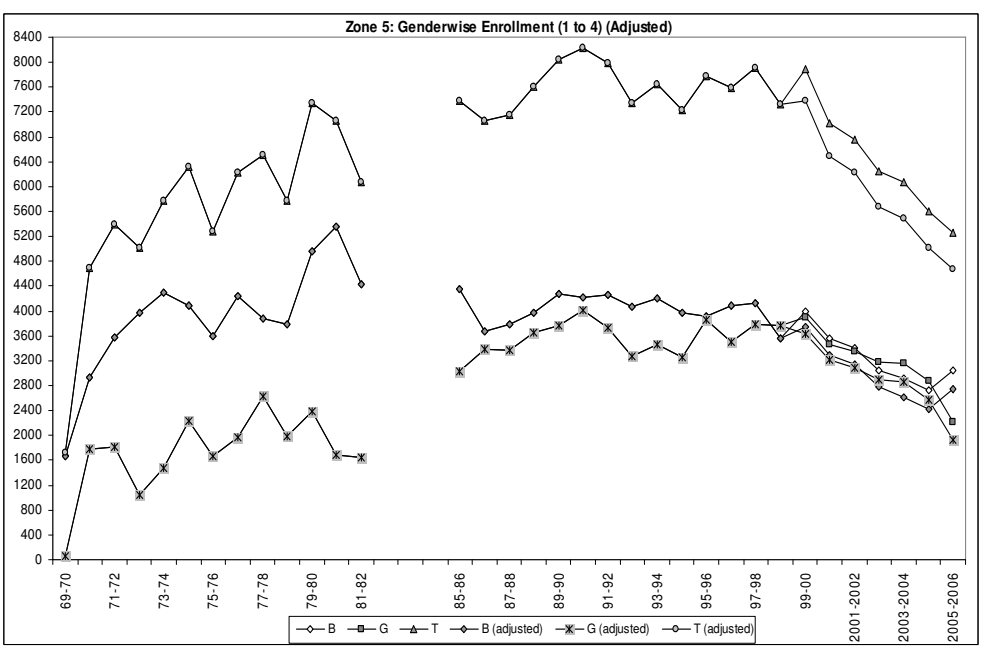


Chart 5B Zone 5--Aoundh : Genderwise enrolment (1 to 4)
8400
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T


Zone 5: Genderwise Enrollment (1 to 4) (Adjusted)
8400
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (adjusted)
G (adjusted)
T (adjusted)

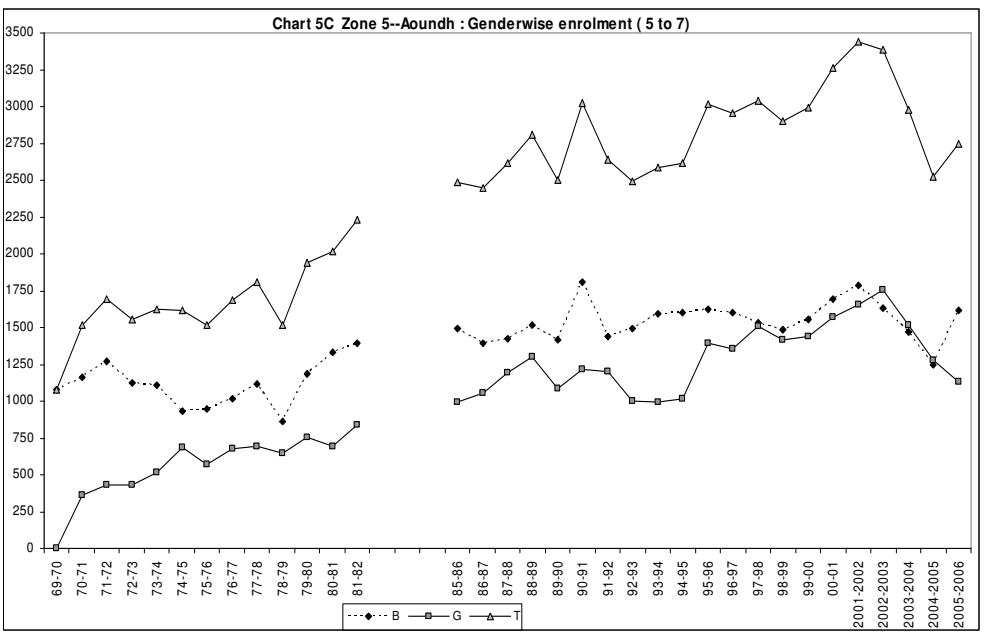
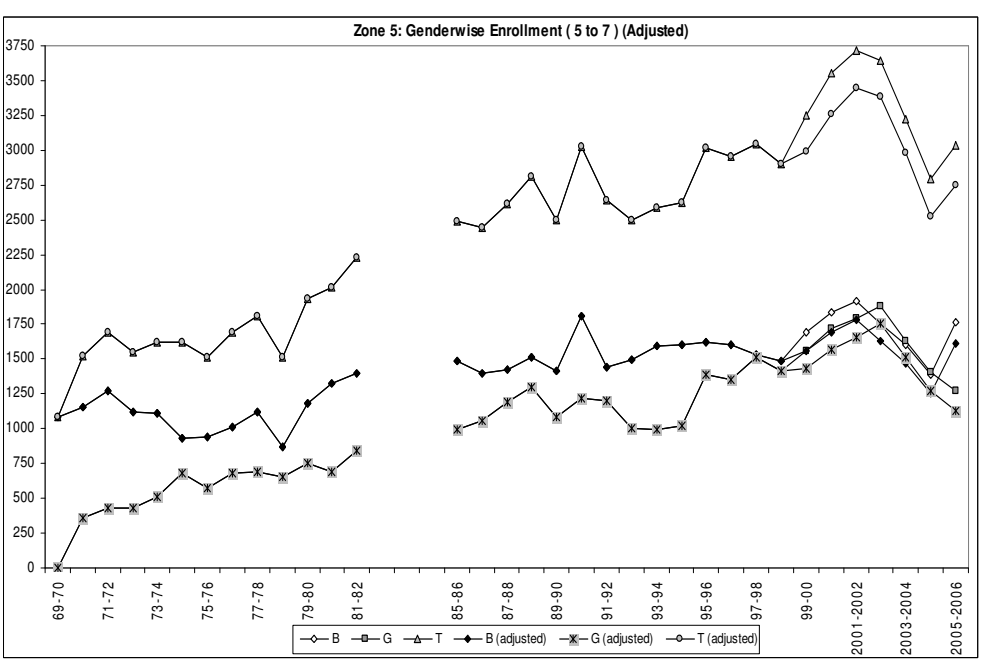


Chart 5C Zone 5--Aoundh : Genderwise enrolment (5 to 7)
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T


Zone 5: Genderwise Enrollment (5 to 7) (Adjusted)
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (adjusted)
G (adjusted)
T (adjusted)

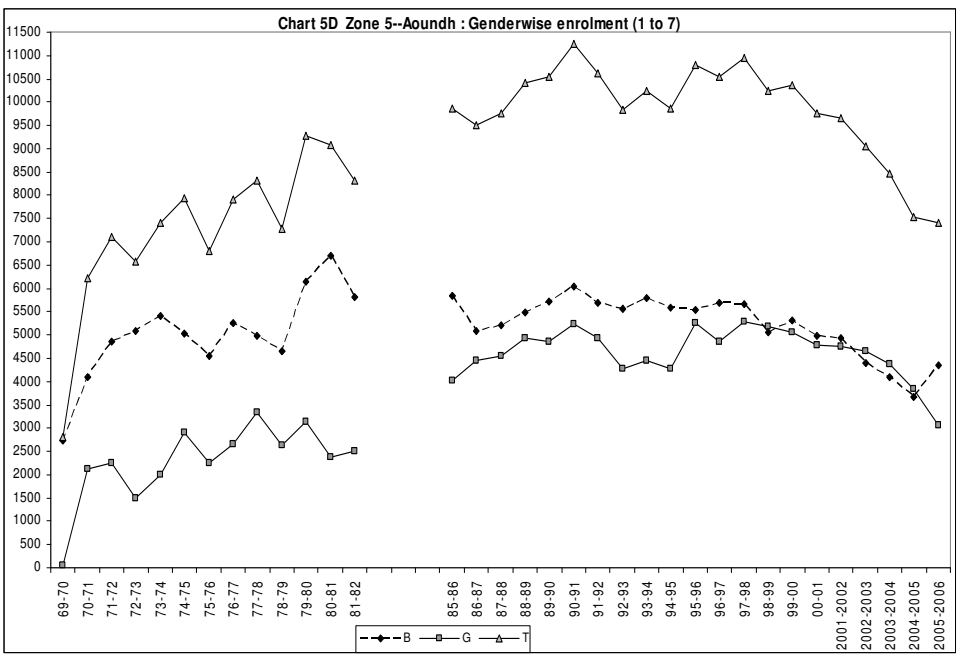
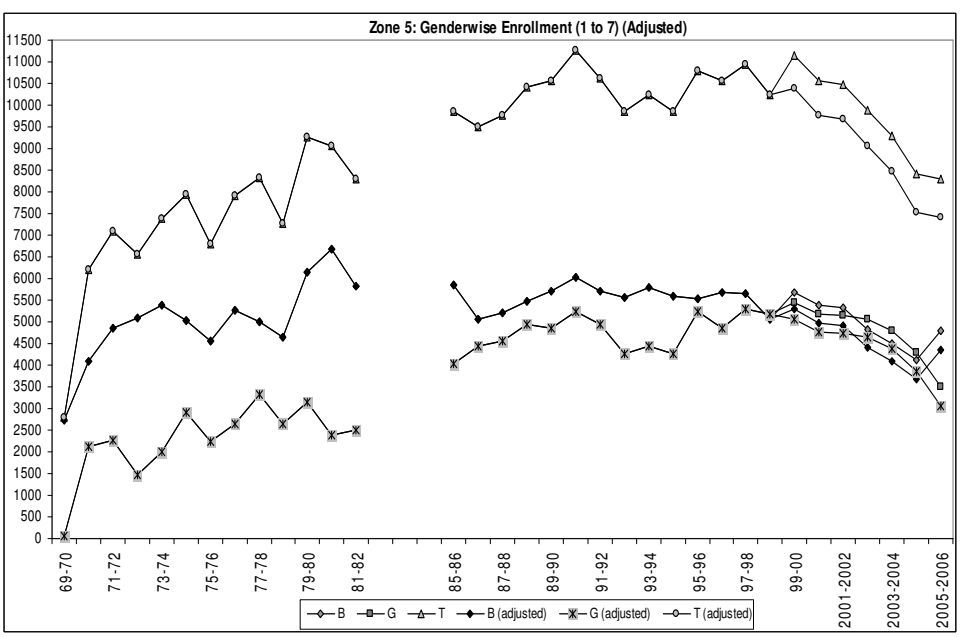
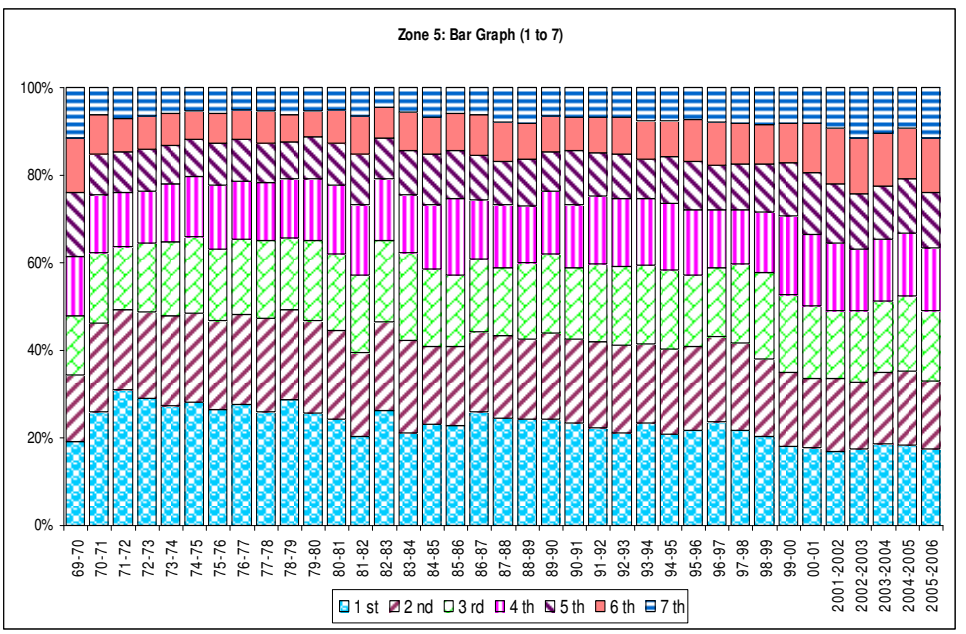
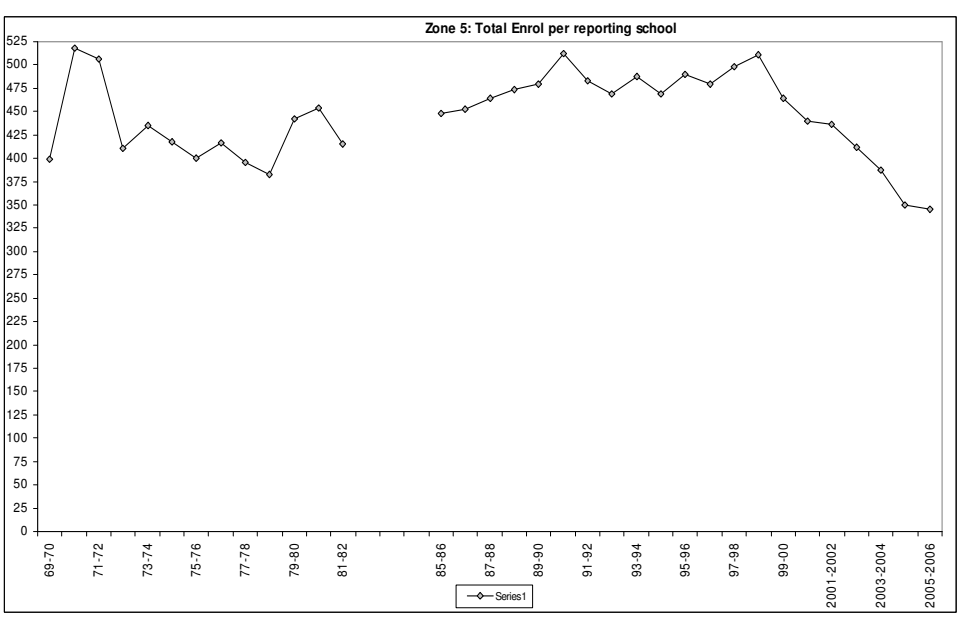
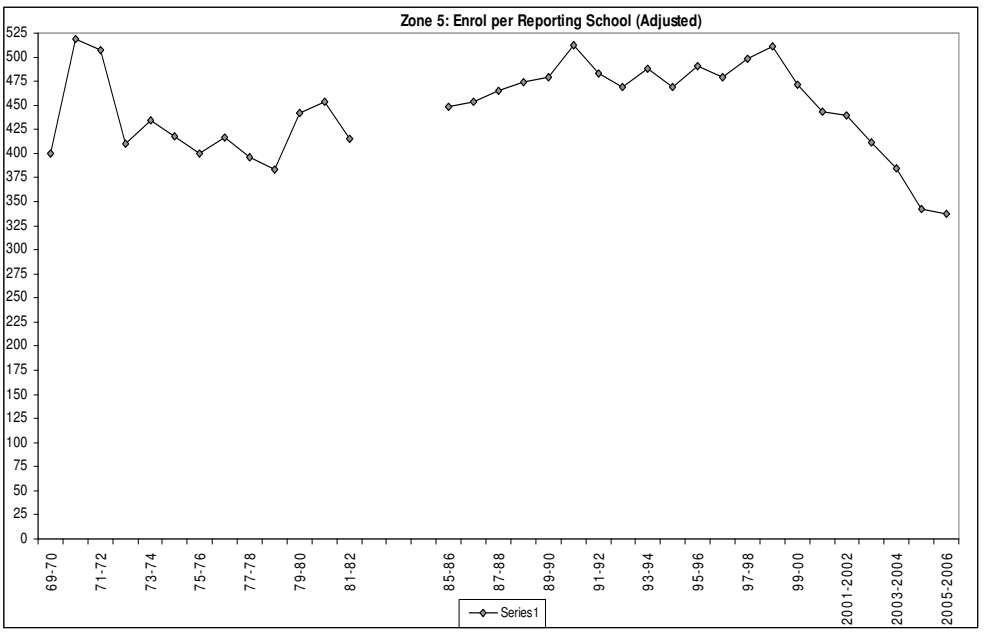


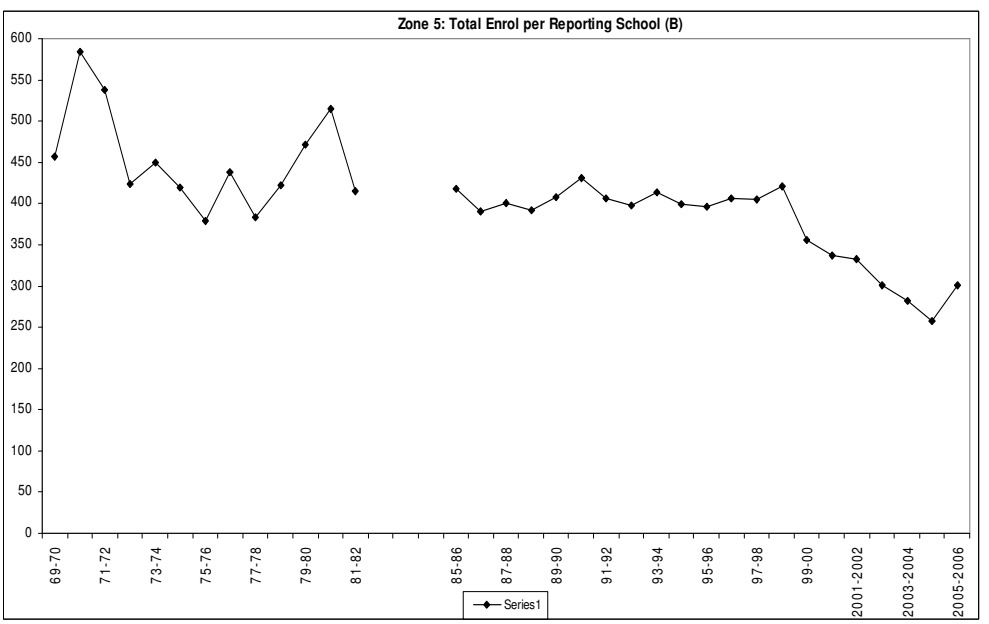
Chart 5D Zone 5--Aoundh : Genderwise enrolment (1 to 7)
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T

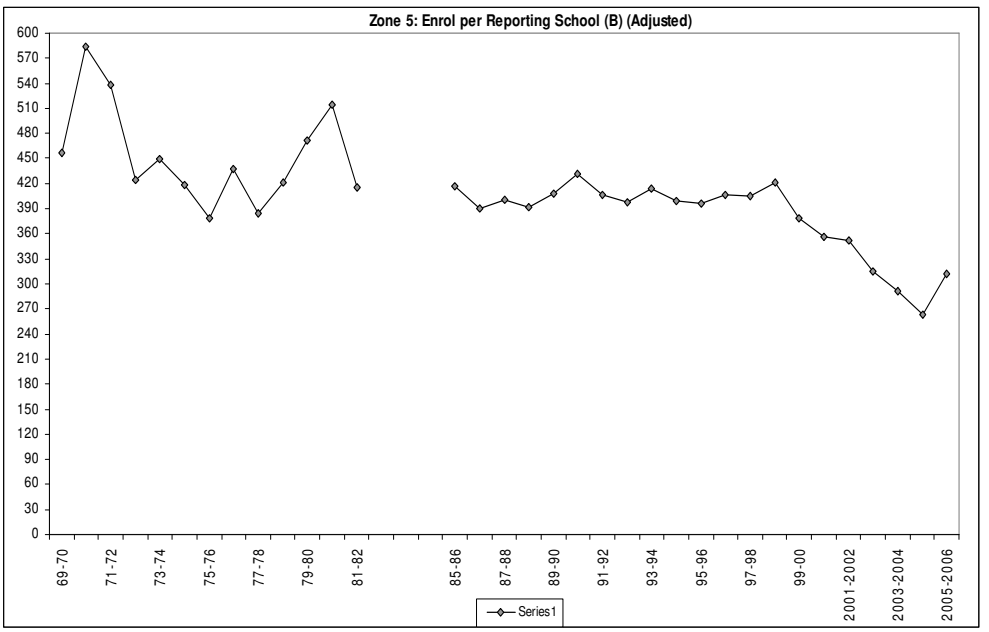

Zone 5: Genderwise Enrollment (1 to 7) (Adjusted)
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (adjusted)
G (adjusted)
T (adjusted)

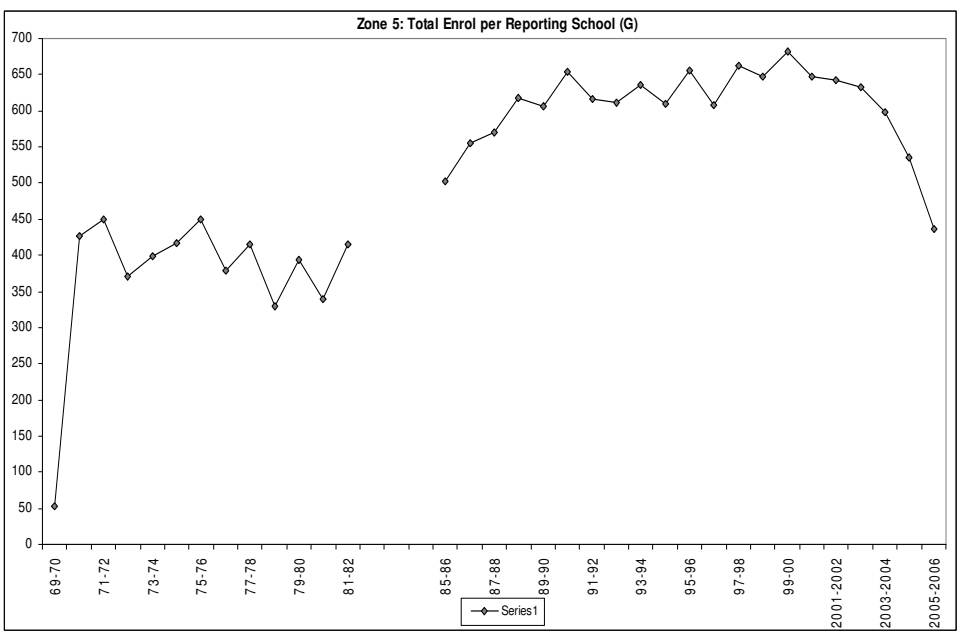

Zone 5: Bar Graph (1 to 7)
100%
80%
60%
40%
20%
0%
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1 st
2 nd
3 rd
4 th
5 th
6 th
7 th

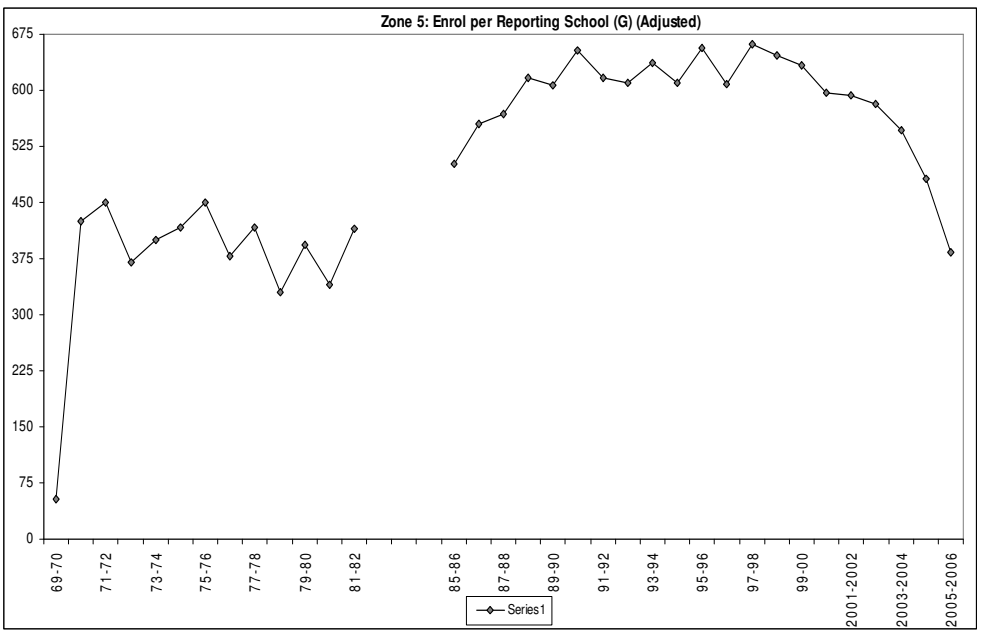

Zone 5: Total Enrol per reporting school
525
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

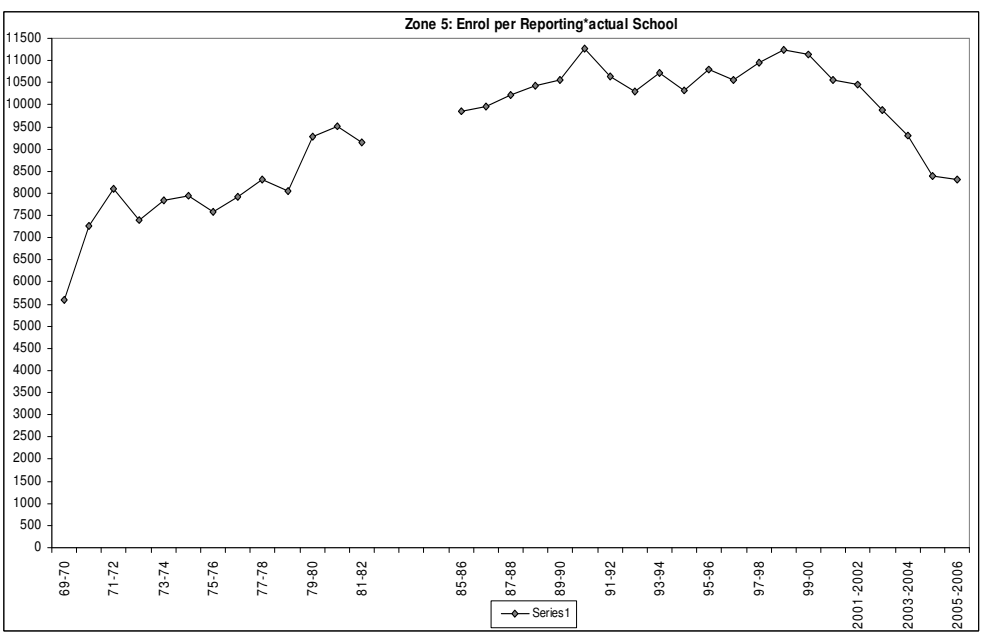

Zone 5: Enrol per Reporting School (Adjusted)
525
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

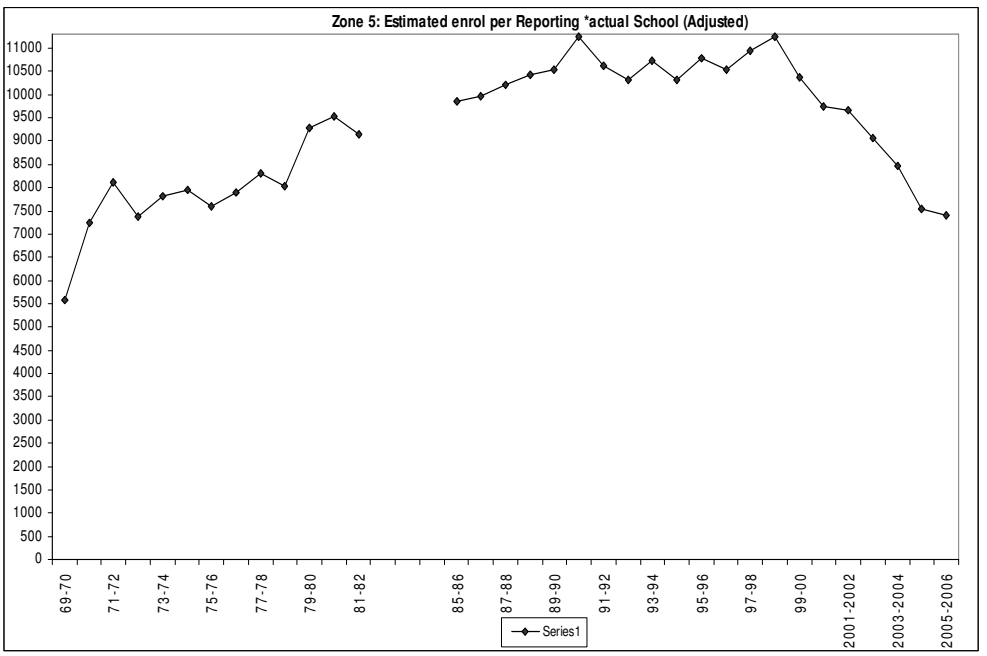

Zone 5: Total Enrol per Reporting School (B)
600
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

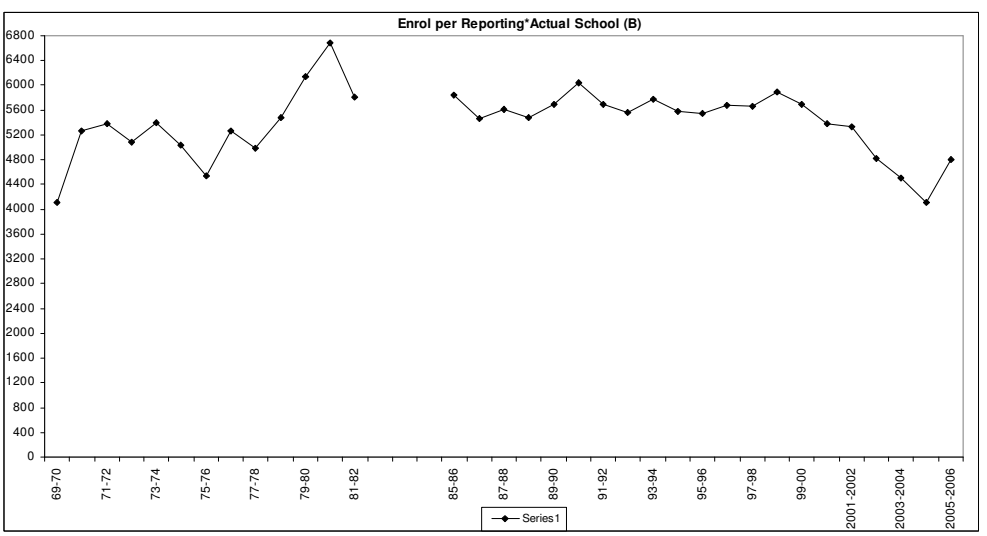

Zone 5: Enrol per Reporting School (B) (Adjusted)
600
570
540
510
480
450
420
390
360
330
300
270
240
210
180
150
120
90
60
30
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

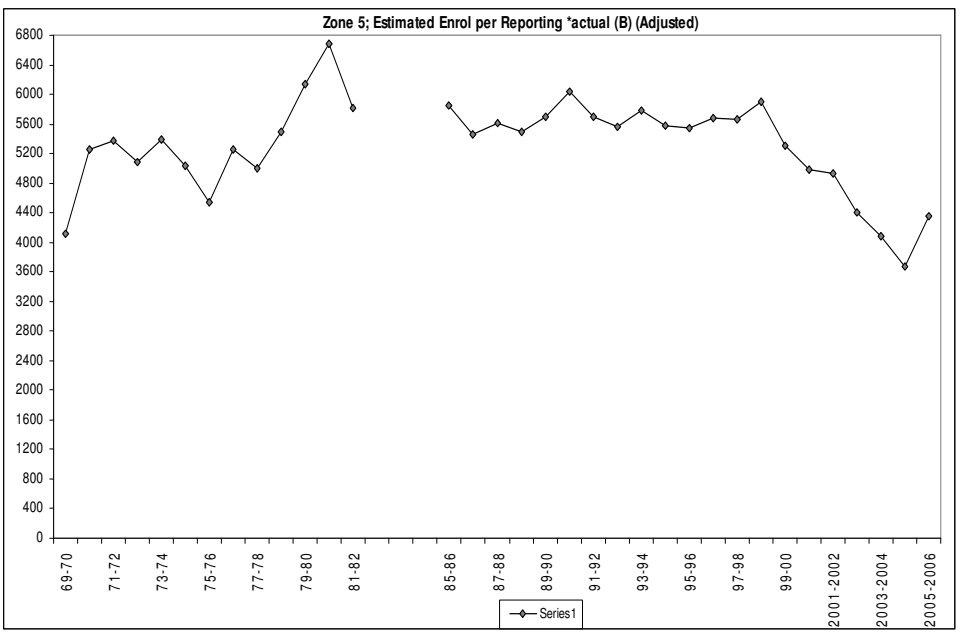

Zone 5: Total Enrol per Reporting School (G)
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

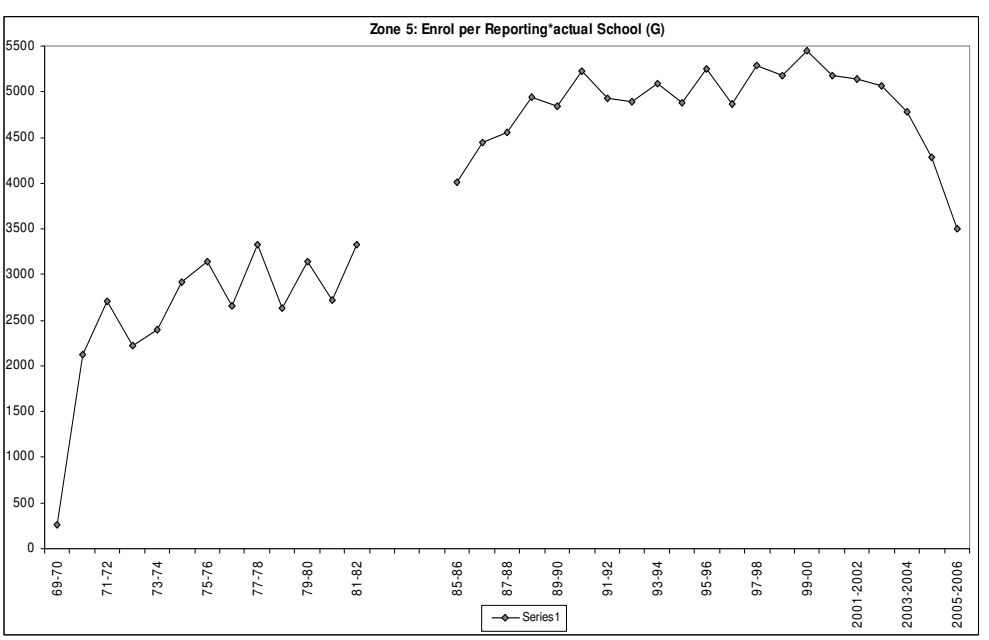

Zone 5: Enrol per Reporting School (G) (Adjusted)
675
600
525
450
375
300
225
150
75
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

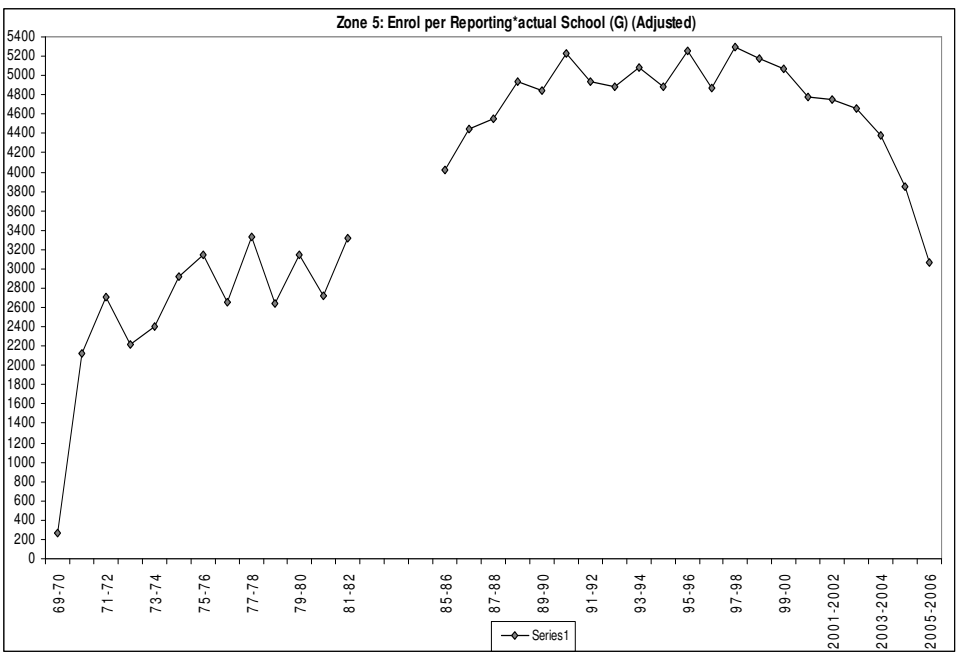

Zone 5: Enrol per Reporting*actual School
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

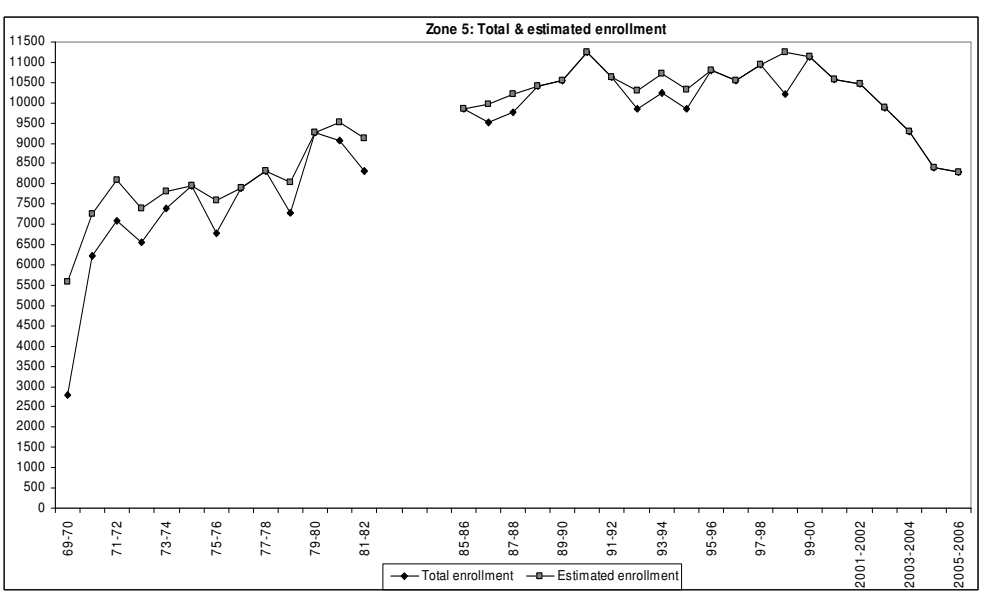

Zone 5: Estimated enrol per Reporting *actual School (Adjusted)
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

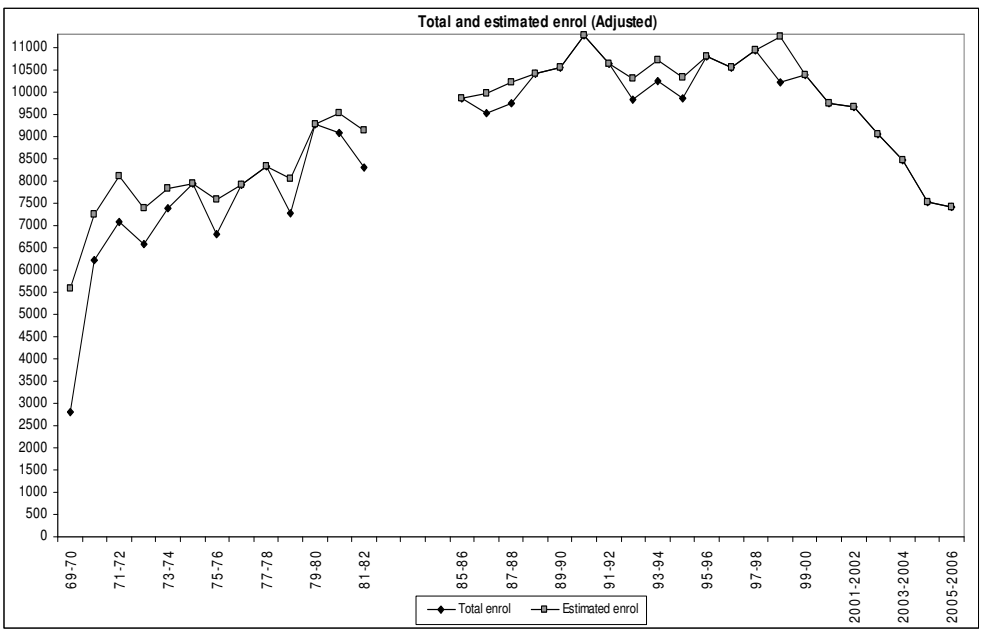

Enrol per Reporting*Actual School (B)
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

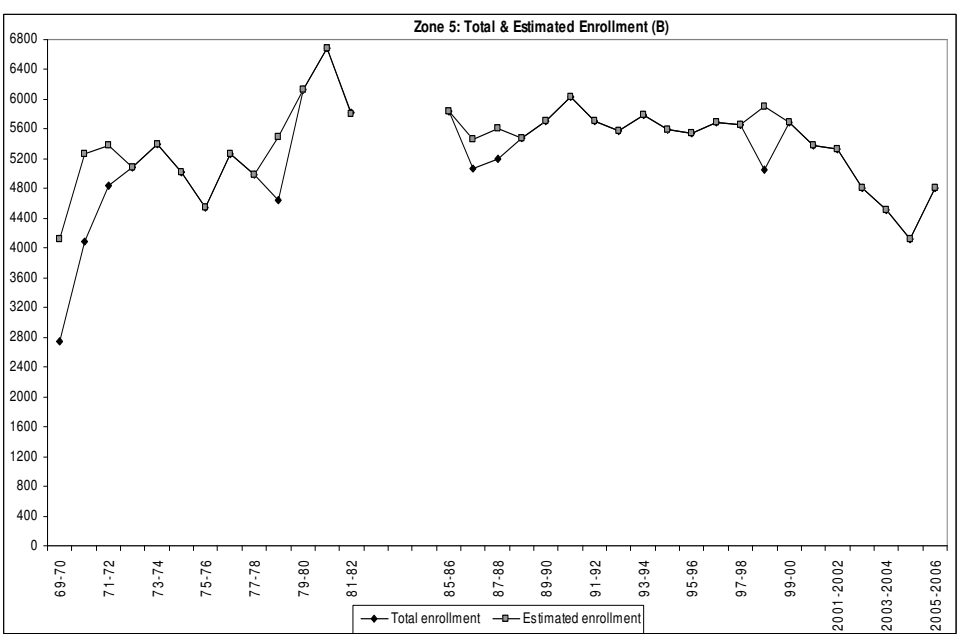

Zone 5; Estimated Enrol per Reporting *actual (B) (Adjusted)
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

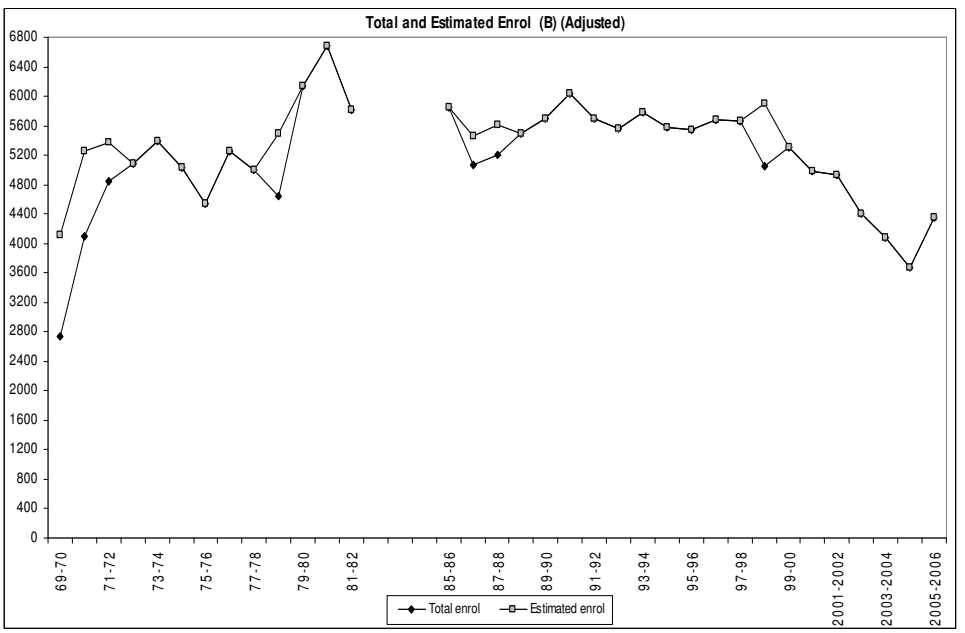

Zone 5: Enrol per Reporting*actual School (G)
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

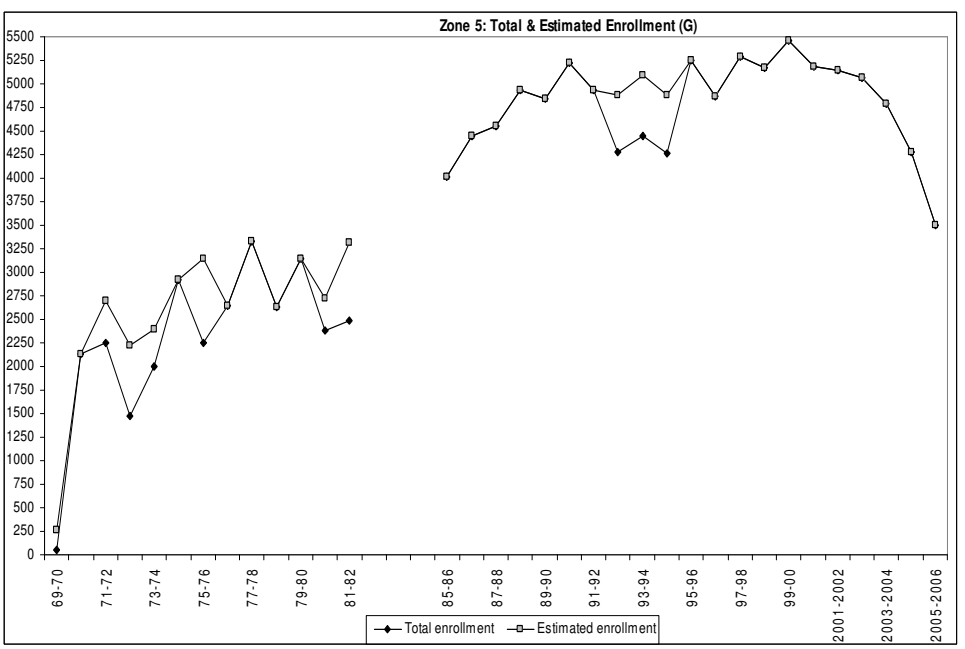

Zone 5: Enrol per Reporting*actual School (G) (Adjusted)
5400
5200
5000
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

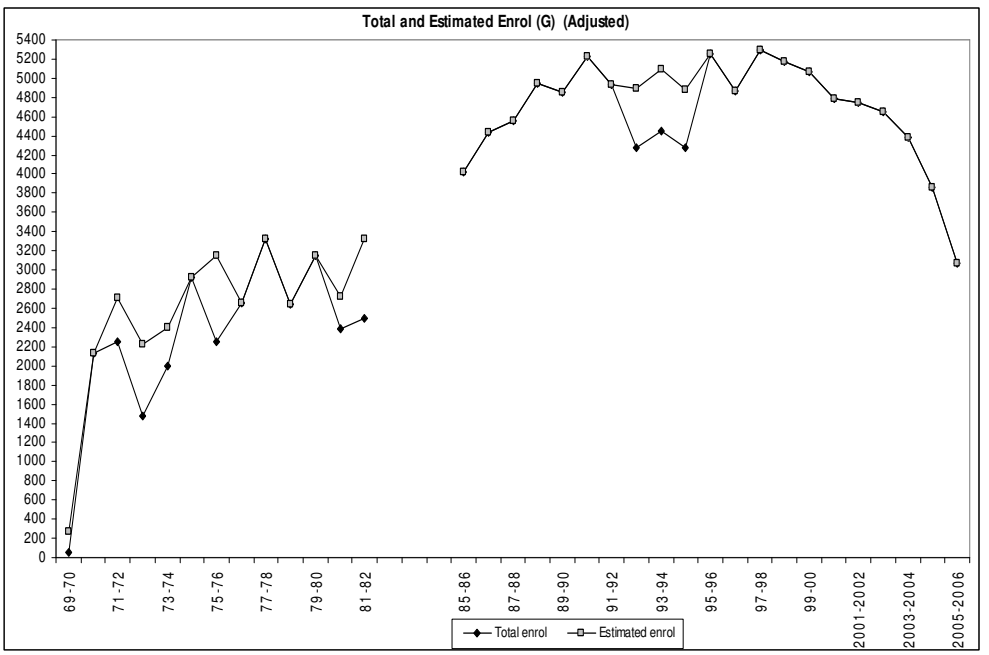

Zone 5: Total & estimated enrollment
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Total and estimated enrol (Adjusted)
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrol
Estimated enrol


Zone 5: Total & Estimated Enrollment (B)
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Total and Estimated Enrol (B) (Adjusted)
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrol
Estimated enrol


Zone 5: Total & Estimated Enrollment (G)
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Total and Estimated Enrol (G) (Adjusted)
5400
5200
5000
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrol
Estimated enrol

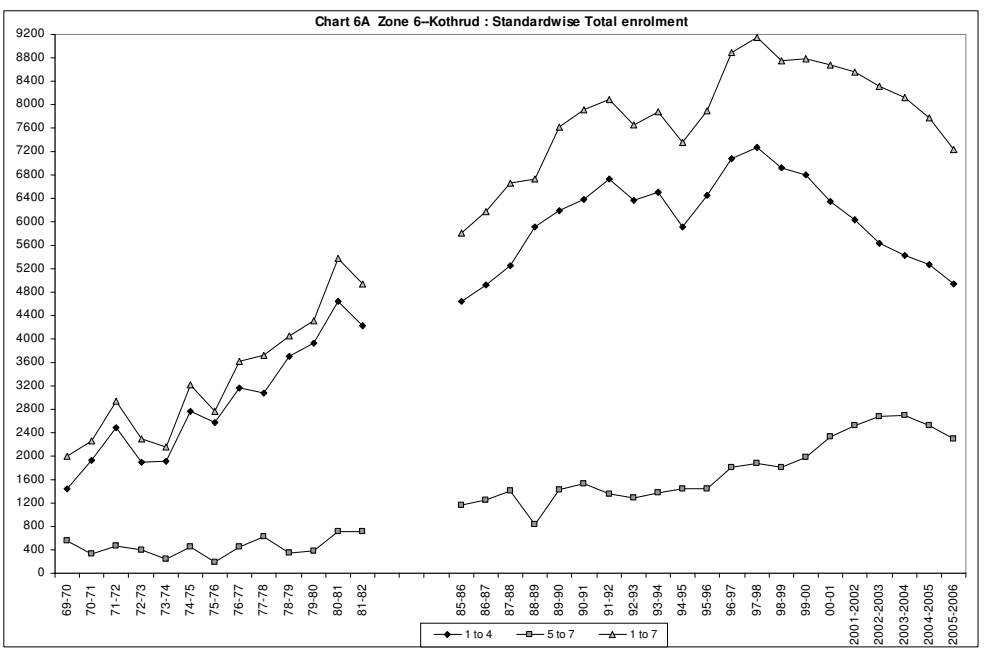
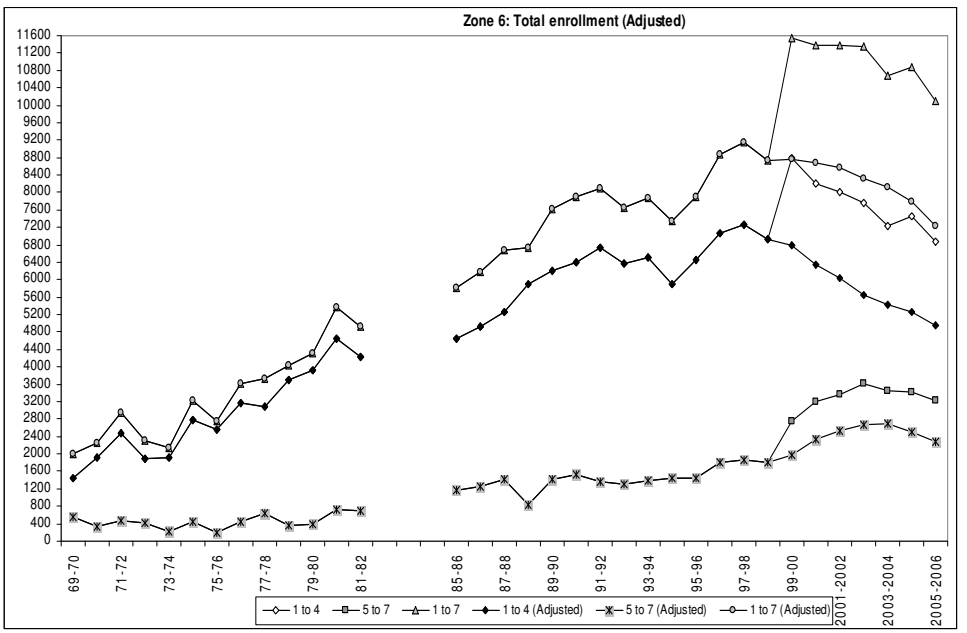
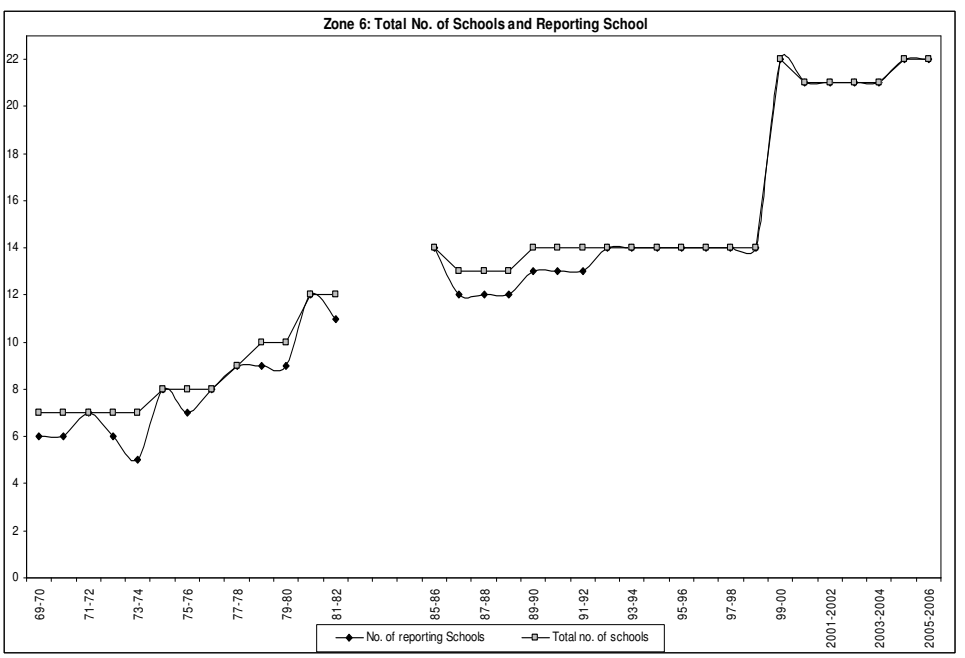
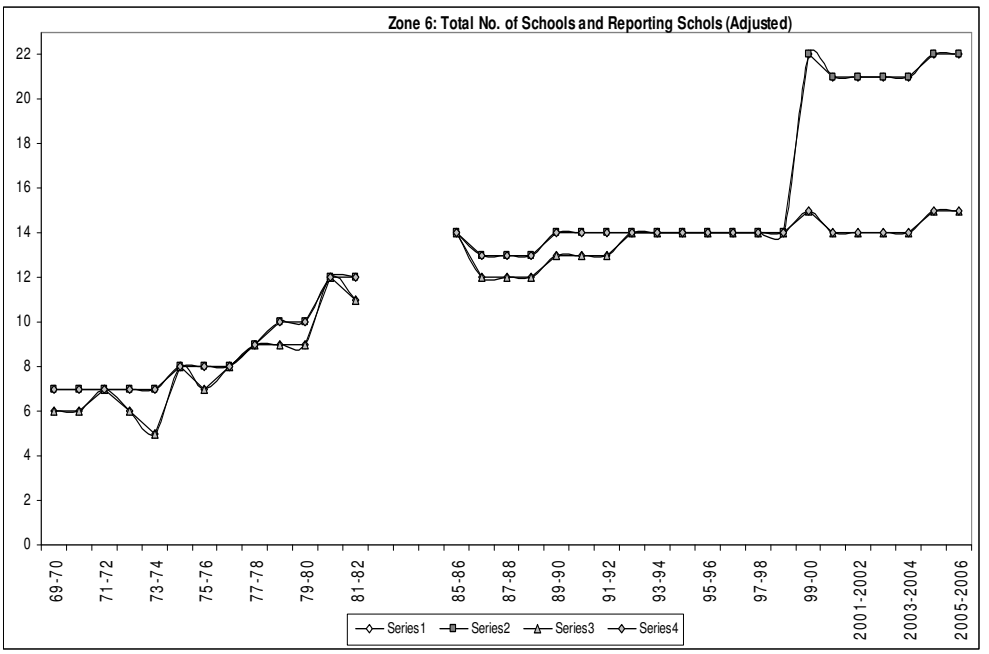


Chart 6A Zone 6--Kothrud : Standardwise Total enrolment
9200
8800
8400
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1 to 4
5 to 7
1 to 7


Zone 6: Total enrollment (Adjusted)
11600
11200
10800
10400
10000
9600
9200
8800
8400
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 to 4
5 to 7
1 to 7
1 to 4 (Adjusted)
5 to 7 (Adjusted)
1 to 7 (Adjusted)


Zone 6: Total No. of Schools and Reporting School
22
20
18
16
14
12
10
8
6
4
2
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
No. of reporting Schools
Total no. of schools


Zone 6: Total No. of Schools and Reporting Schols (Adjusted)
0
2
4
6
8
10
12
14
16
18
20
22
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1
Series2
Series3
Series4

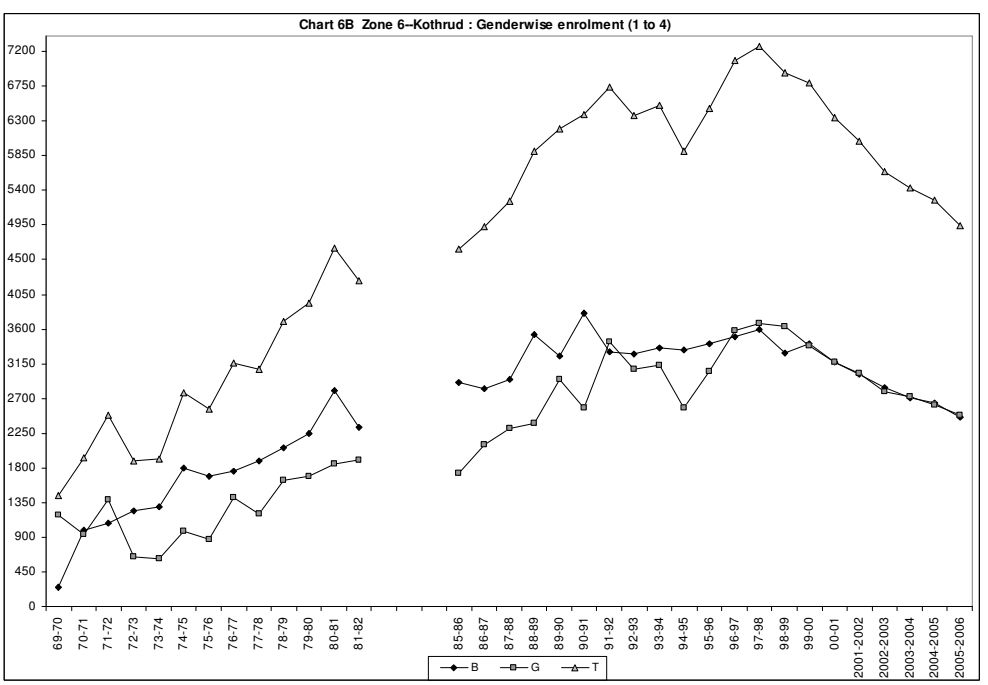
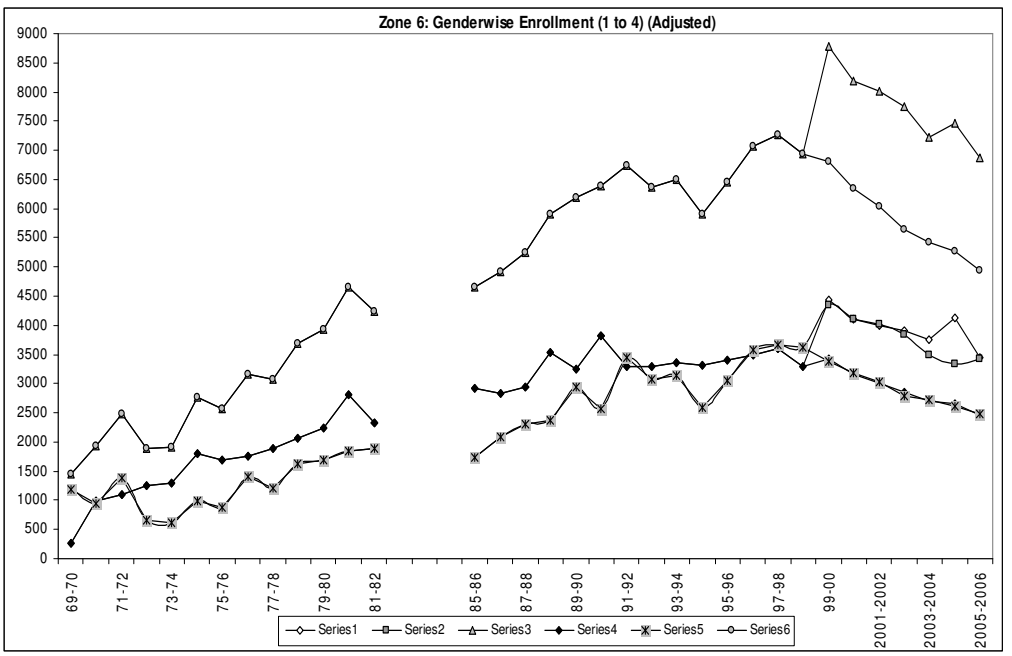


Chart 6B Zone 6--Kothrud : Genderwise enrolment (1 to 4)
0
450
900
1350
1800
2250
2700
3150
3600
4050
4500
4950
5400
5850
6300
6750
7200
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T


Zone 6: Genderwise Enrollment (1 to 4) (Adjusted)
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1
Series2
Series3
Series4
Series5
Series6

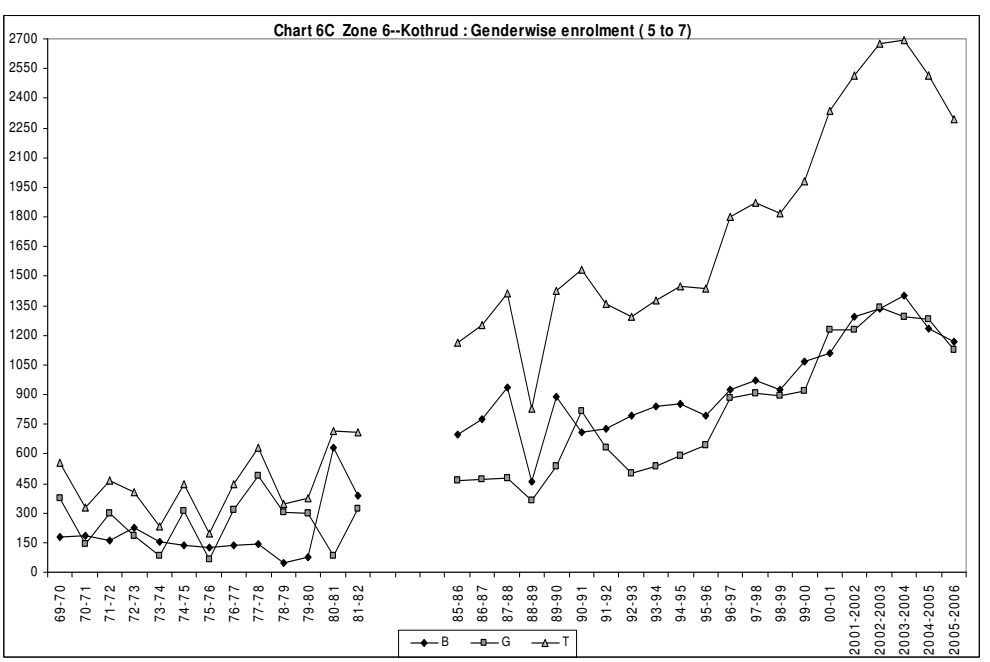
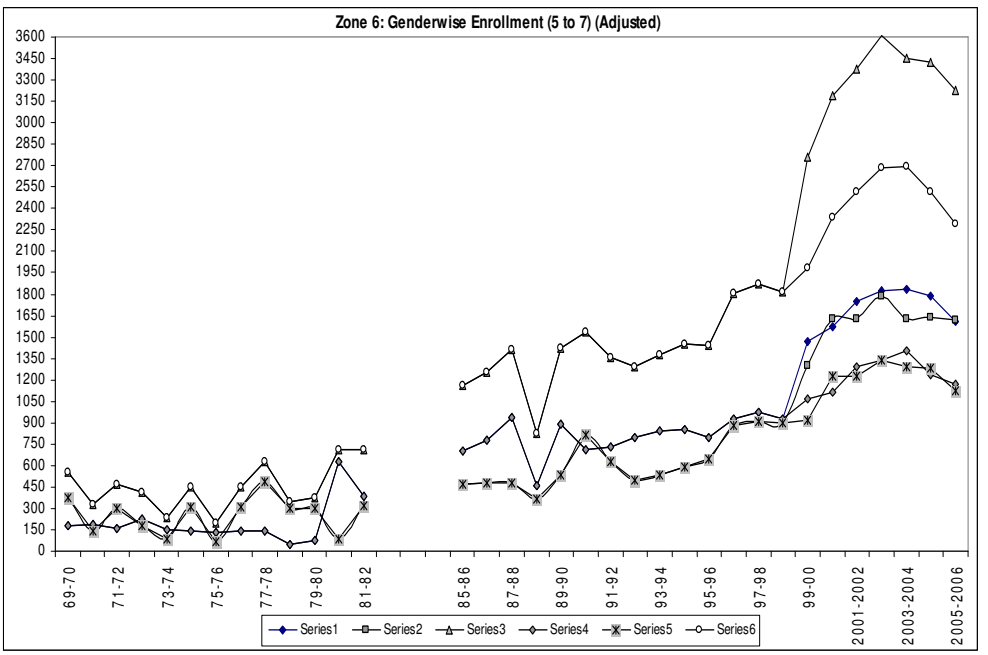


Chart 6C Zone 6--Kothrud : Genderwise enrolment (5 to 7)
2700
2550
2400
2250
2100
1950
1800
1650
1500
1350
1200
1050
900
750
600
450
300
150
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T


Zone 6: Genderwise Enrollment (5 to 7) (Adjusted)
3600
3450
3300
3150
3000
2850
2700
2550
2400
2250
2100
1950
1800
1650
1500
1350
1200
1050
900
750
600
450
300
150
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1
Series2
Series3
Series4
Series5
Series6

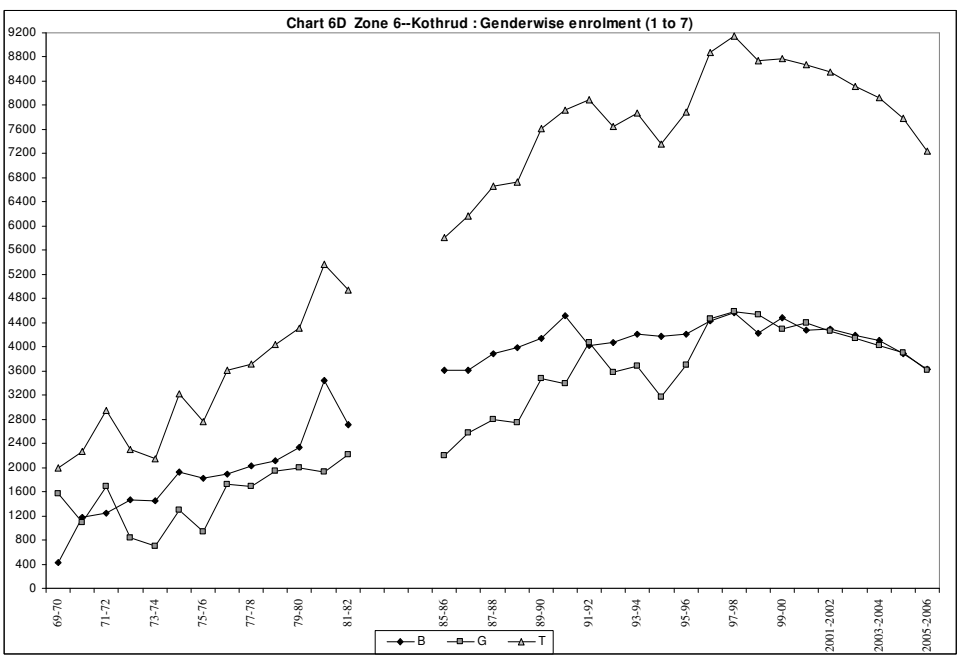
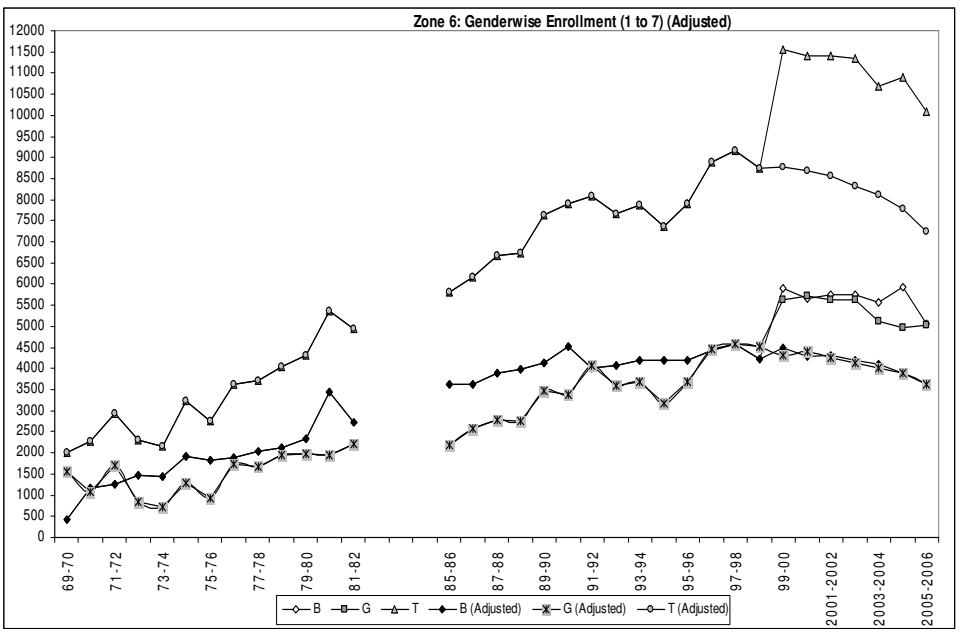
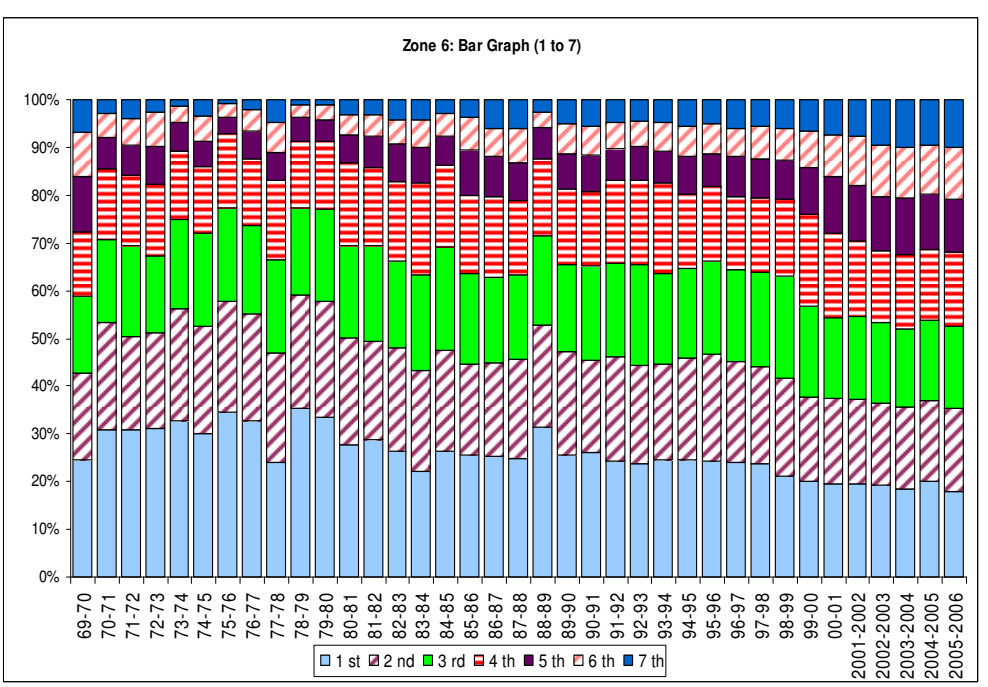
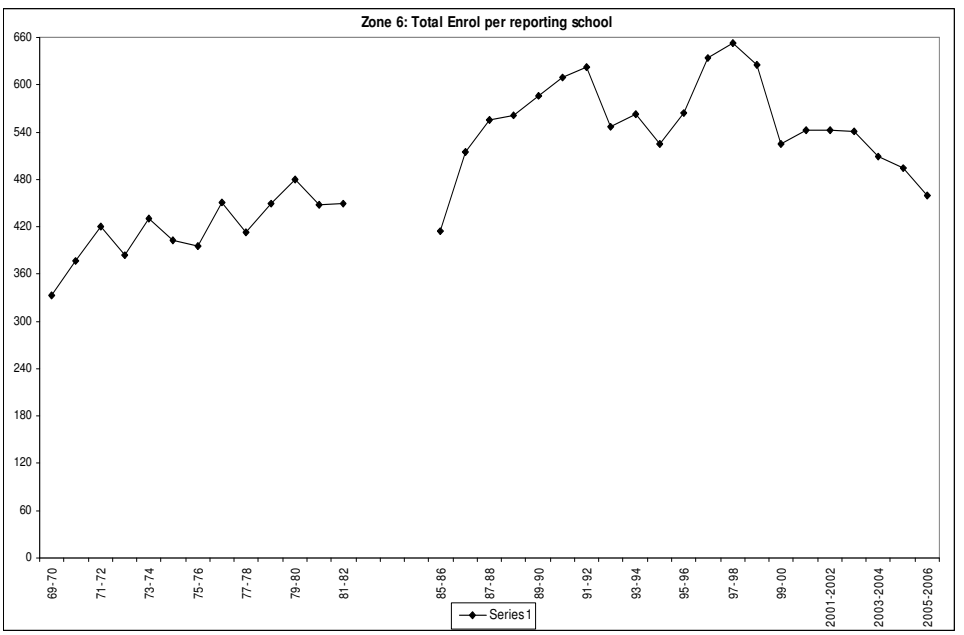
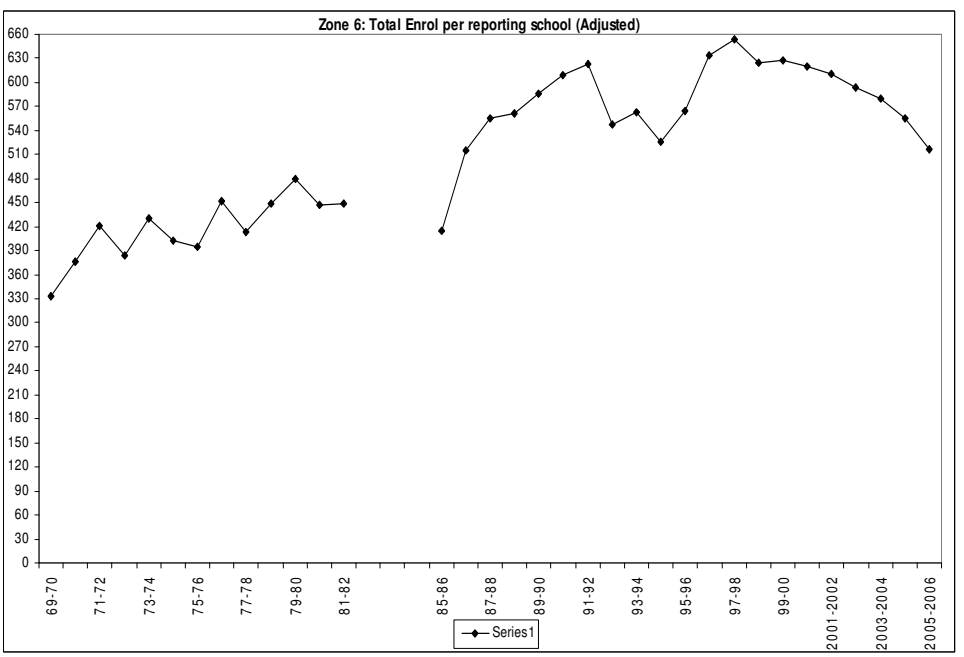


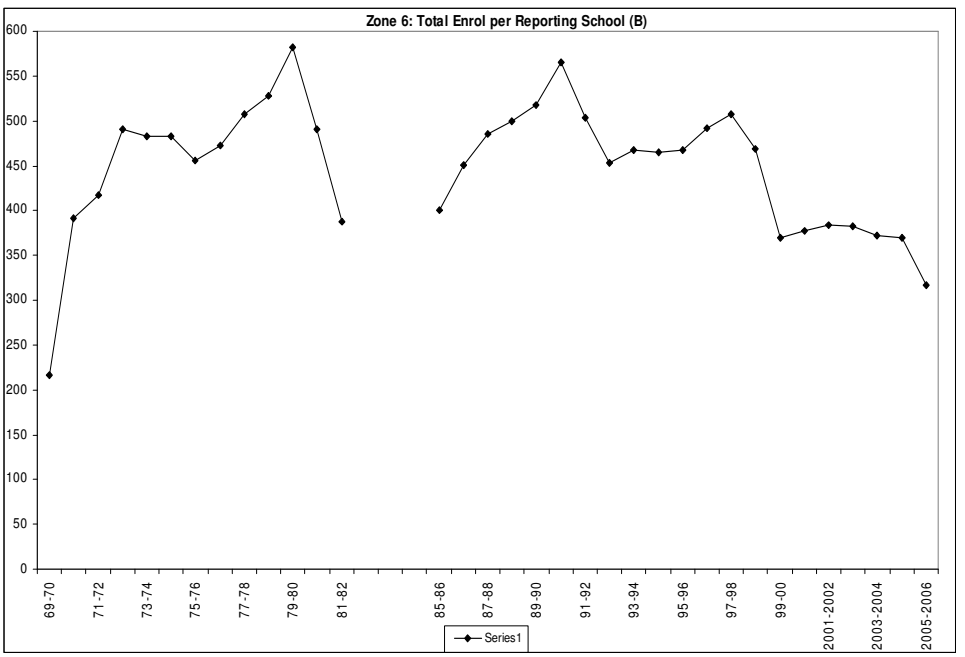
Chart 6D Zone 6--Kothrud : Genderwise enrolment (1 to 7)
9200
8800
8400
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T

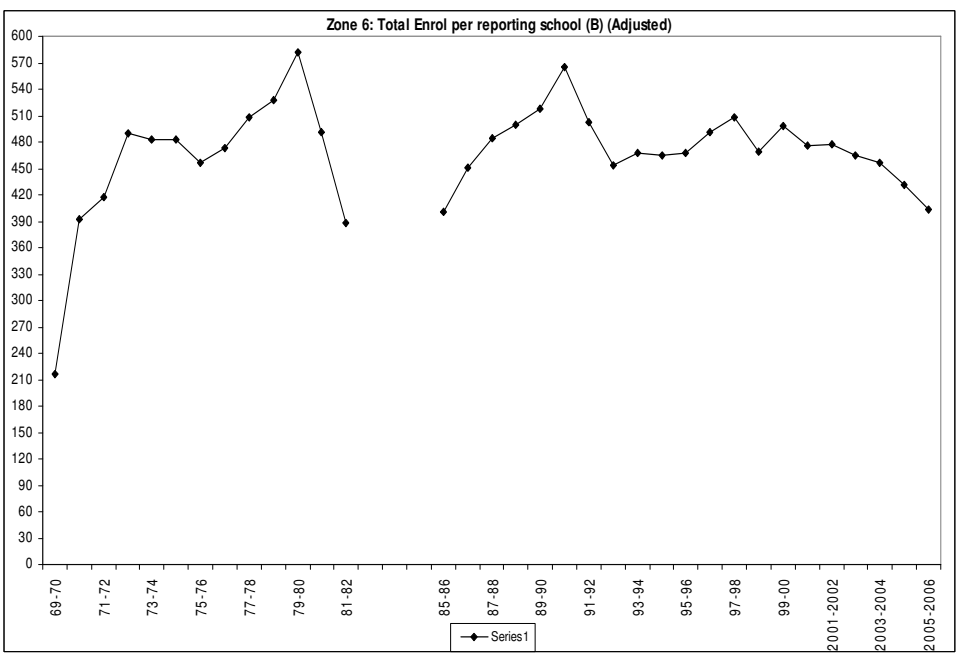

Zone 6: Genderwise Enrollment (1 to 7) (Adjusted)
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B (Adjusted)
G (Adjusted)
T (Adjusted)

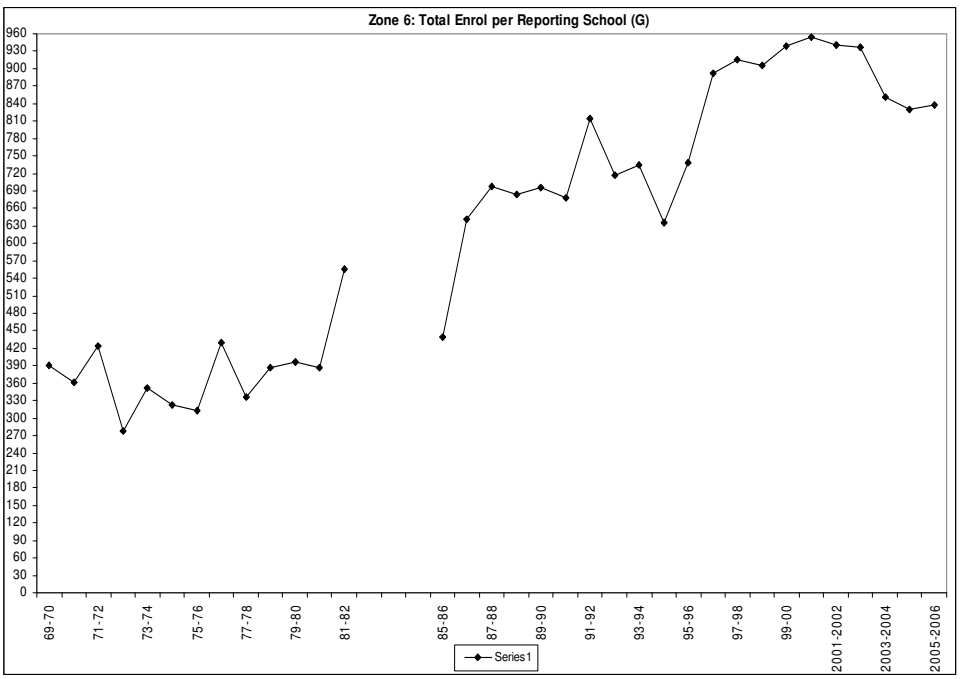

Zone 6: Bar Graph (1 to 7)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1 st
2 nd
3 rd
4 th
5 th
6 th
7 th

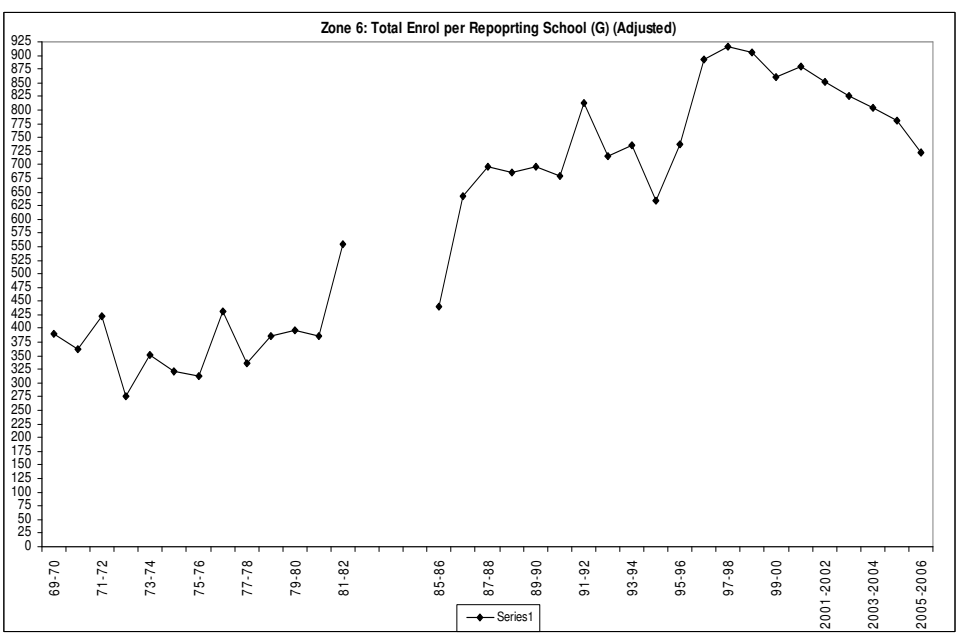

Zone 6: Total Enrol per reporting school
660
600
540
480
420
360
300
240
180
120
60
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

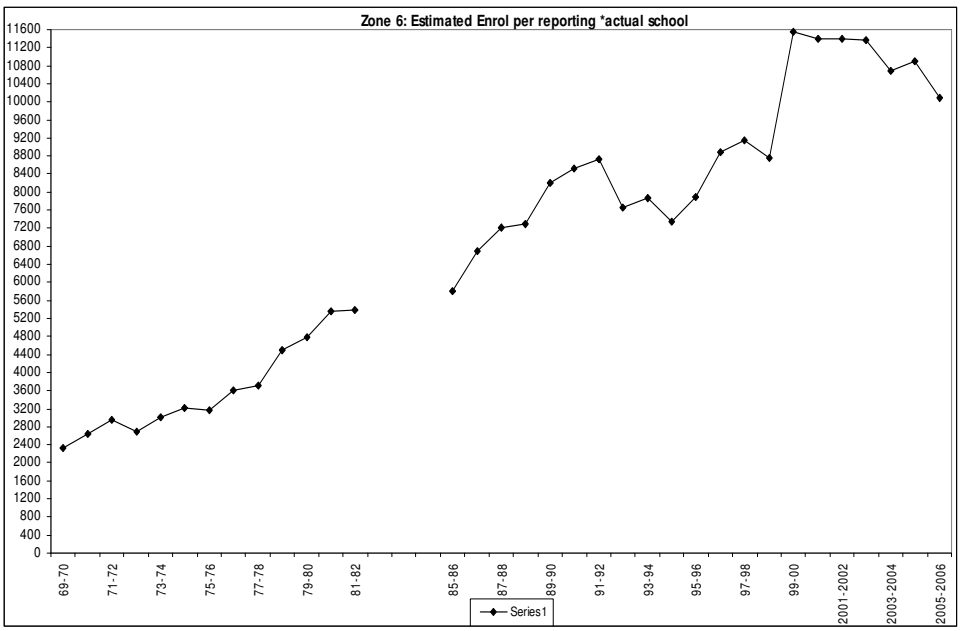

Zone 6: Total Enrol per reporting school (Adjusted)
660
630
600
570
540
510
480
450
420
390
360
330
300
270
240
210
180
150
120
90
60
30
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

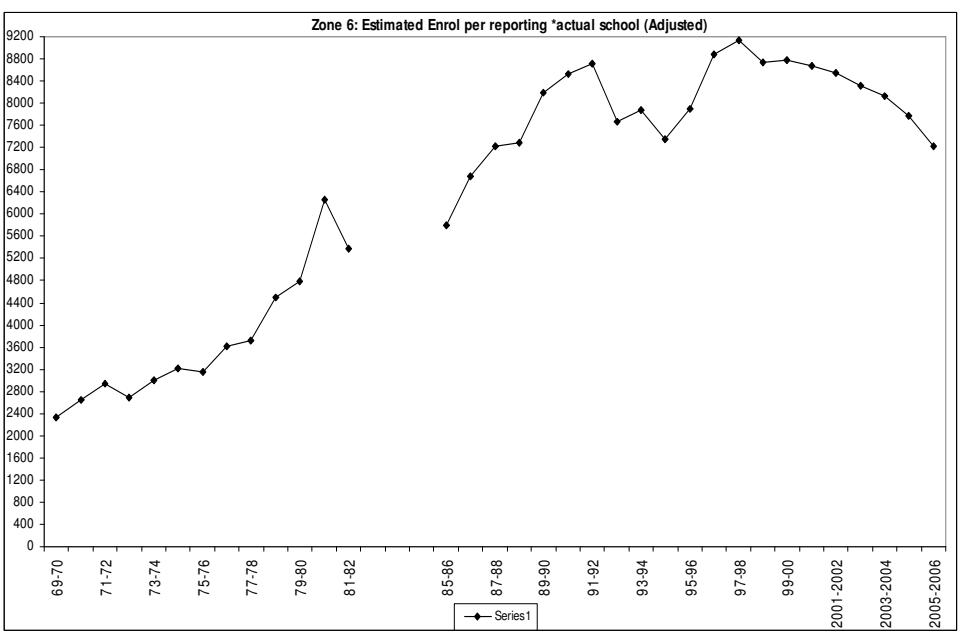

Zone 6: Total Enrol per Reporting School (B)
600
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

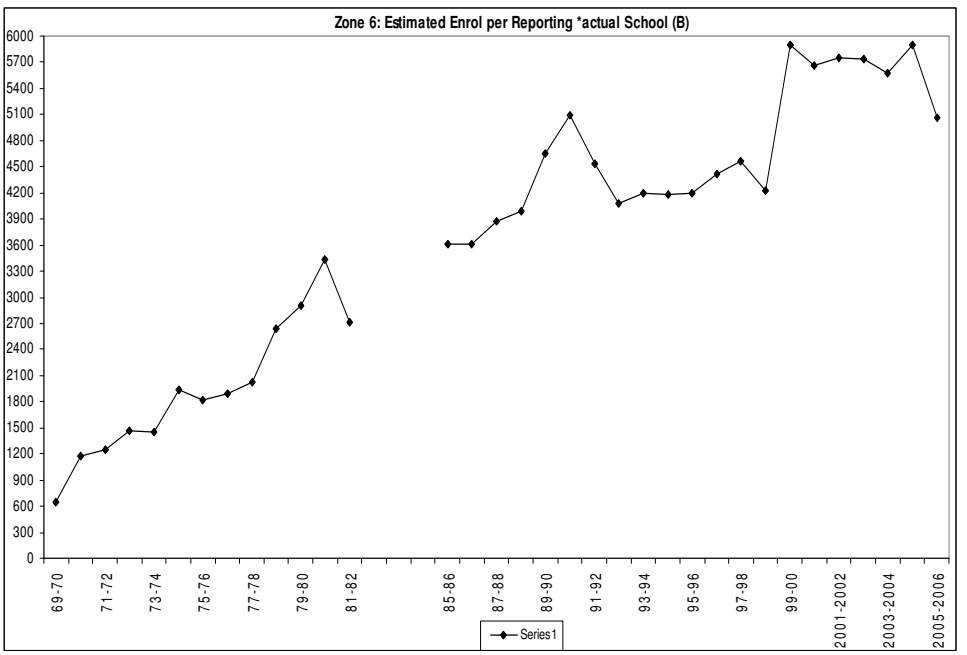

Zone 6: Total Enrol per reporting school (B) (Adjusted)
600
570
540
510
480
450
420
390
360
330
300
270
240
210
180
150
120
90
60
30
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

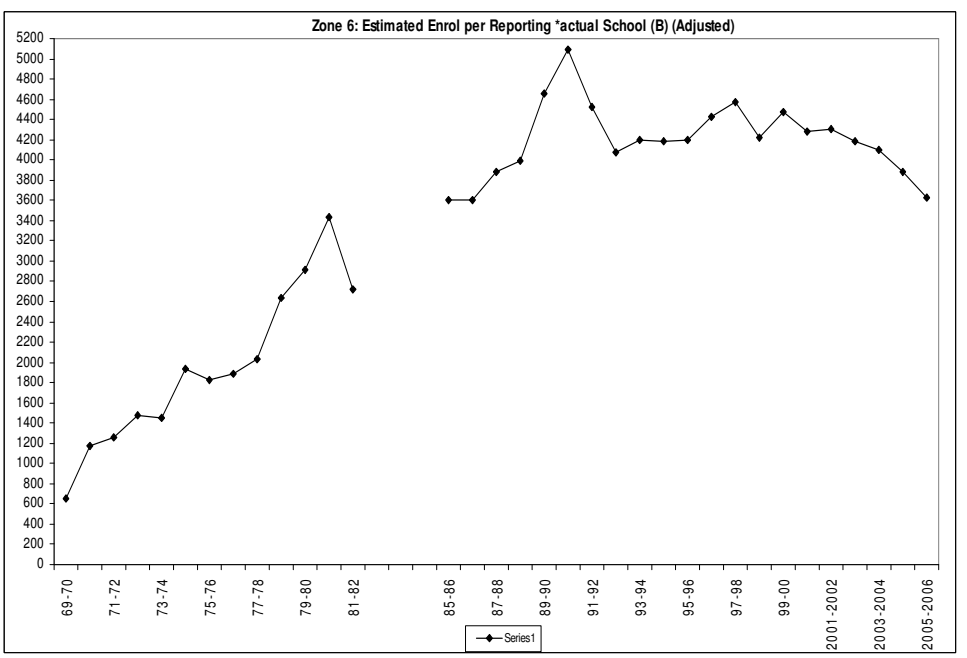

Zone 6: Total Enrol per Reporting School (G)
960
930
900
870
840
810
780
750
720
690
660
630
600
570
540
510
480
450
420
390
360
330
300
270
240
210
180
150
120
90
60
30
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

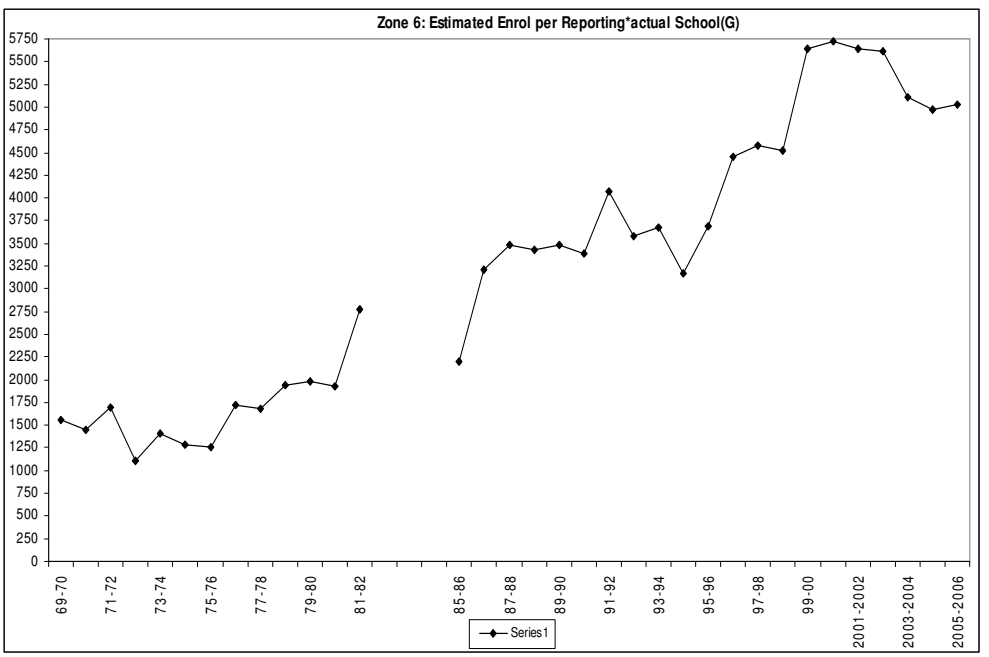

Zone 6: Total Enrol per Repoprting School (G) (Adjusted)
925
900
875
850
825
800
775
750
725
700
675
650
625
600
575
550
525
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

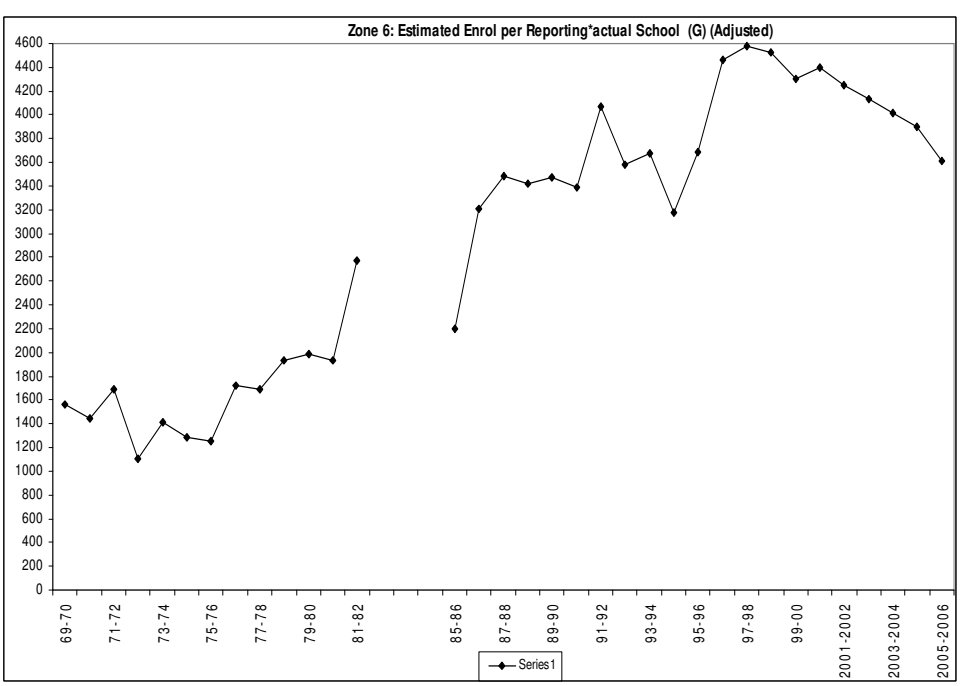

Zone 6: Estimated Enrol per reporting *actual school
11600
11200
10800
10400
10000
9600
9200
8800
8400
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

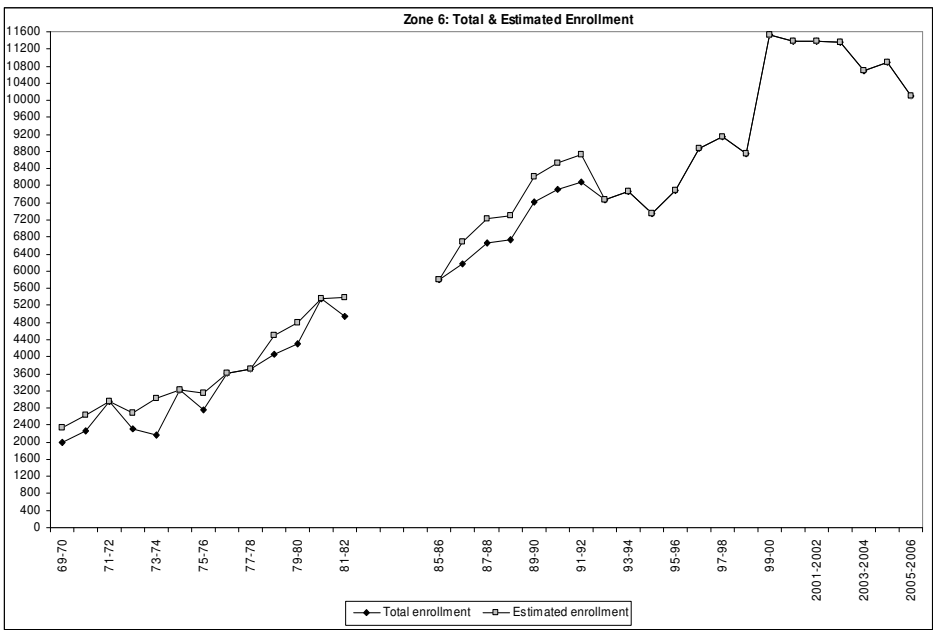

Zone 6: Estimated Enrol per reporting *actual school (Adjusted)
9200
8800
8400
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

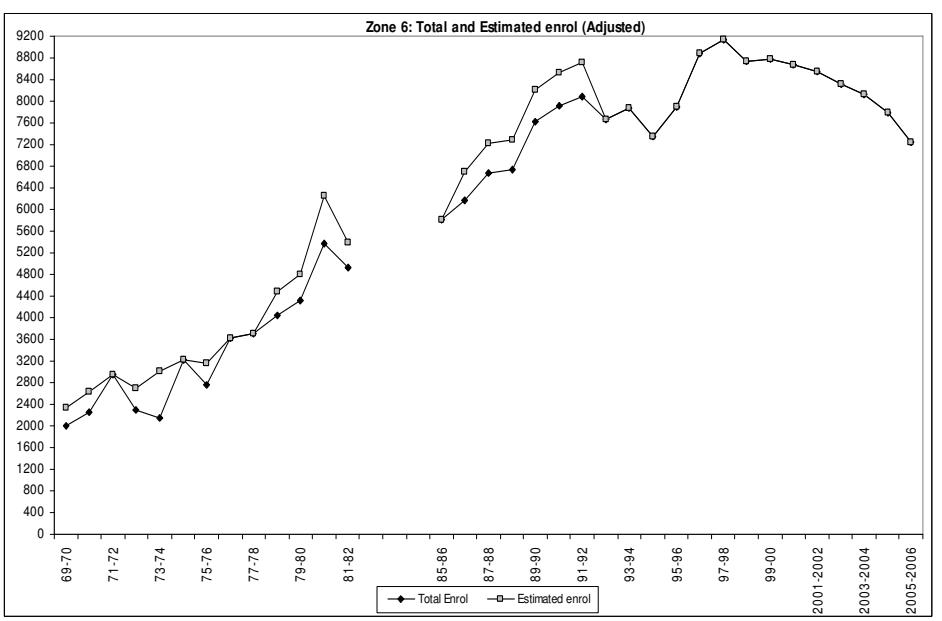

Zone 6: Estimated Enrol per Reporting *actual School (B)
6000
5700
5400
5100
4800
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

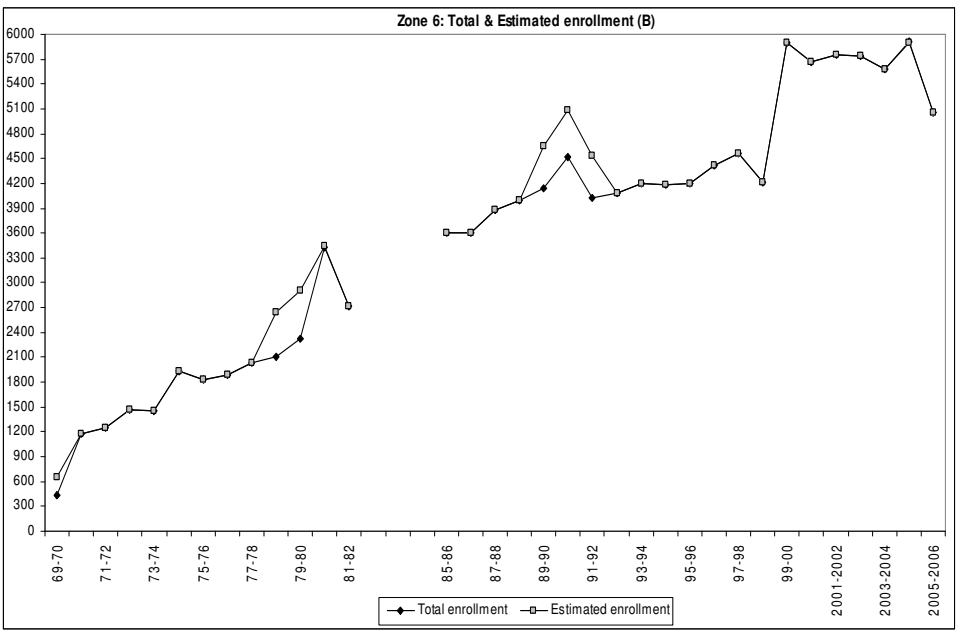

Zone 6: Estimated Enrol per Reporting *actual School (B) (Adjusted)
5200
5000
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

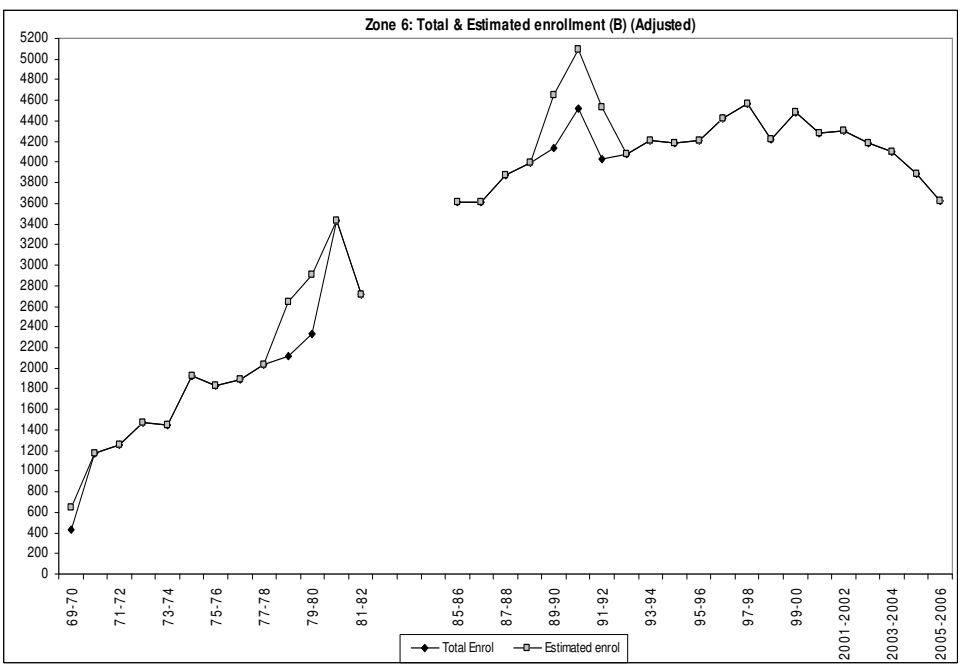

Zone 6: Estimated Enrol per Reporting*actual School(G)
5750
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

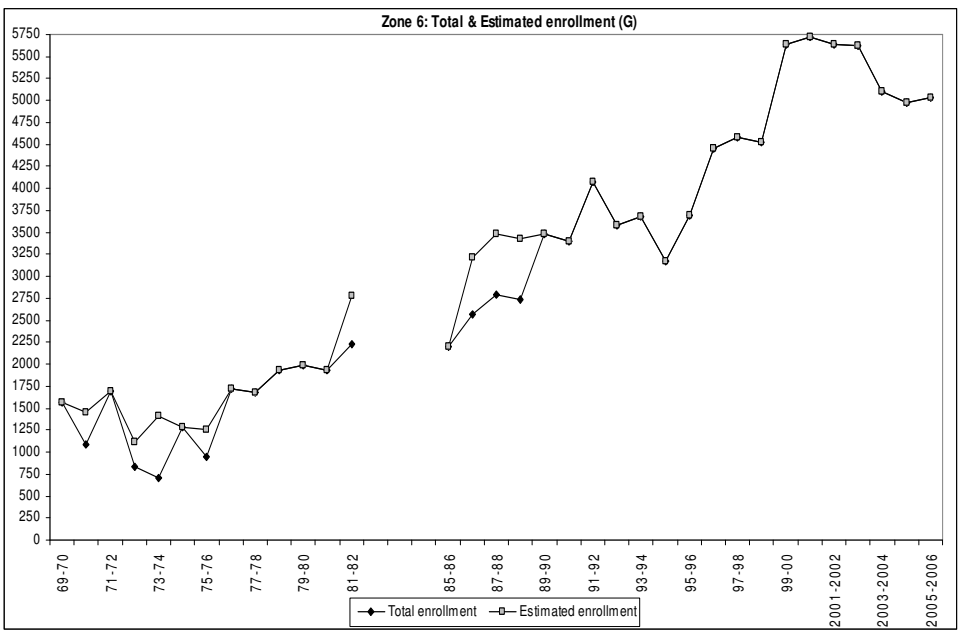

Zone 6: Estimated Enrol per Reporting*actual School (G) (Adjusted)
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

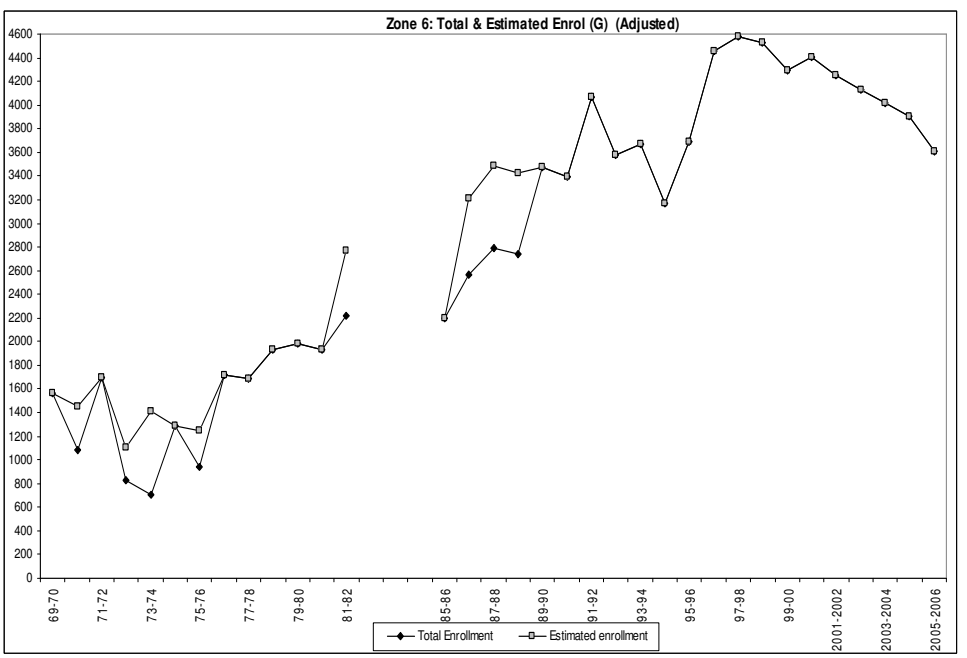

Zone 6: Total & Estimated Enrollment
11600
11200
10800
10400
10000
9600
9200
8800
8400
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 6: Total and Estimated enrol (Adjusted)
9200
8800
8400
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total Enrol
Estimated enrol


Zone 6: Total & Estimated enrollment (B)
6000
5700
5400
5100
4800
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 6: Total & Estimated enrollment (B) (Adjusted)
5200
5000
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total Enrol
Estimated enrol


Zone 6: Total & Estimated enrollment (G)
5750
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 6: Total & Estimated Enrol (G) (Adjusted)
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total Enrollment
Estimated enrollment

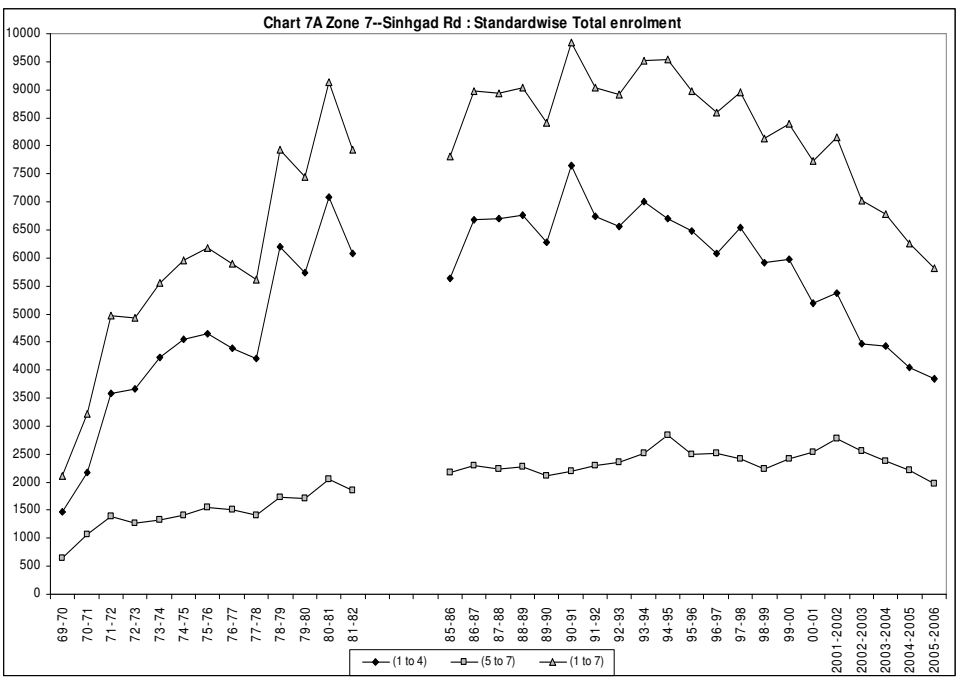
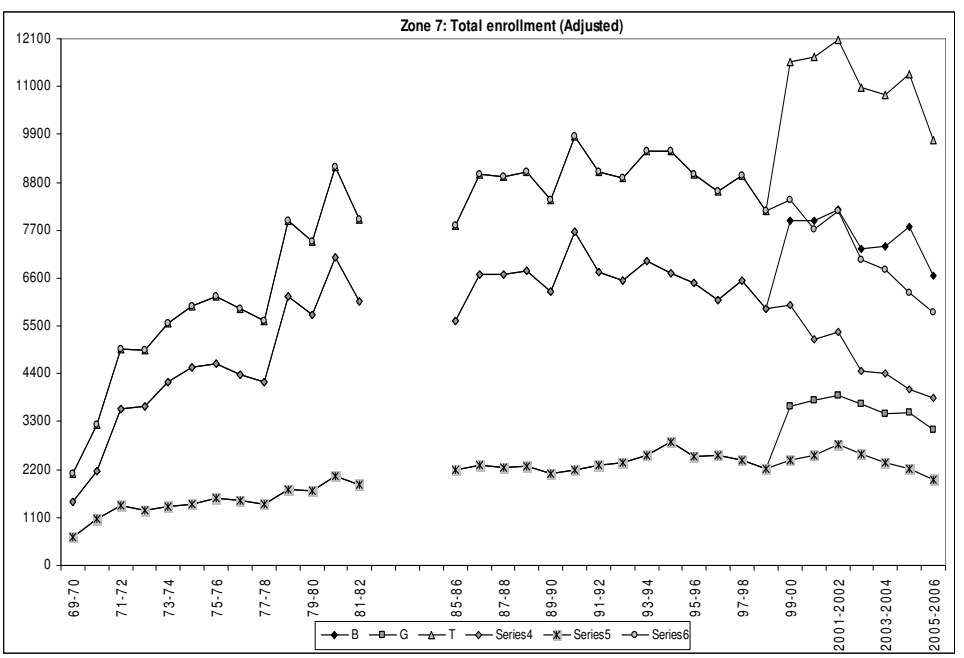
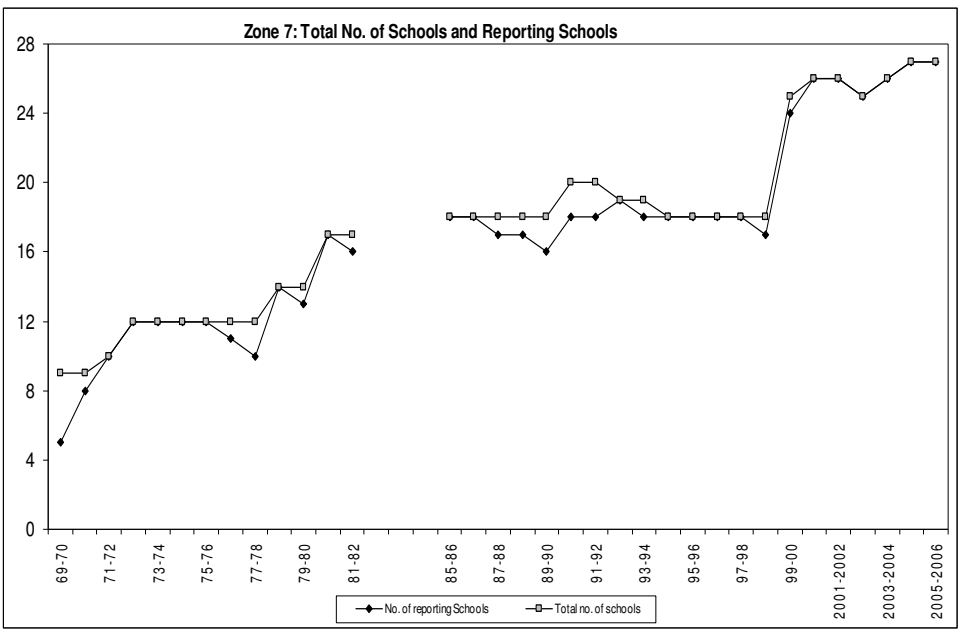
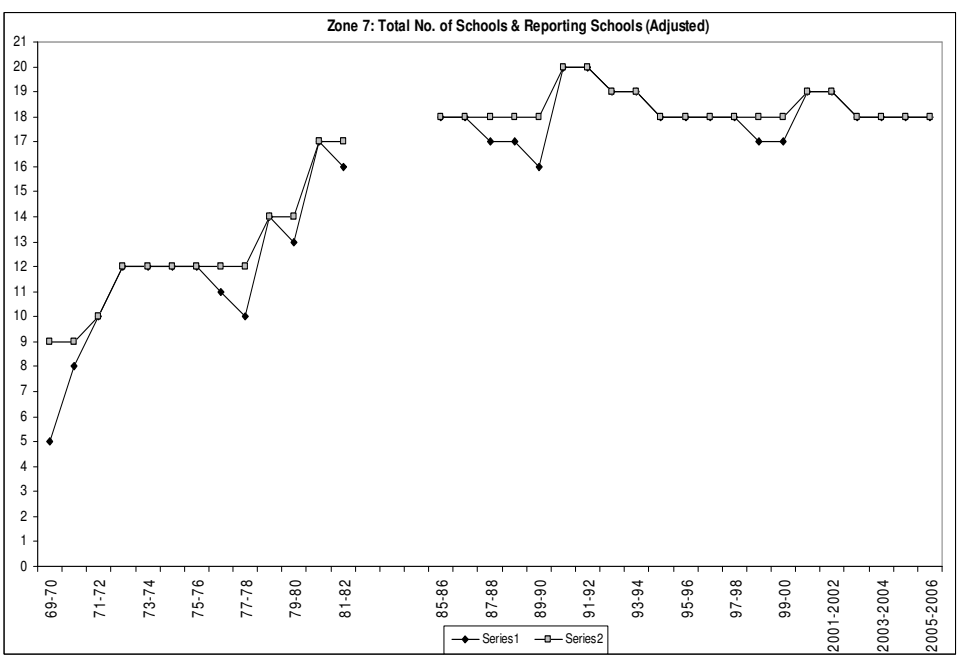
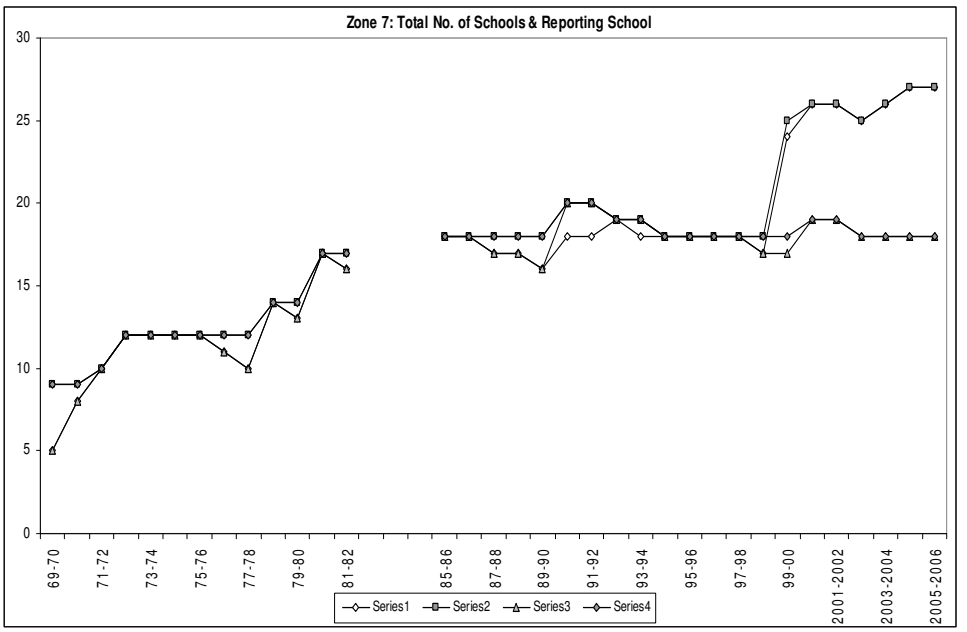


Chart 7A Zone 7--Sinhgad Rd : Standardwise Total enrolment
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
(1 to 4)
(5 to 7)
(1 to 7)


Zone 7: Total enrollment (Adjusted)
12100
11000
9900
8800
7700
6600
5500
4400
3300
2200
1100
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
Series4
Series5
Series6


Zone 7: Total No. of Schools and Reporting Schools
28
24
20
16
12
8
4
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
No. of reporting Schools
Total no. of schools


Zone 7: Total No. of Schools & Reporting Schools (Adjusted)
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1
Series2


Zone 7: Total No. of Schools & Reporting School
30
25
20
15
10
5
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1
Series2
Series3
Series4

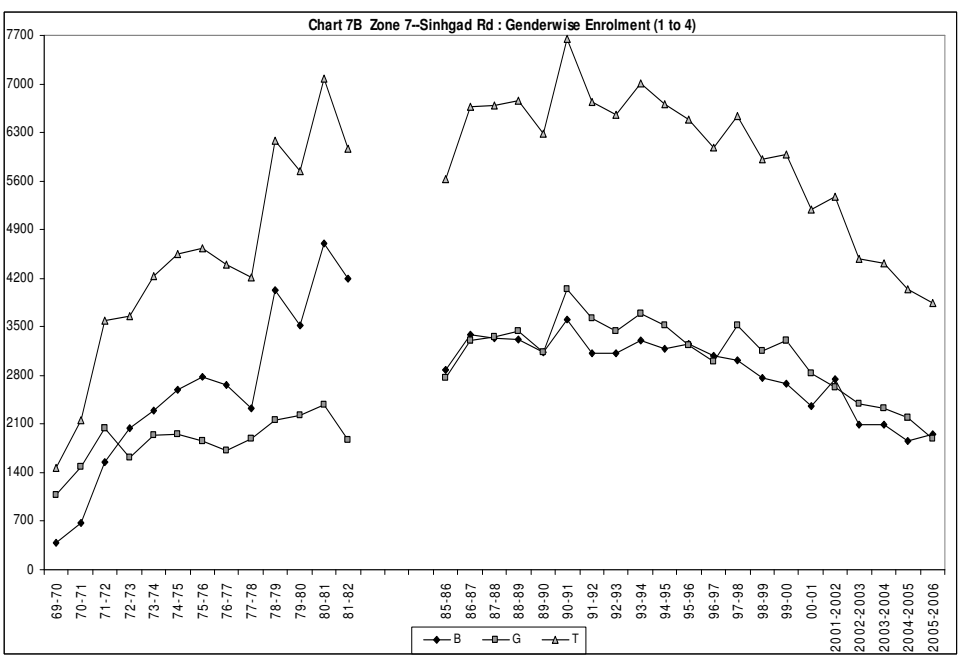
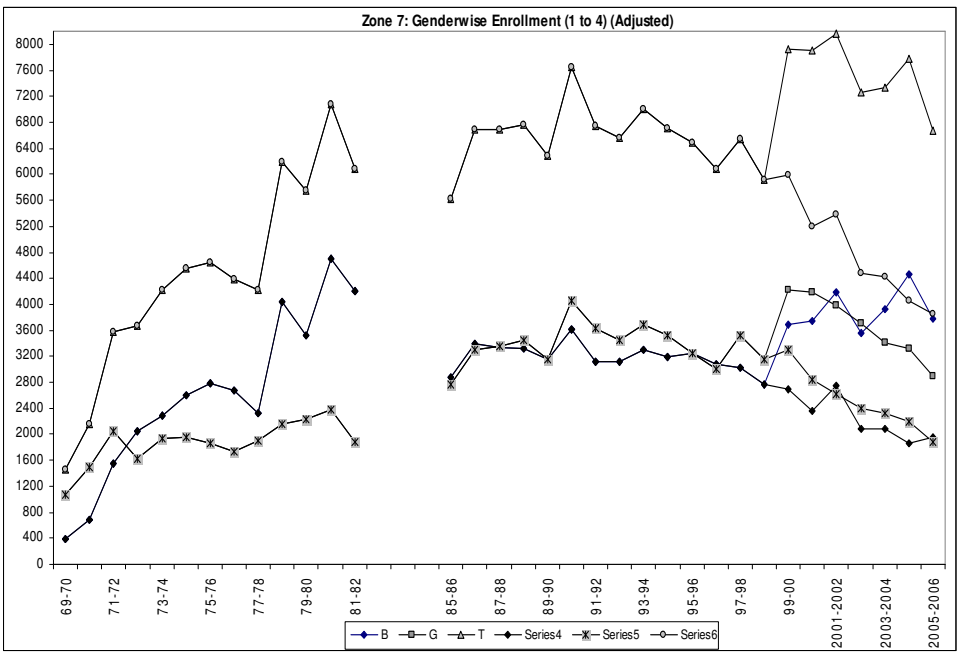


Chart 7B Zone 7–Sinhgad Rd : Genderwise Enrolment (1 to 4)
7700
7000
6300
5600
4900
4200
3500
2800
2100
1400
700
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T


Zone 7: Genderwise Enrollment (1 to 4) (Adjusted)
8000
7600
7200
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
Series4
Series5
Series6

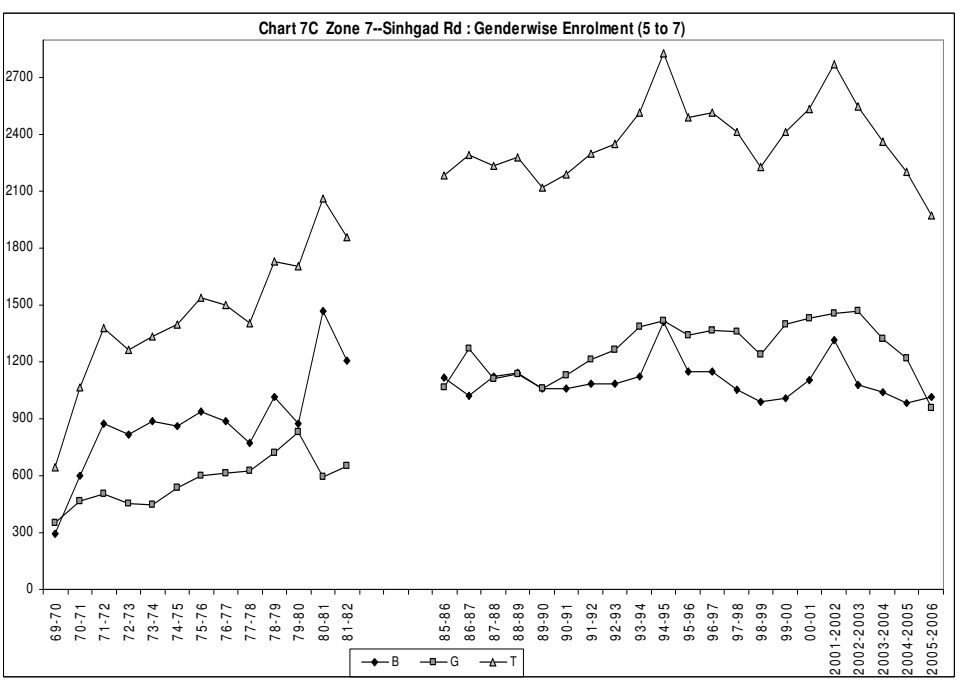
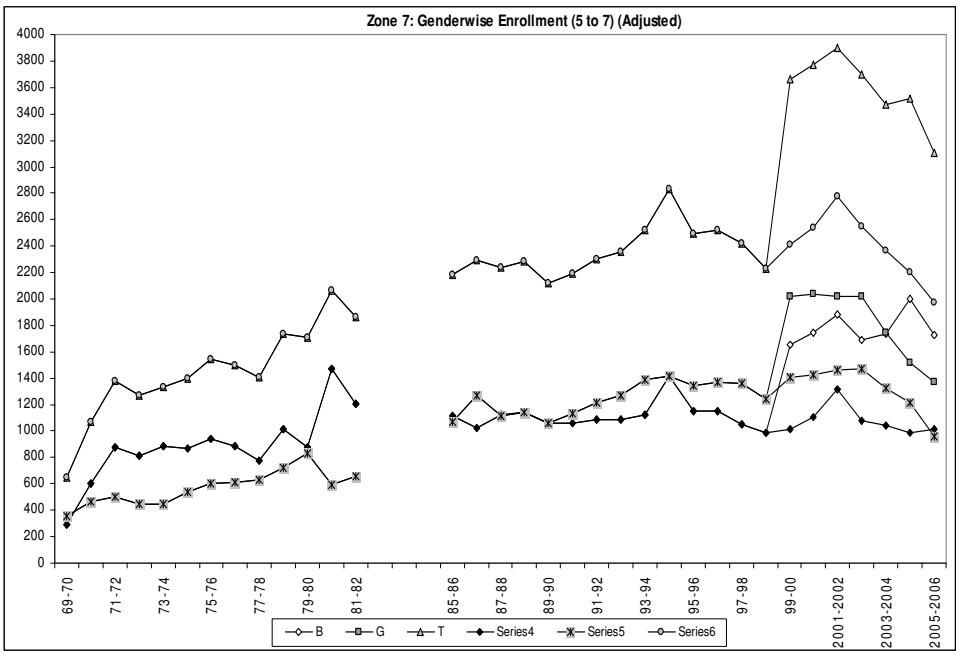


Chart 7C Zone 7--Sinhgad Rd : Genderwise Enrolment (5 to 7)
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T


Zone 7: Genderwise Enrollment (5 to 7) (Adjusted)
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
Series4
Series5
Series6

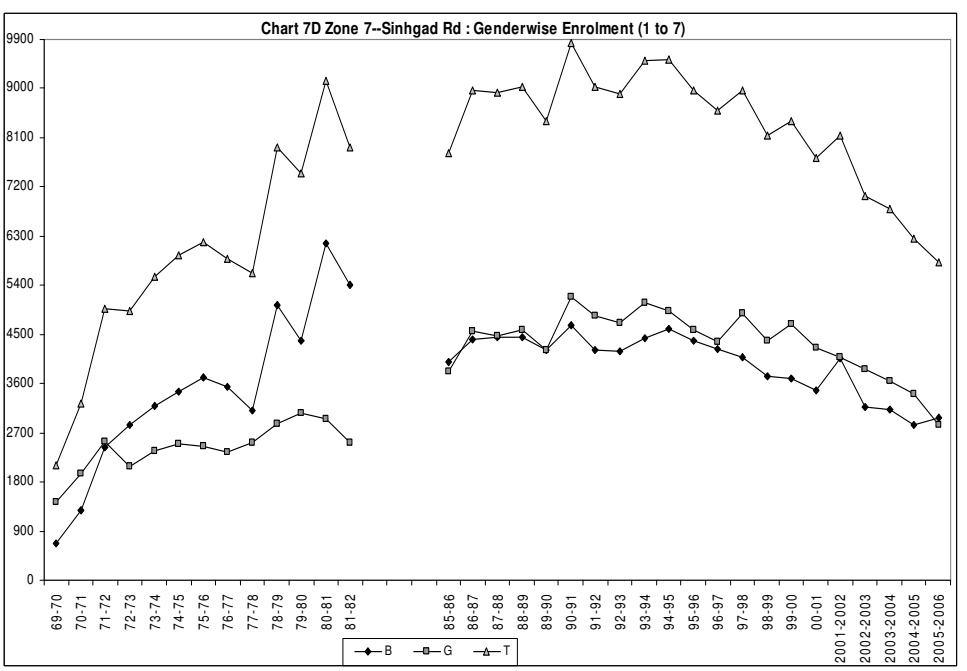
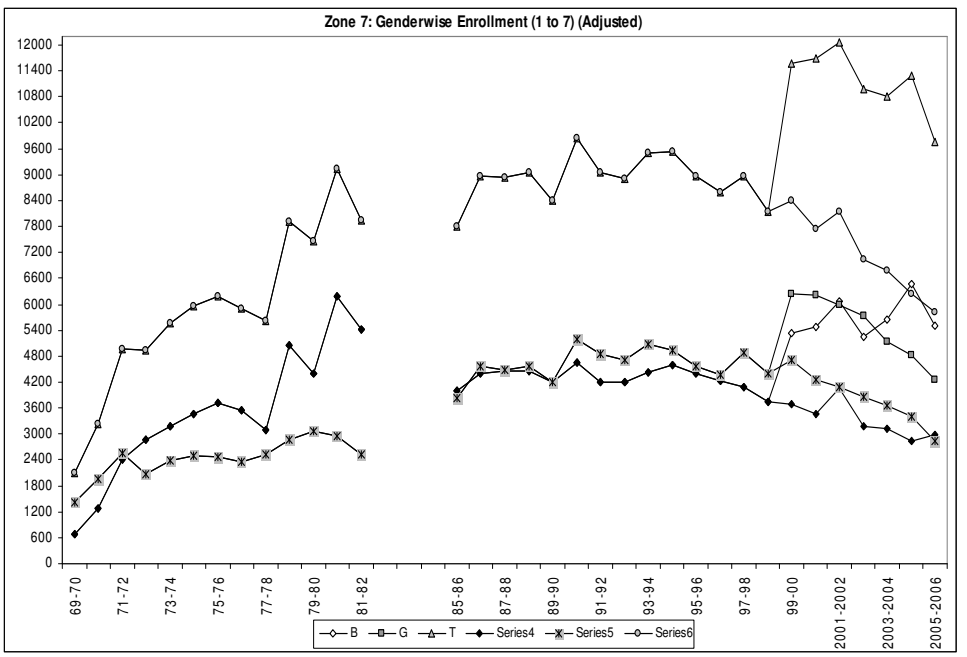
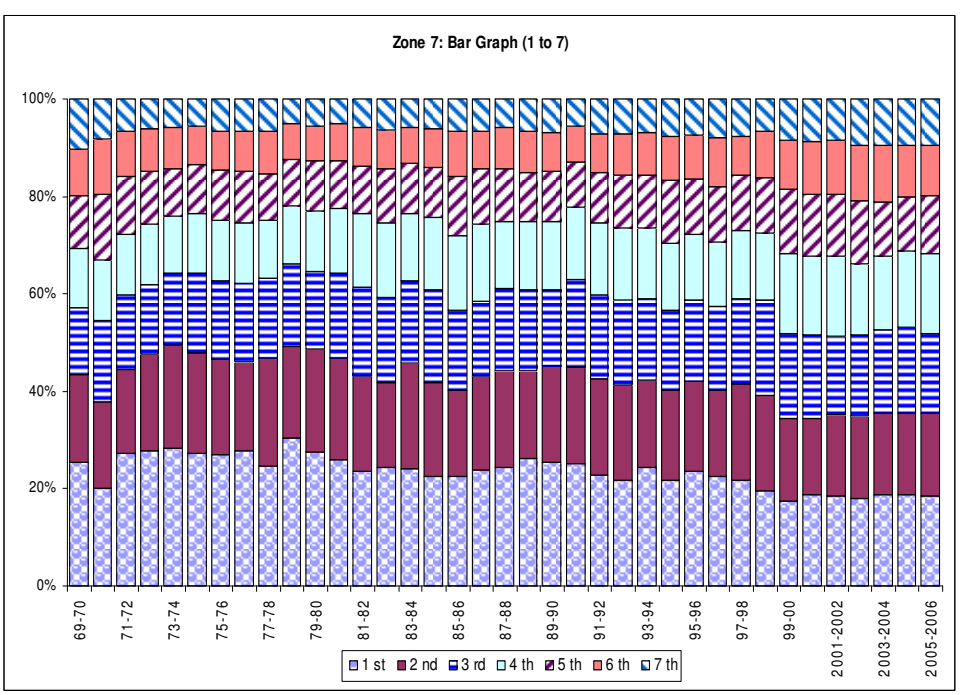
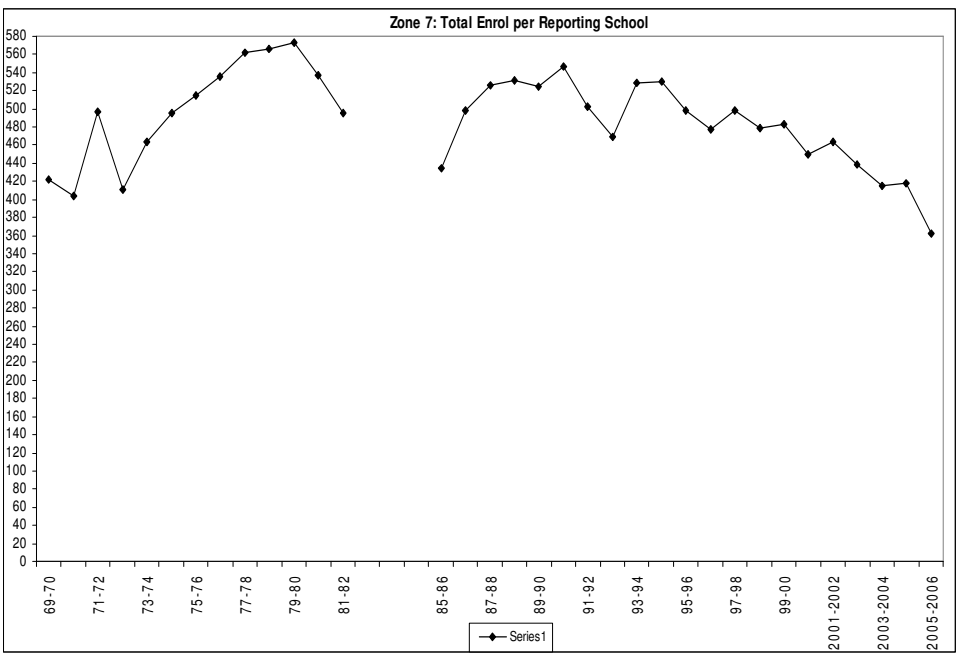
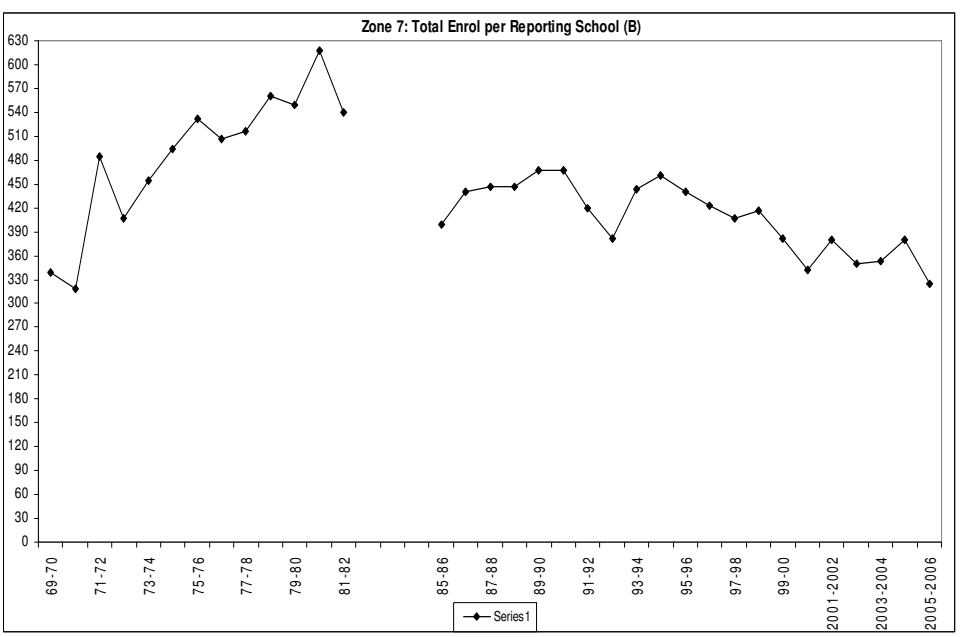


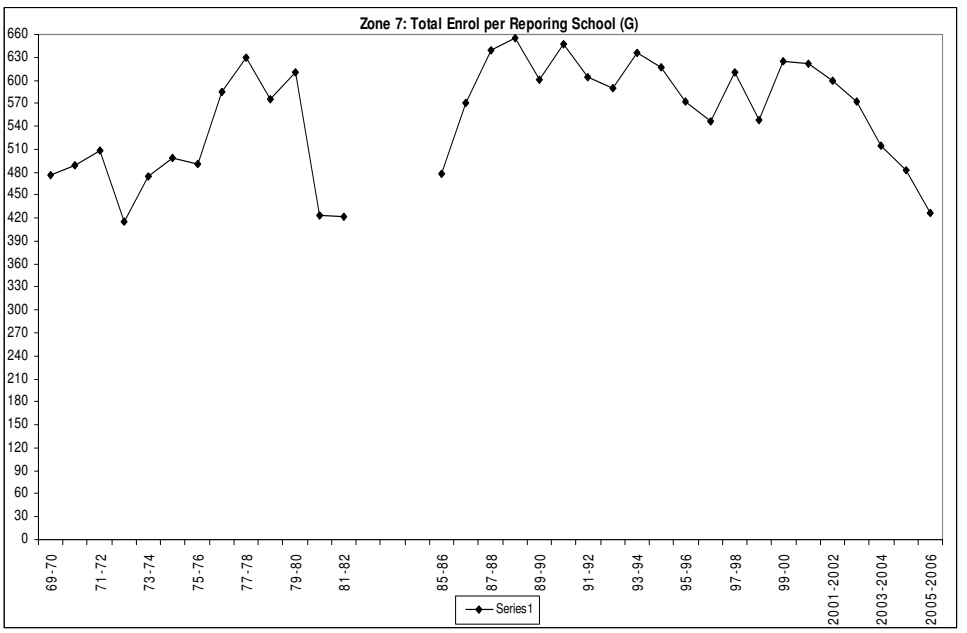
Chart 7D Zone 7--Sinhgad Rd : Genderwise Enrolment (1 to 7)
9900
9000
8100
7200
6300
5400
4500
3600
2700
1800
900
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T

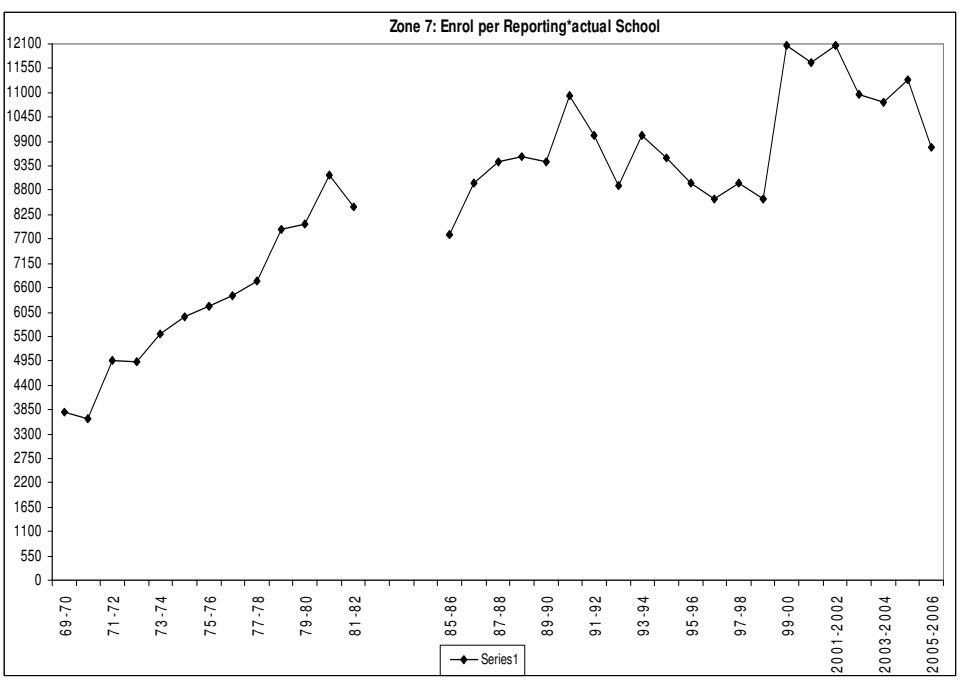

Zone 7: Genderwise Enrollment (1 to 7) (Adjusted)
12000
11400
10800
10200
9600
9000
8400
7800
7200
6600
6000
5400
4800
4200
3600
3000
2400
1800
1200
600
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
Series4
Series5
Series6

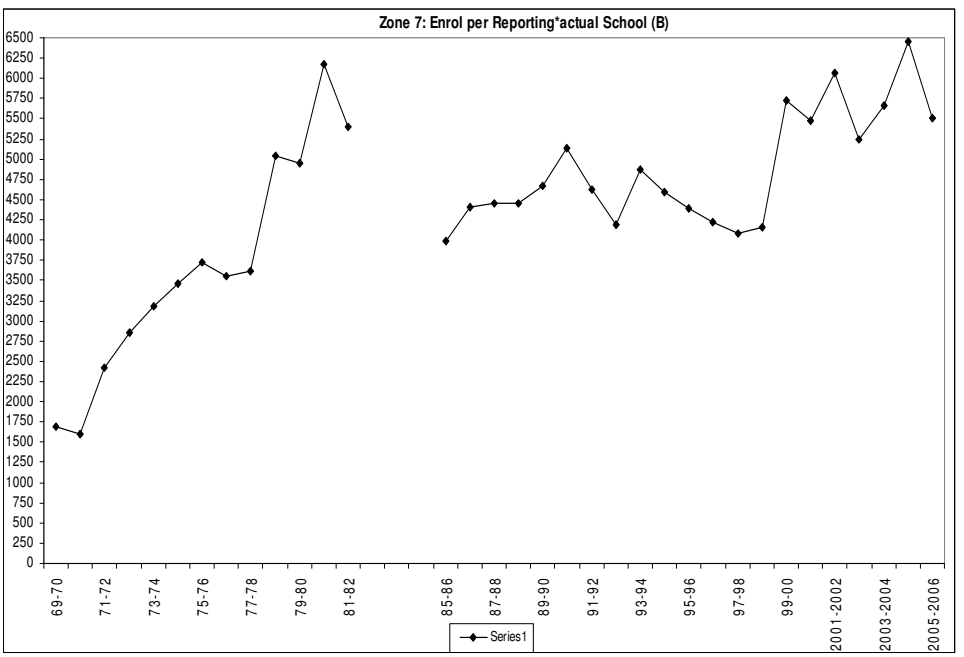

Zone 7: Bar Graph (1 to 7)
100%
80%
60%
40%
20%
0%
69-70
71-72
73-74
75-76
77-78
79-80
81-82
83-84
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 st
2 nd
3 rd
4 th
5 th
6 th
7 th

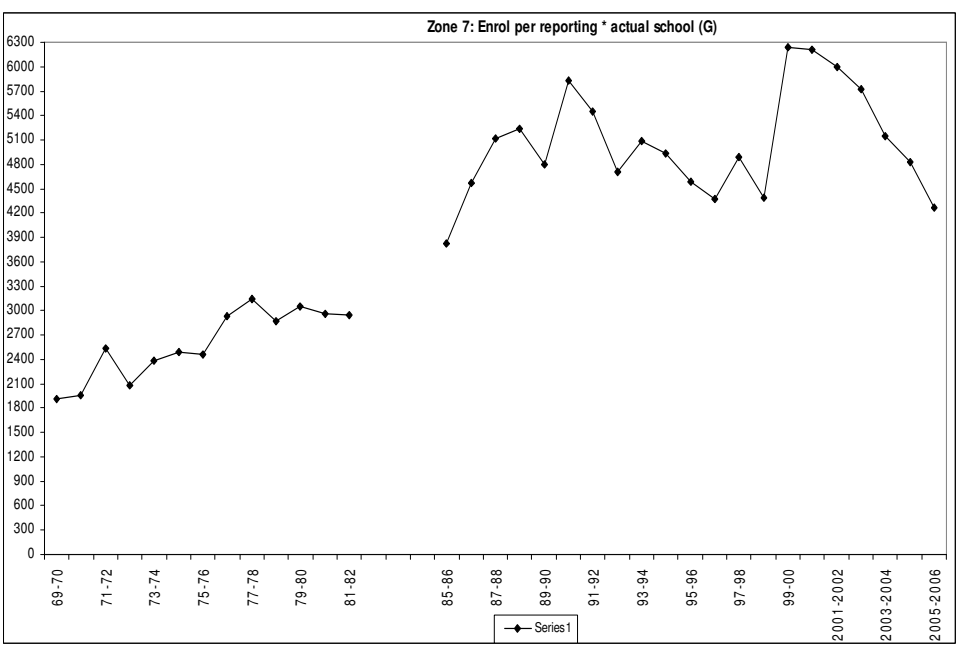

Zone 7: Total Enrol per Reporting School
580
560
540
520
500
480
460
440
420
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

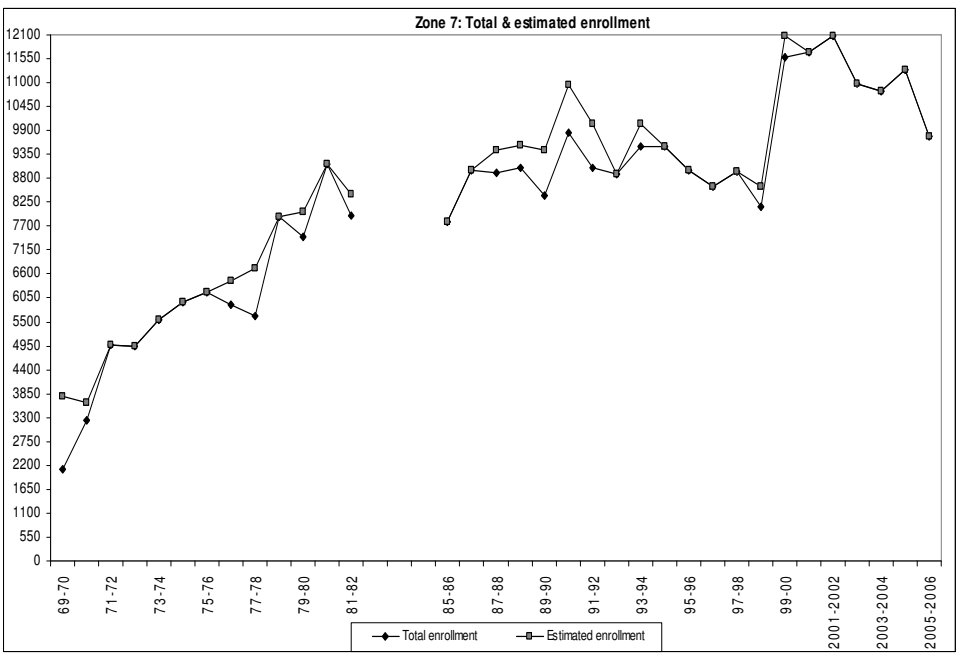

Zone 7: Total Enrol per Reporting School (B)
630
600
570
540
510
480
450
420
390
360
330
300
270
240
210
180
150
120
90
60
30
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

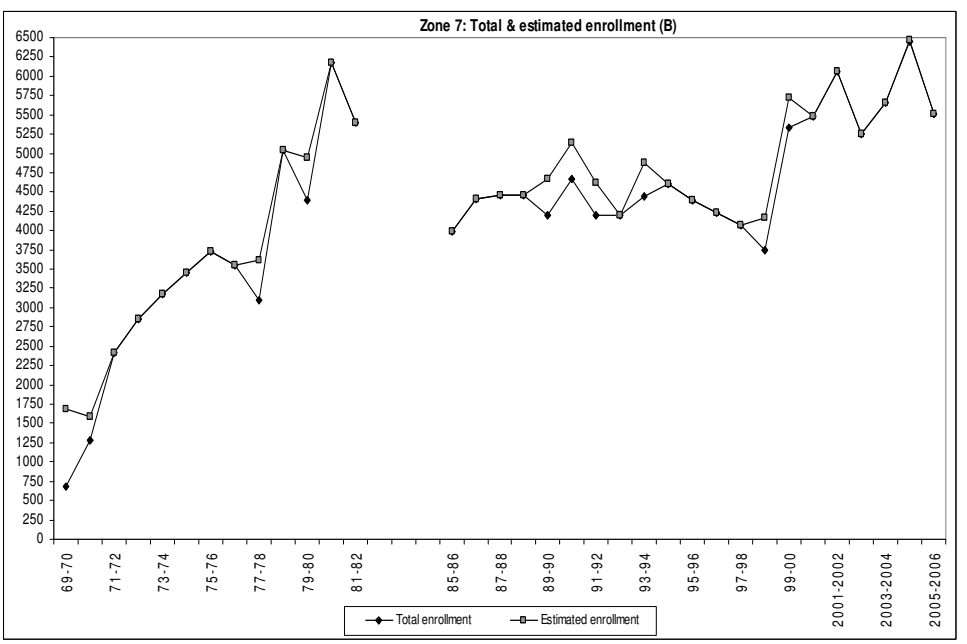

Zone 7: Total Enrol per Reporing School (G)
660
630
600
570
540
510
480
450
420
390
360
330
300
270
240
210
180
150
120
90
60
30
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

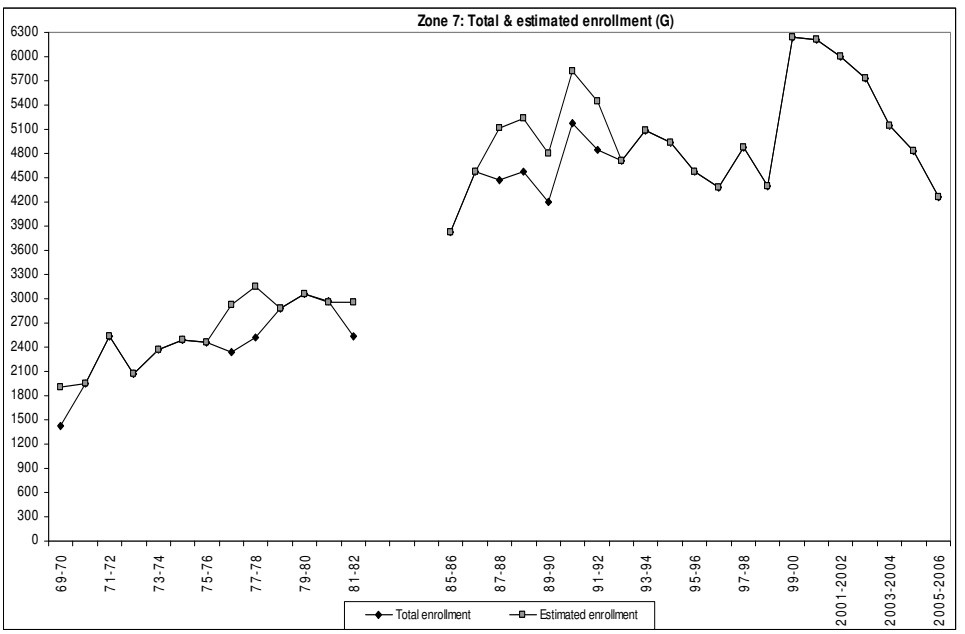

Zone 7: Enrol per Reporting*actual School
12100
11550
11000
10450
9900
9350
8800
8250
7700
7150
6600
6050
5500
4950
4400
3850
3300
2750
2200
1650
1100
550
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 7: Enrol per Reporting*actual School (B)
6500
6250
6000
5750
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 7: Enrol per reporting * actual school (G)
6300
6000
5700
5400
5100
4800
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 7: Total & estimated enrollment
12100
11550
11000
10450
9900
9350
8800
8250
7700
7150
6600
6050
5500
4950
4400
3850
3300
2750
2200
1650
1100
550
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 7: Total & estimated enrollment (B)
6500
6250
6000
5750
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 7: Total & estimated enrollment (G)
6300
6000
5700
5400
5100
4800
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment

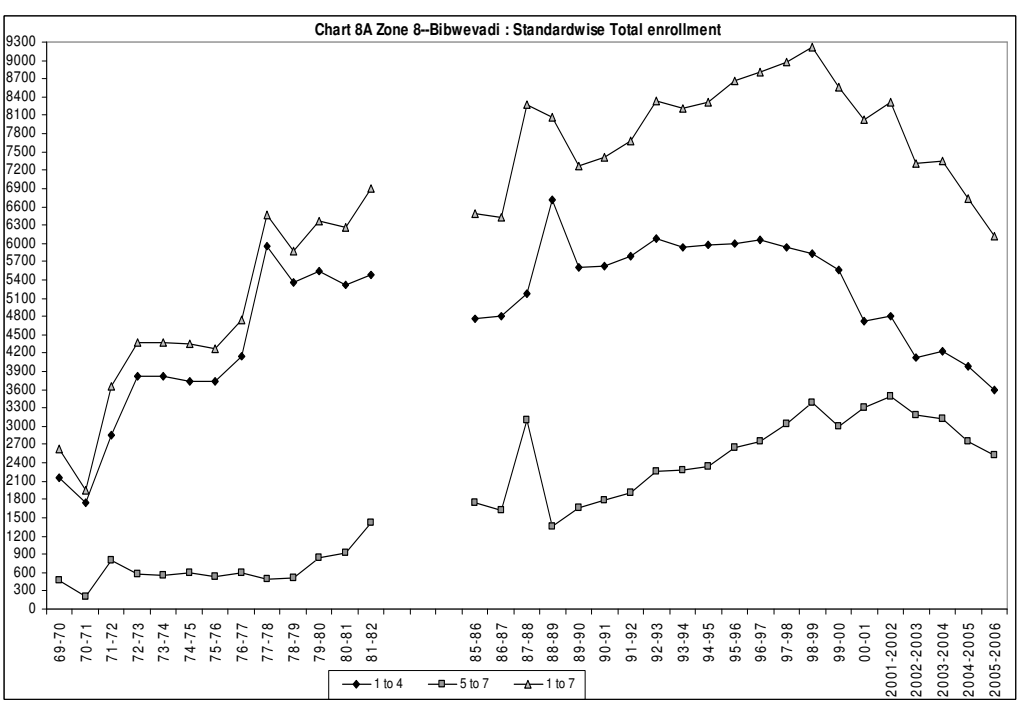
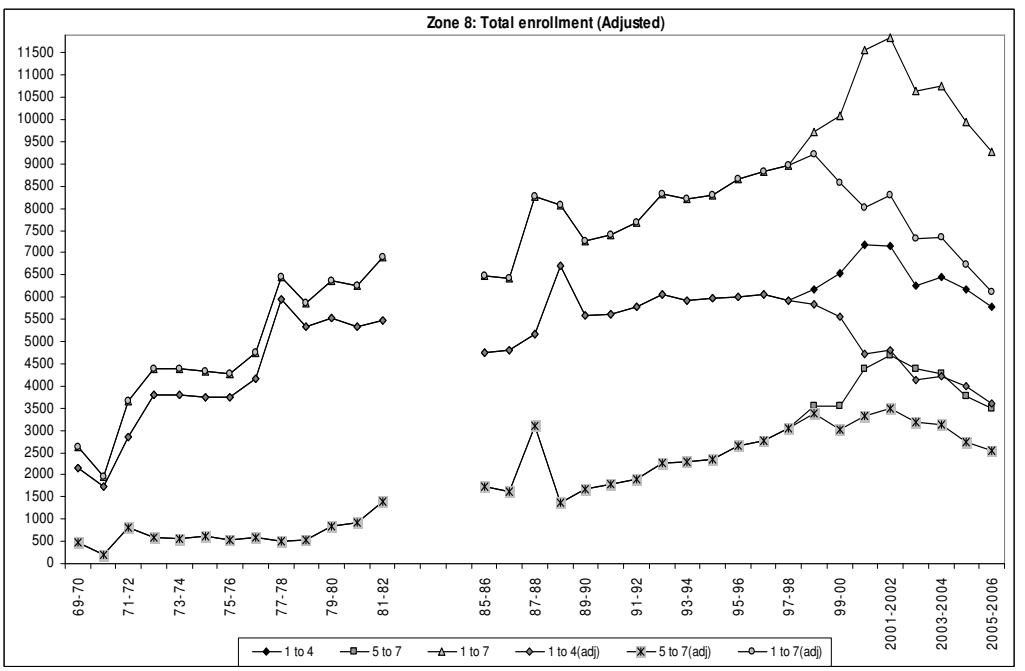
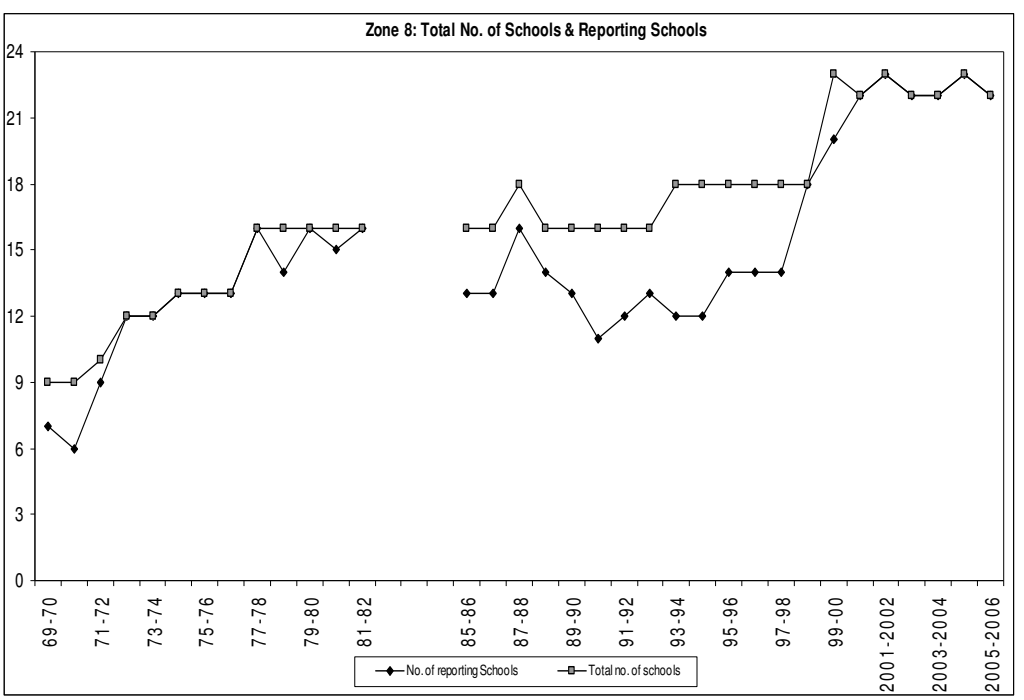
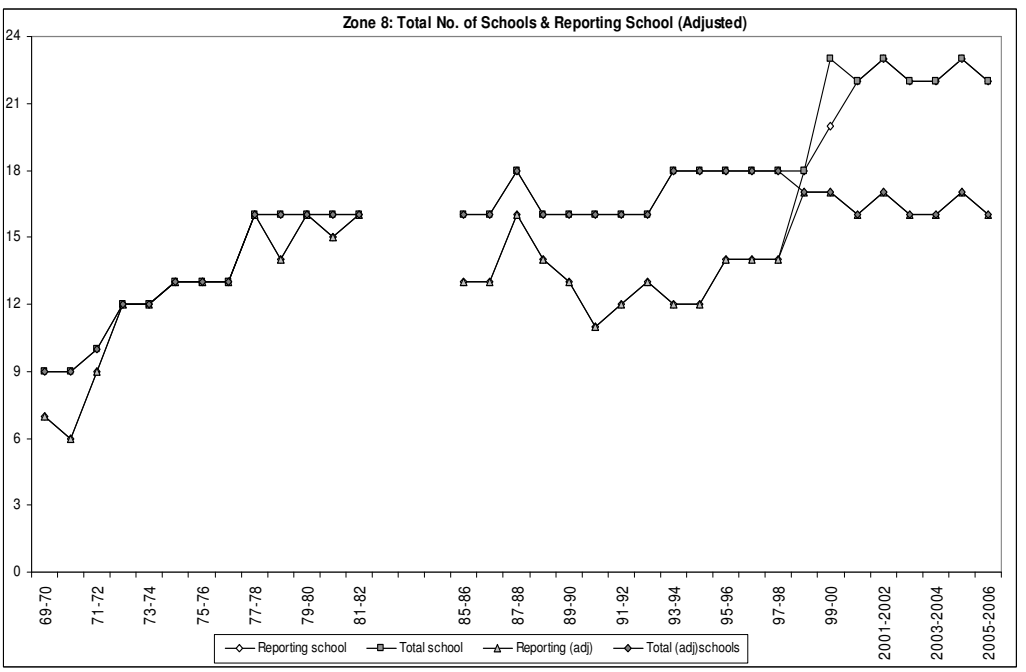


Chart 8A Zone 8--Bibwevadi : Standardwise Total enrollment
9300
9000
8700
8400
8100
7800
7500
7200
6900
6600
6300
6000
5700
5400
5100
4800
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1 to 4
5 to 7
1 to 7


Zone 8: Total enrollment (Adjusted)
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 to 4
5 to 7
1 to 7
1 to 4(adj)
5 to 7(adj)
1 to 7(adj)


Zone 8: Total No. of Schools & Reporting Schools
24
21
18
15
12
9
6
3
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
No. of reporting Schools
Total no. of schools


Zone 8: Total No. of Schools & Reporting School (Adjusted)
24
21
18
15
12
9
6
3
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Reporting school
Total school
Reporting (adj)
Total (adj)schools

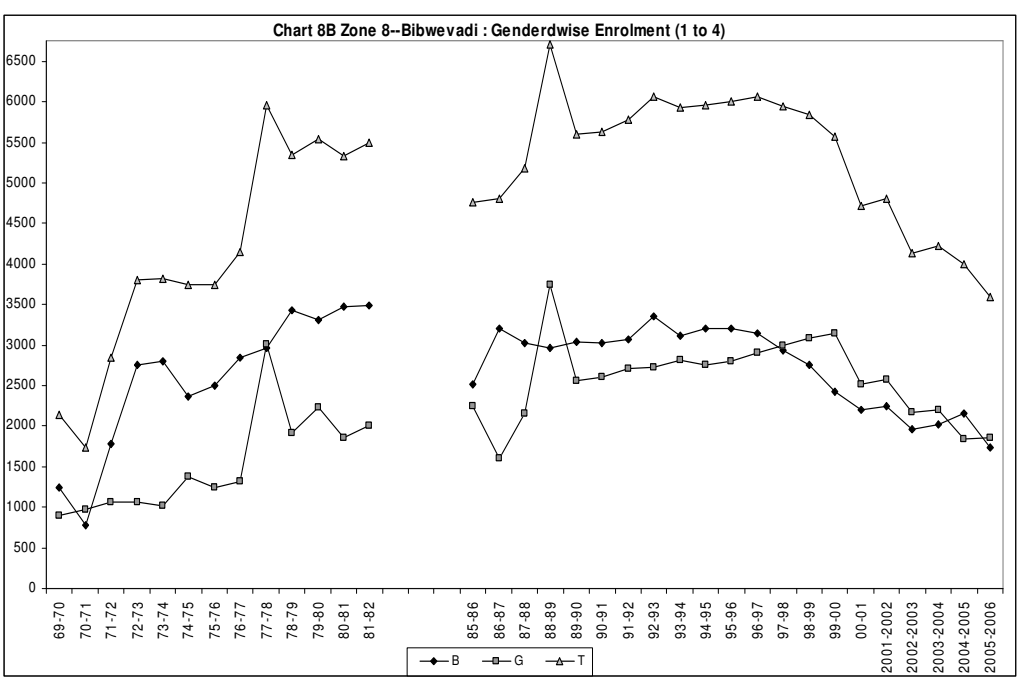
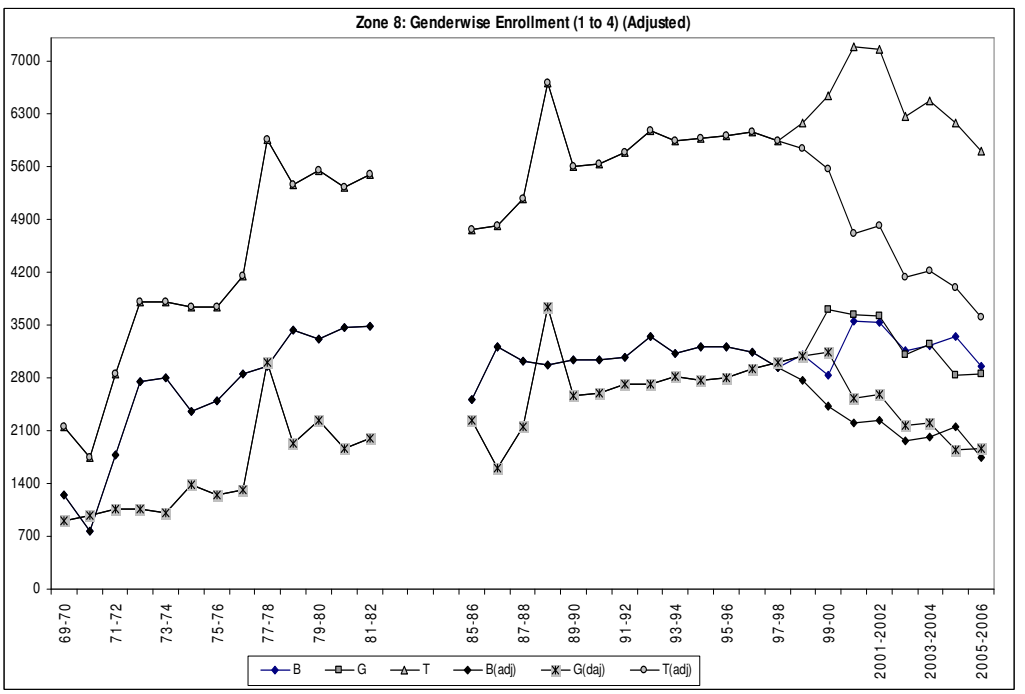


Chart 8B Zone 8--Bibwevadi : Genderdwise Enrolment (1 to 4)
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T


Zone 8: Genderwise Enrollment (1 to 4) (Adjusted)
7000
6300
5600
4900
4200
3500
2800
2100
1400
700
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B(adj)
G(daj)
T(adj)

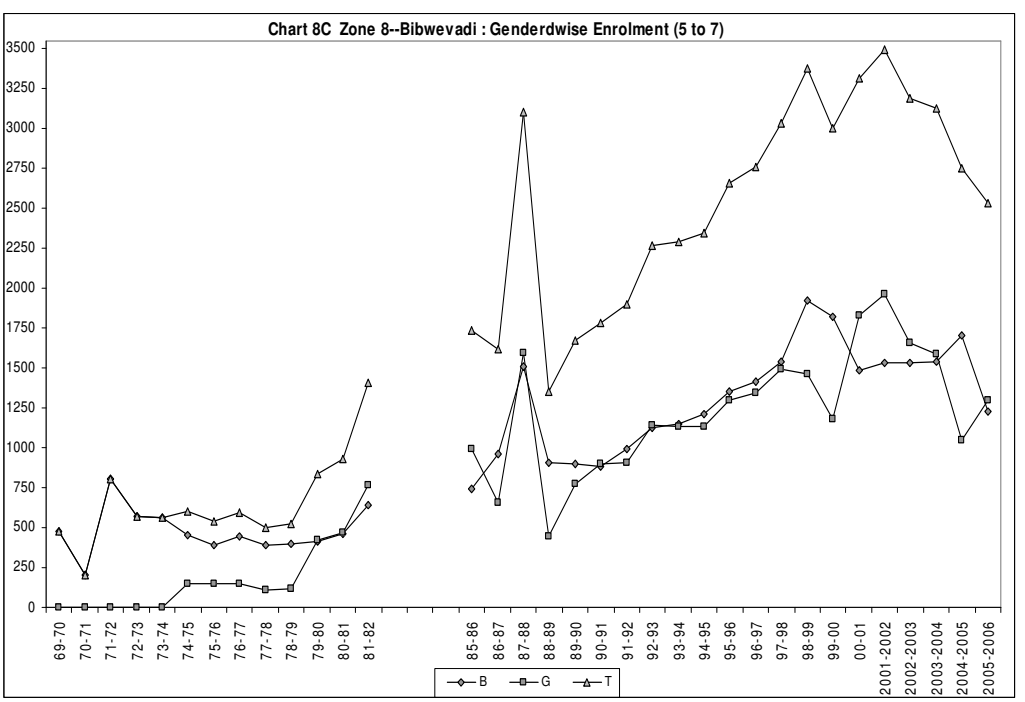
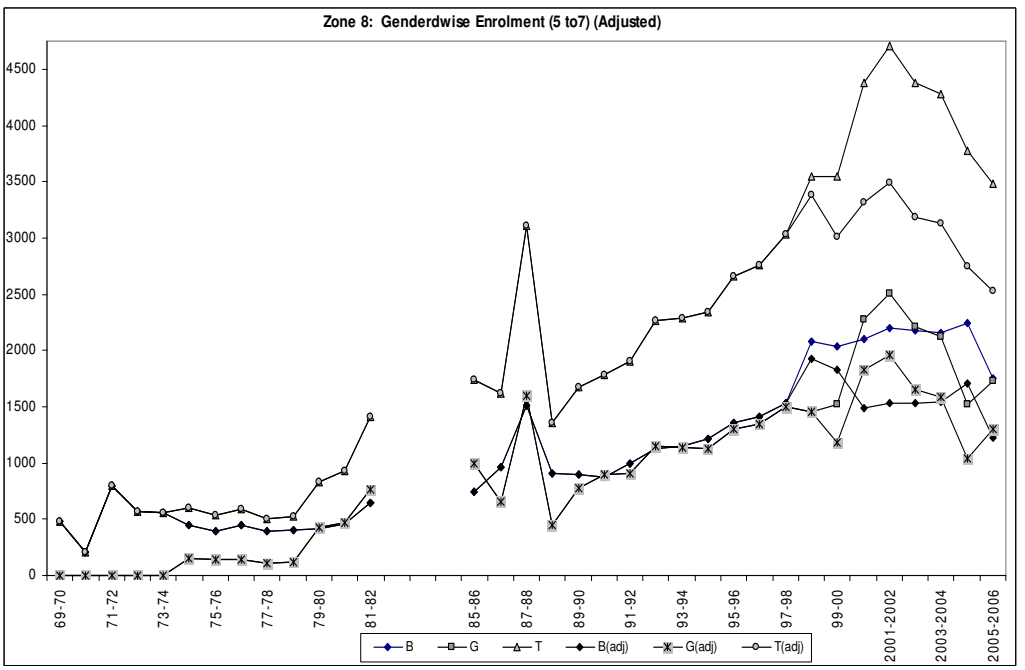


Chart 8C Zone 8--Bibwevadi : Genderdwise Enrolment (5 to 7)
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T


Zone 8: Genderdwise Enrolment (5 to7) (Adjusted)
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B(adj)
G(adj)
T(adj)

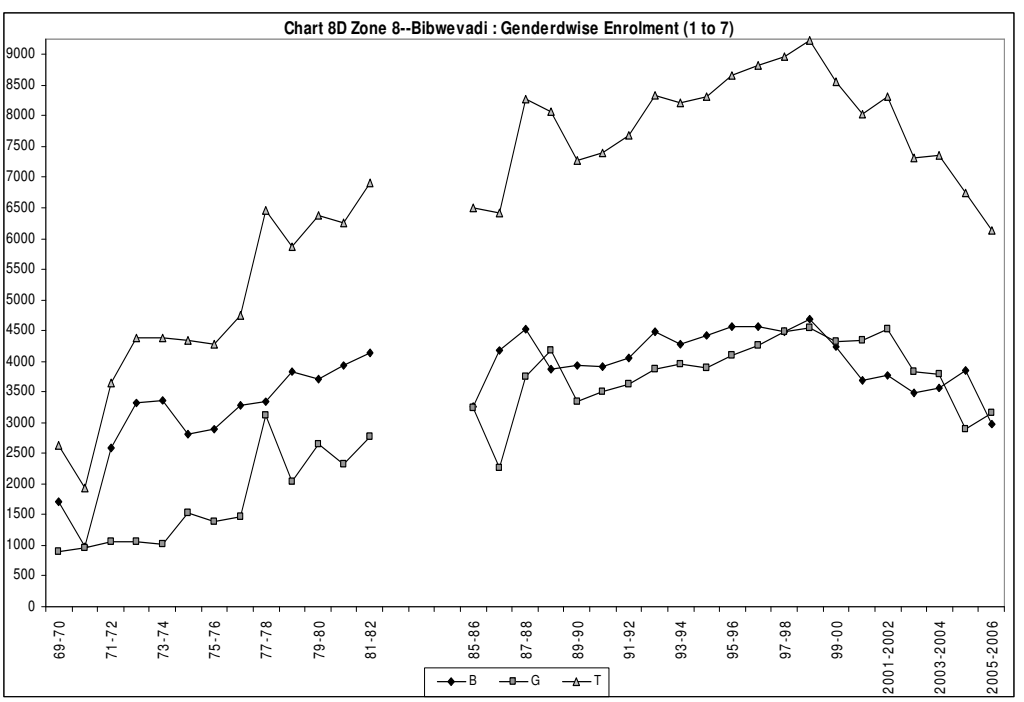
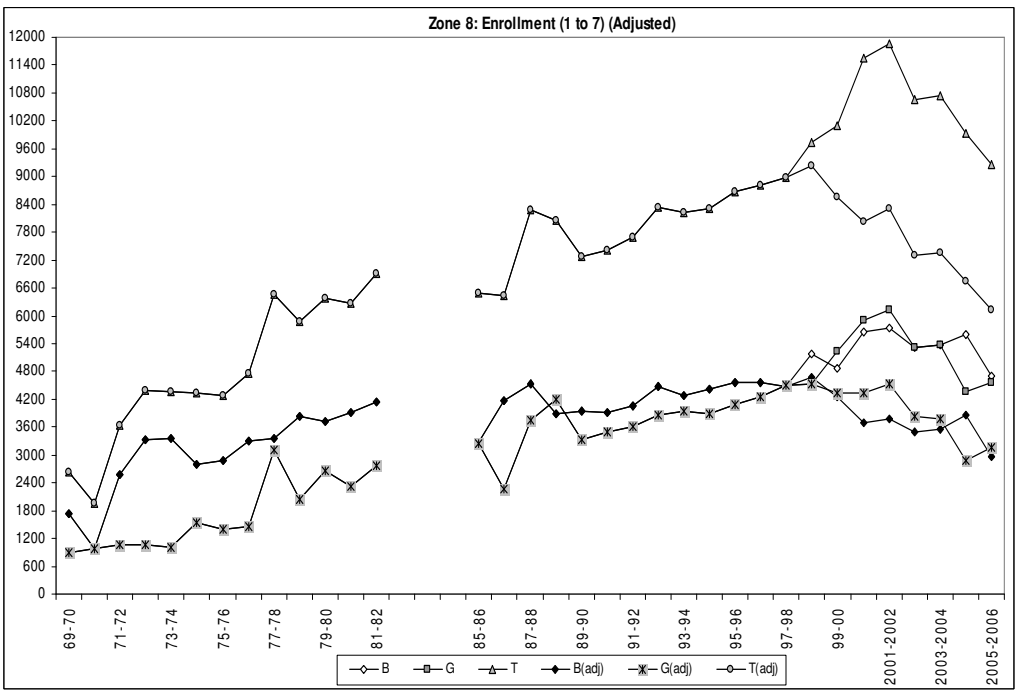
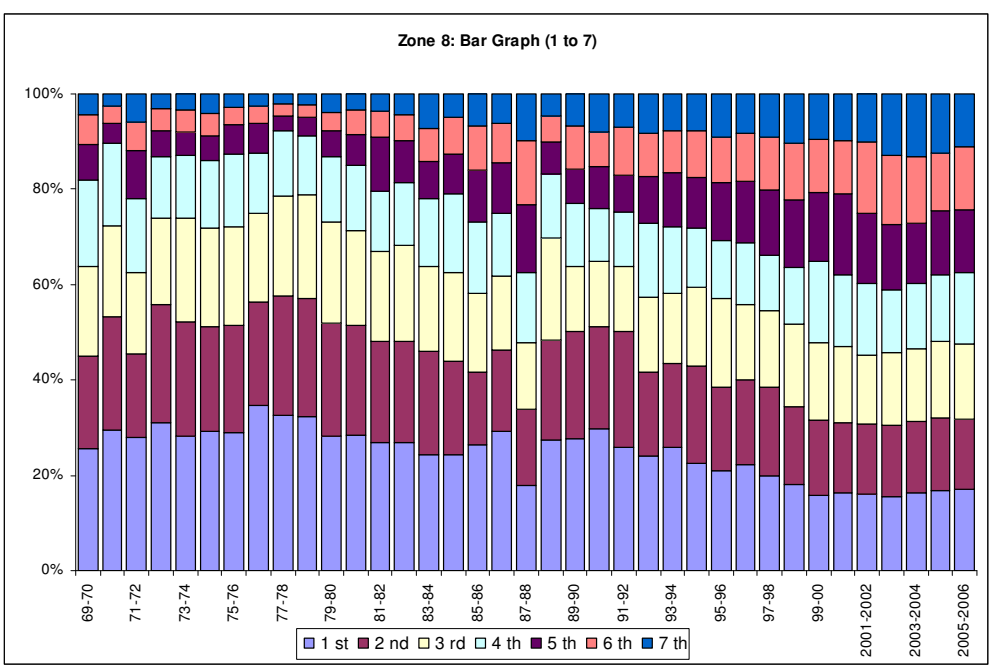
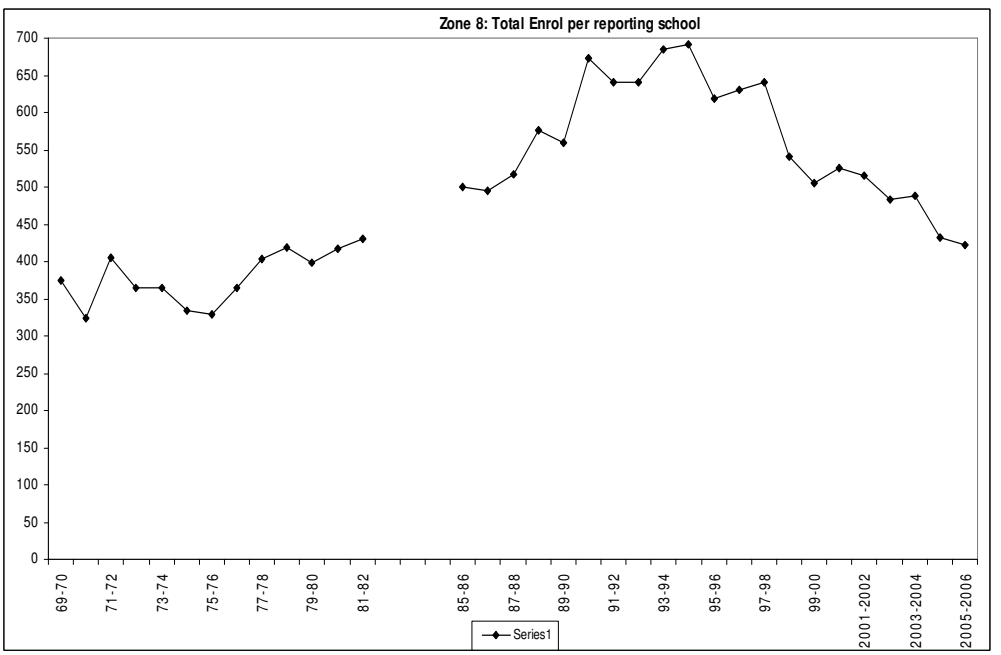
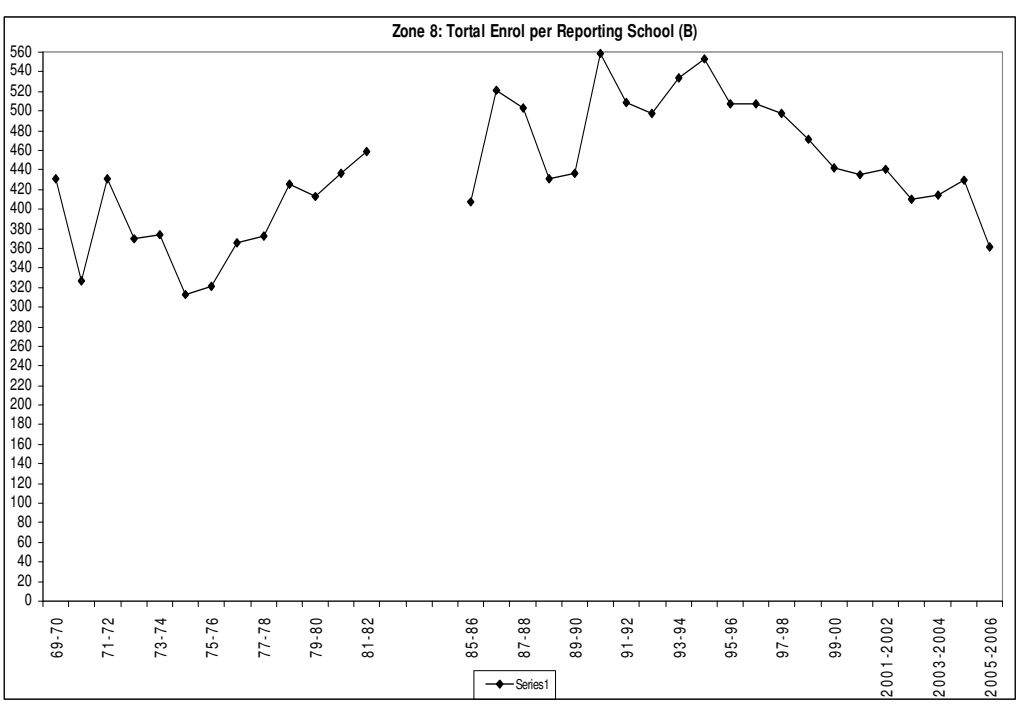


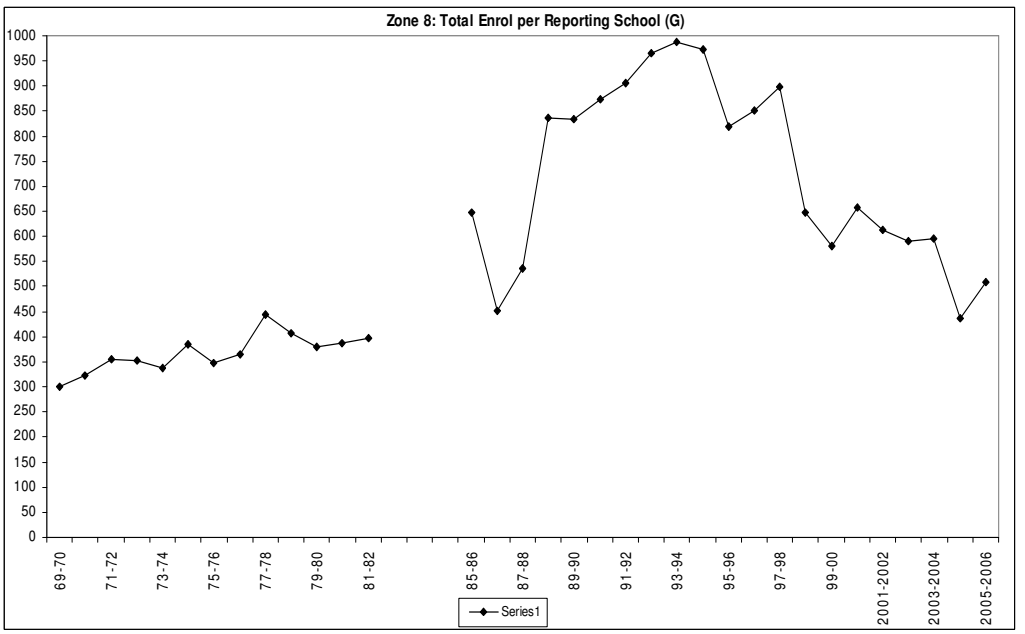
Chart 8D Zone 8--Bibwevadi : Genderdwise Enrolment (1 to 7)
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T

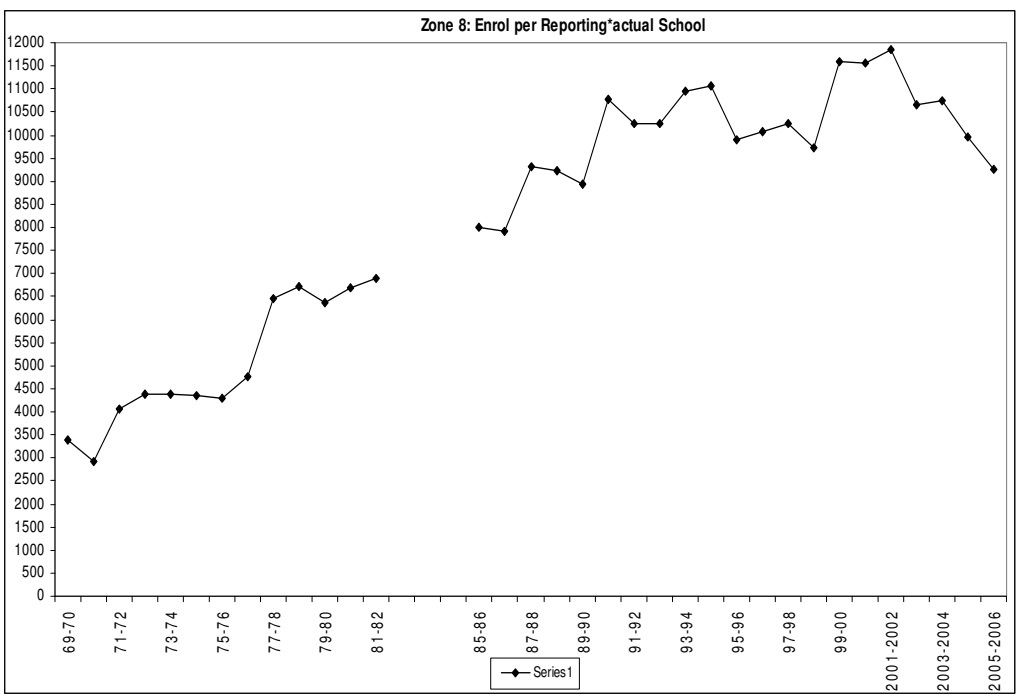

Zone 8: Enrollment (1 to 7) (Adjusted)
12000
11400
10800
10200
9600
9000
8400
7800
7200
6600
6000
5400
4800
4200
3600
3000
2400
1800
1200
600
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
T
B(adj)
G(adj)
T(adj)

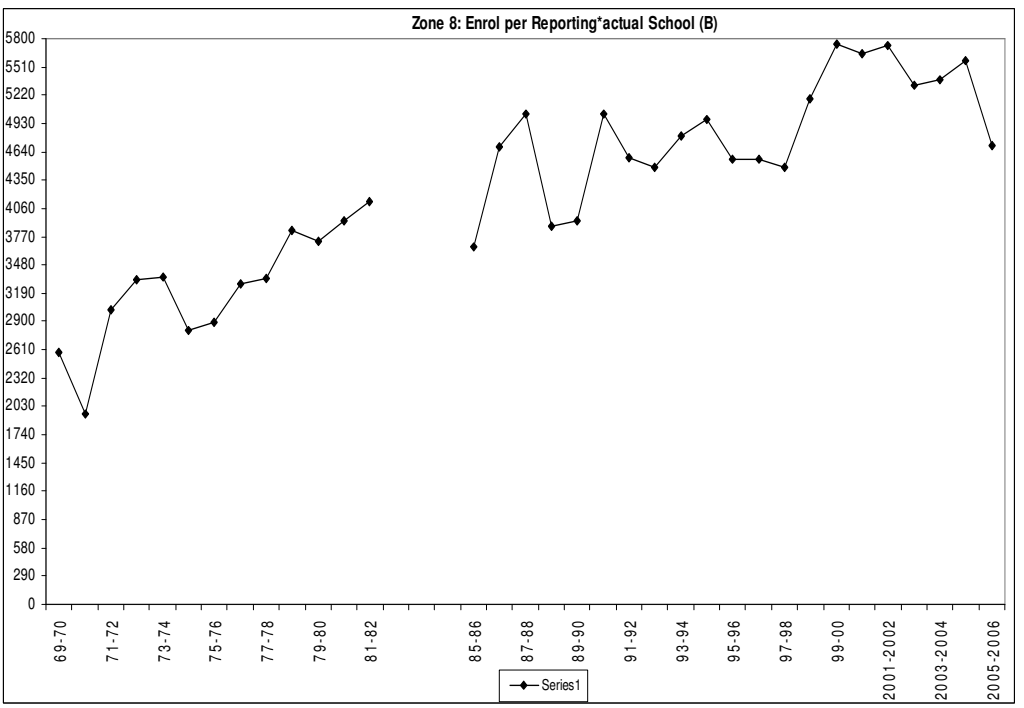

Zone 8: Bar Graph (1 to 7)
100%
80%
60%
40%
20%
0%
69-70
71-72
73-74
75-76
77-78
79-80
81-82
83-84
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 st
2 nd
3 rd
4 th
5 th
6 th
7 th

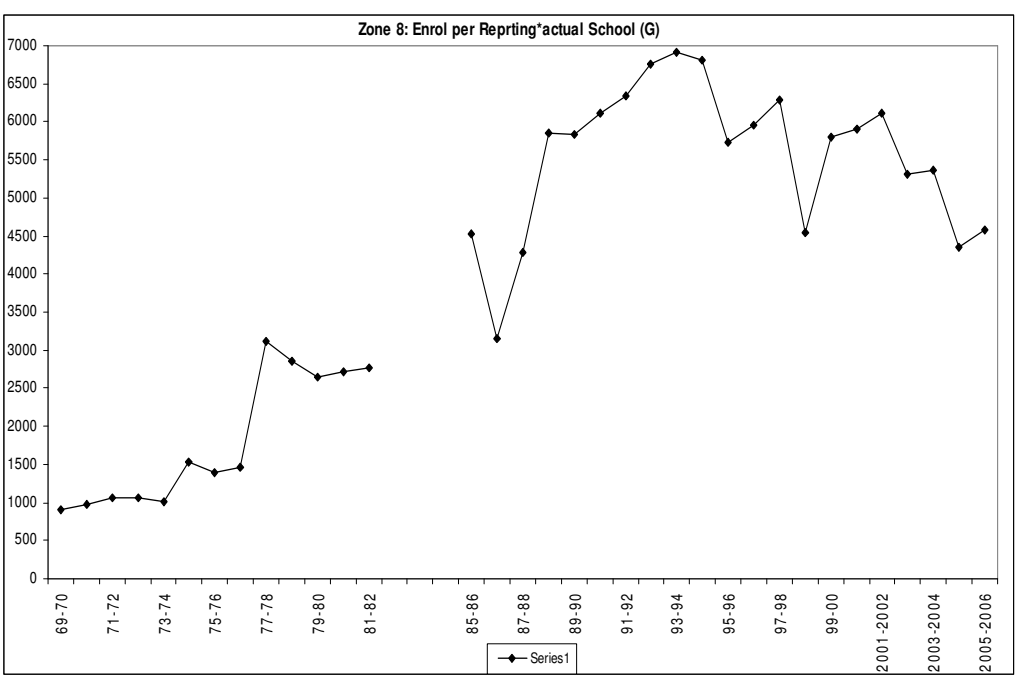

Zone 8: Total Enrol per reporting school
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

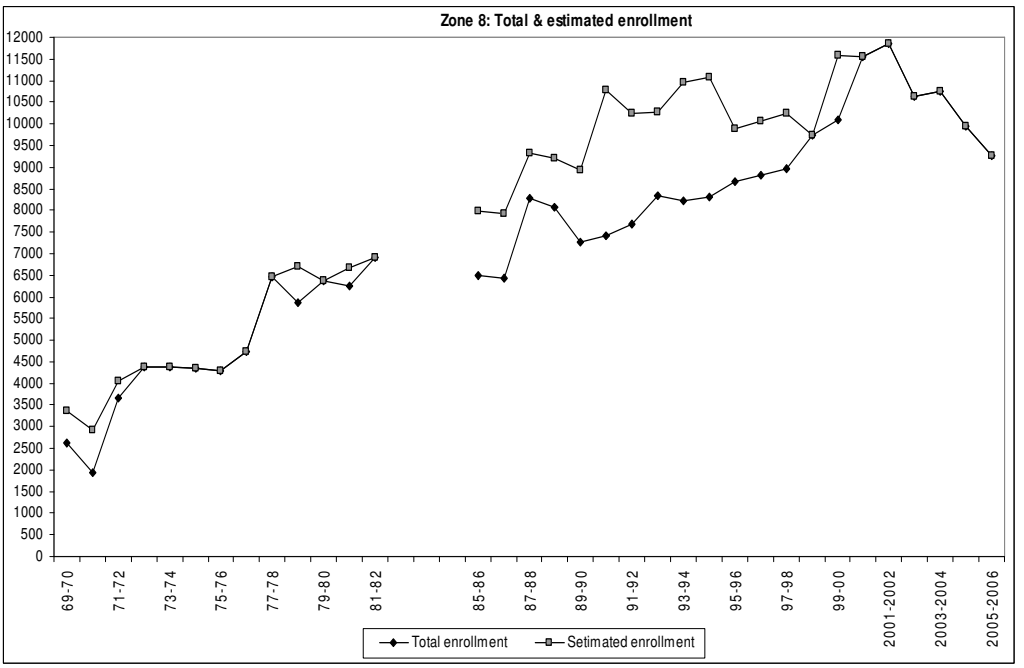

Zone 8: Tortal Enrol per Reporting School (B)
560
540
520
500
480
460
440
420
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

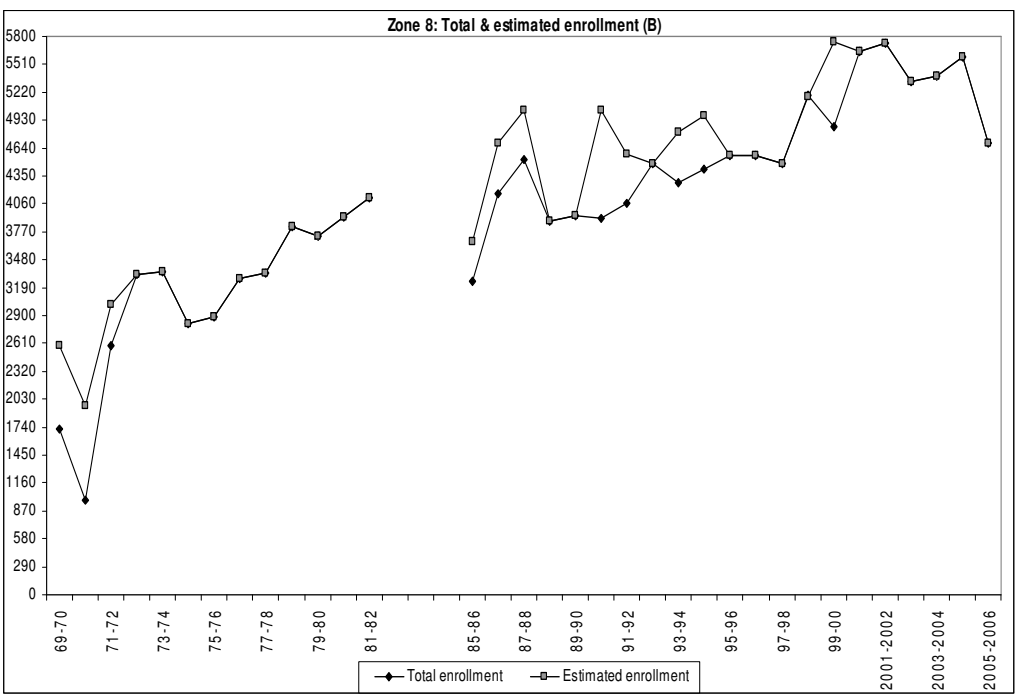

Zone 8: Total Enrol per Reporting School (G)
1000
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

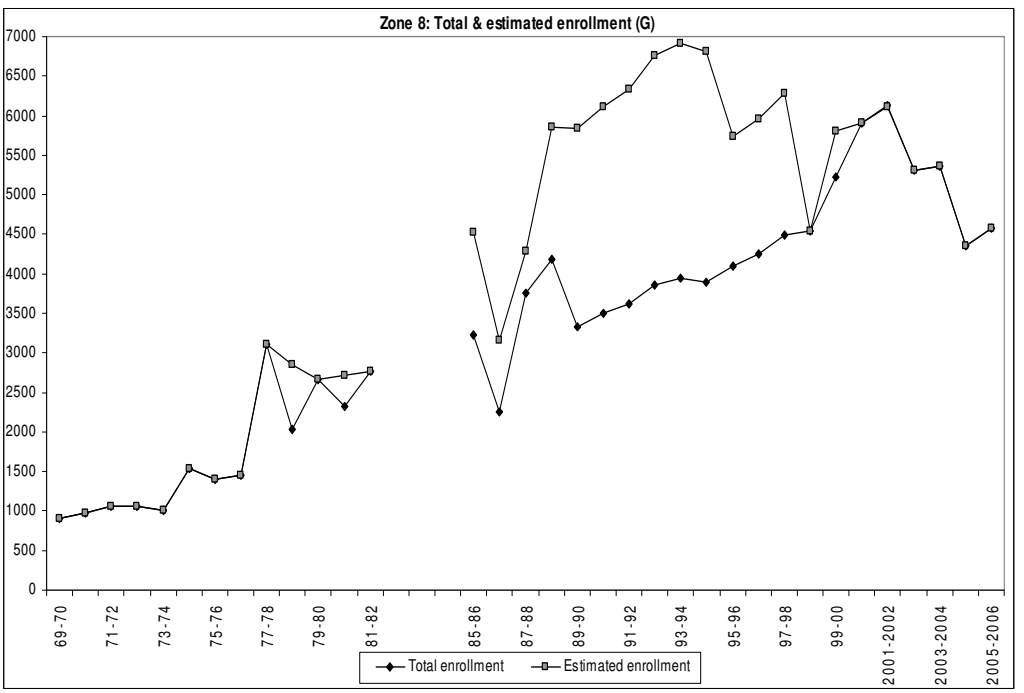

Zone 8: Enrol per Reporting*actual School
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 8: Enrol per Reporting*actual School (B)
5800
5510
5220
4930
4640
4350
4060
3770
3480
3190
2900
2610
2320
2030
1740
1450
1160
870
580
290
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 8: Enrol per Reprting*actual School (G)
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 8: Total & estimated enrollment
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Setimated enrollment


Zone 8: Total & estimated enrollment (B)
5800
5510
5220
4930
4640
4350
4060
3770
3480
3190
2900
2610
2320
2030
1740
1450
1160
870
580
290
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 8: Total & estimated enrollment (G)
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment

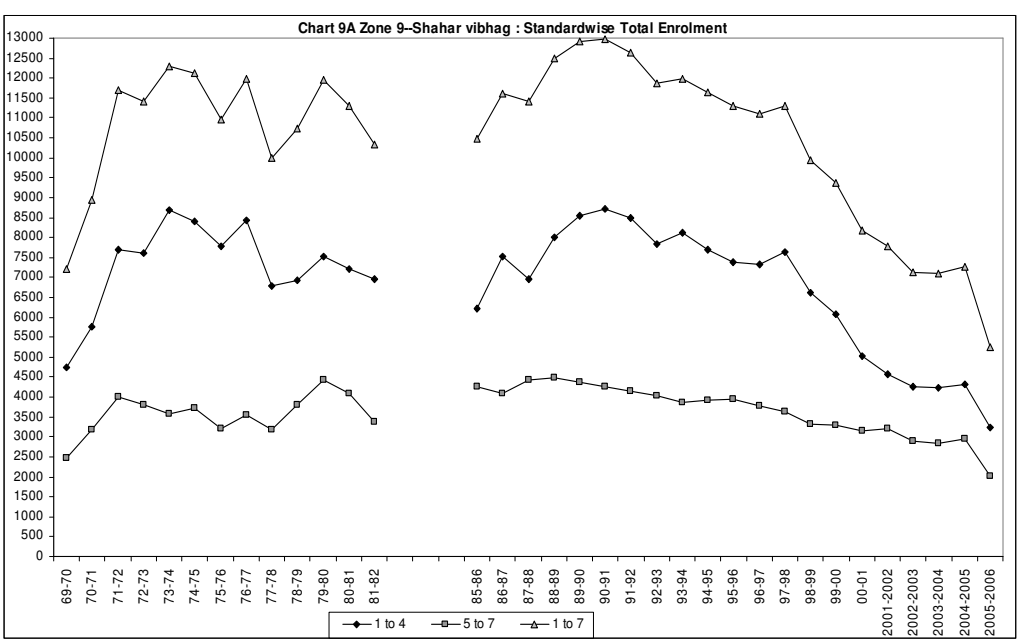
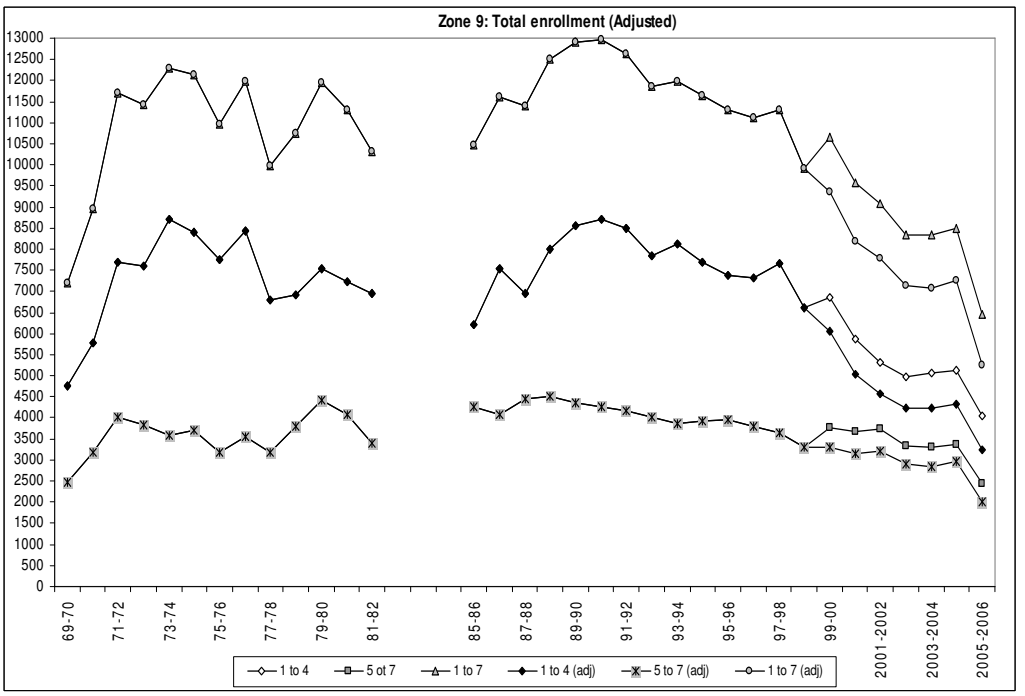
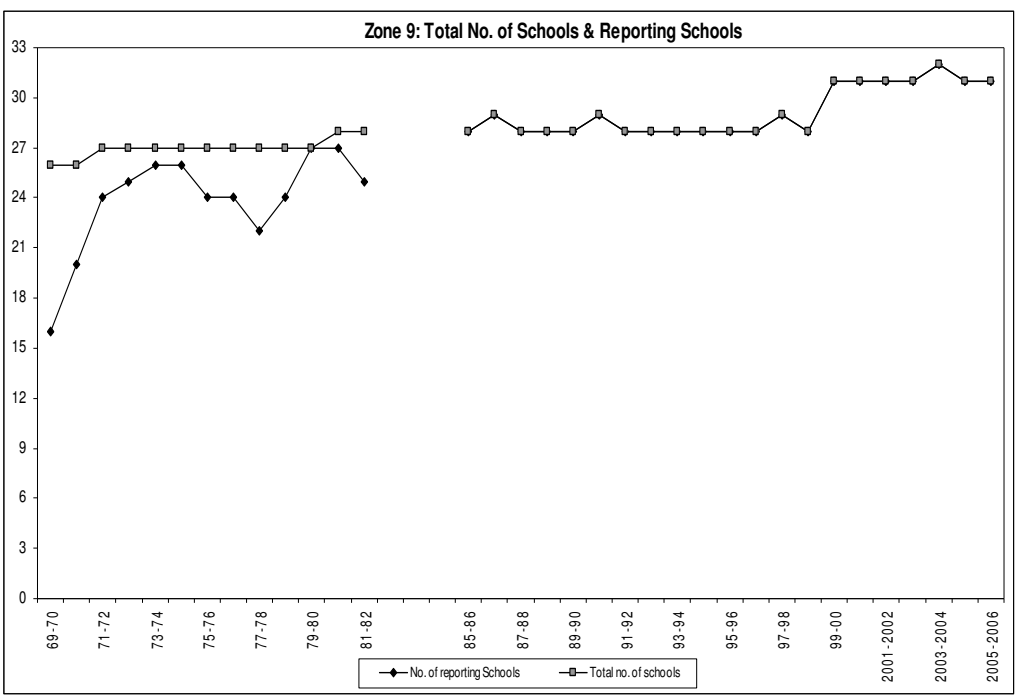
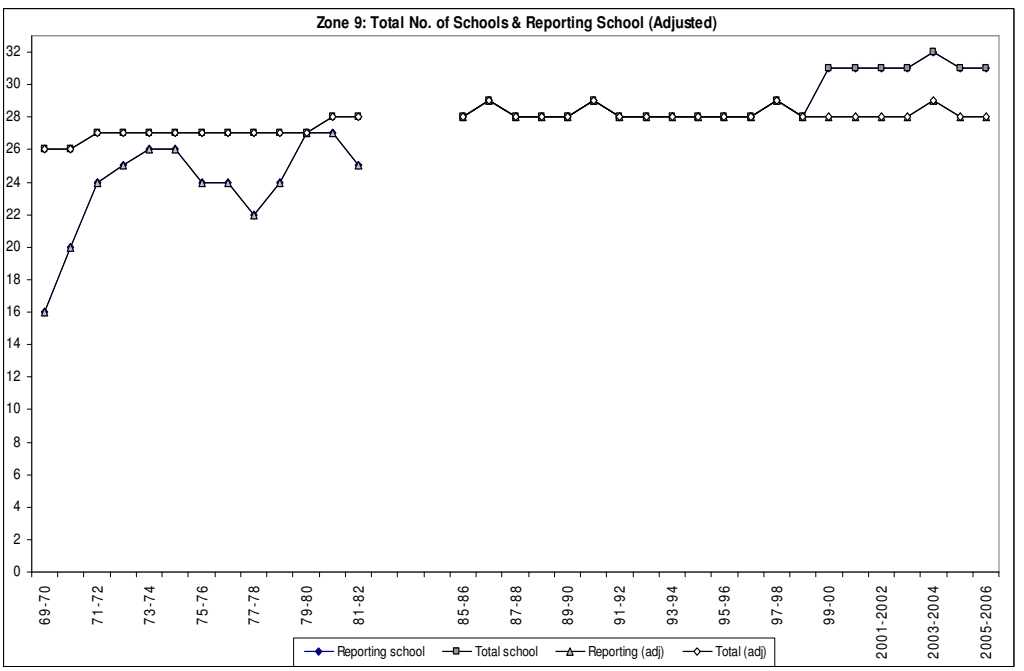


Chart 9A Zone 9–Shahar vibhag : Standardwise Total Enrolment
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1 to 4
5 to 7
1 to 7


Zone 9: Total enrollment (Adjusted)
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 to 4
5 ot 7
1 to 7
1 to 4 (adj)
5 to 7 (adj)
1 to 7 (adj)


Zone 9: Total No. of Schools & Reporting Schools
33
30
27
24
21
18
15
12
9
6
3
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
No. of reporting Schools
Total no. of schools


Zone 9: Total No. of Schools & Reporting School (Adjusted)
Reporting school
Total school
Reporting (adj)
Total (adj)

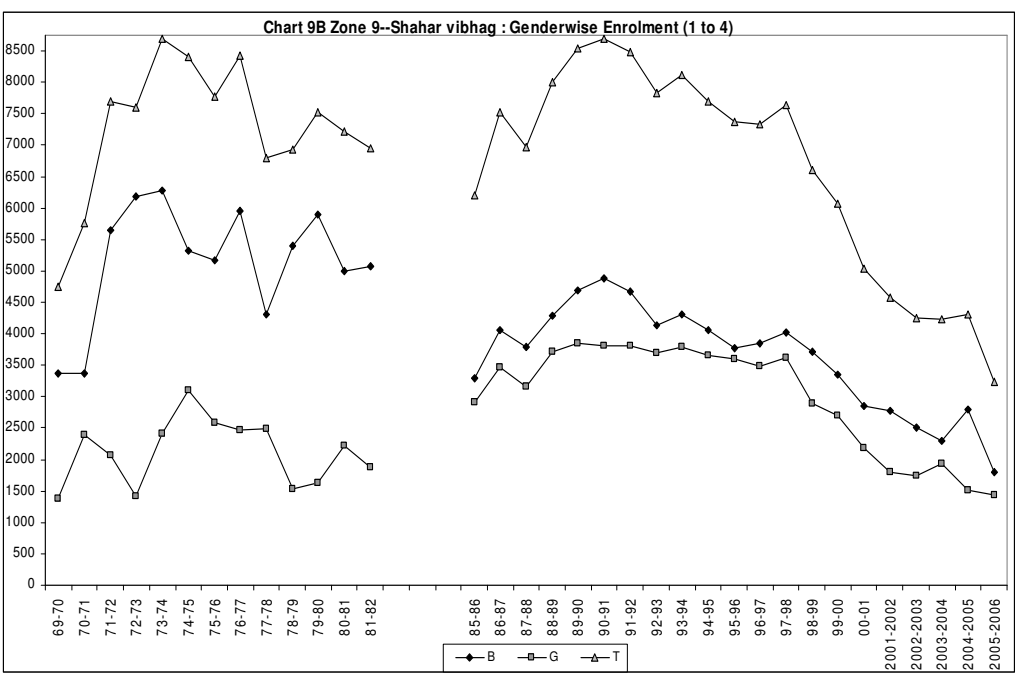
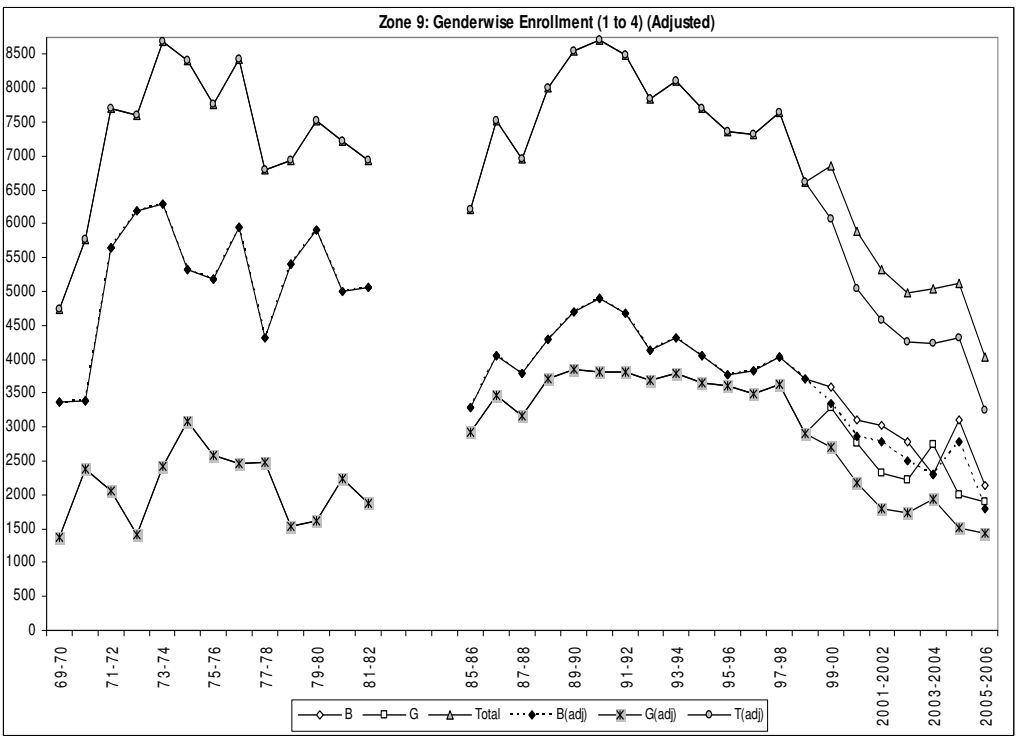


Chart 9B Zone 9--Shahar vibhag : Genderwise Enrolment (1 to 4)
B
G
T


Zone 9: Genderwise Enrollment (1 to 4) (Adjusted)
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
Total
B(adj)
G(adj)
T(adj)

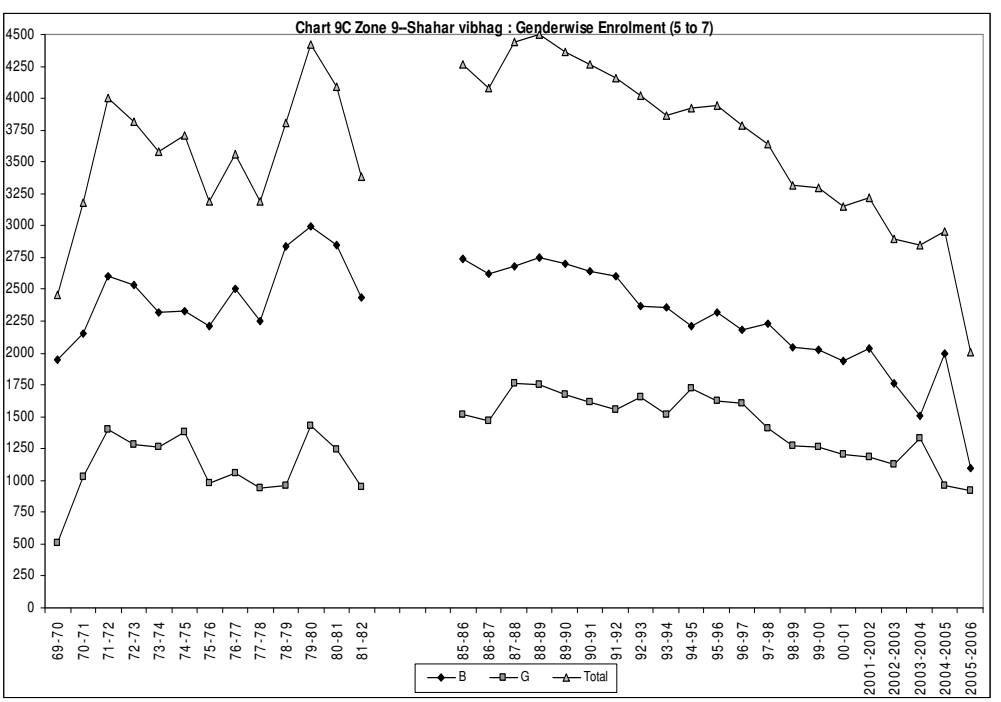
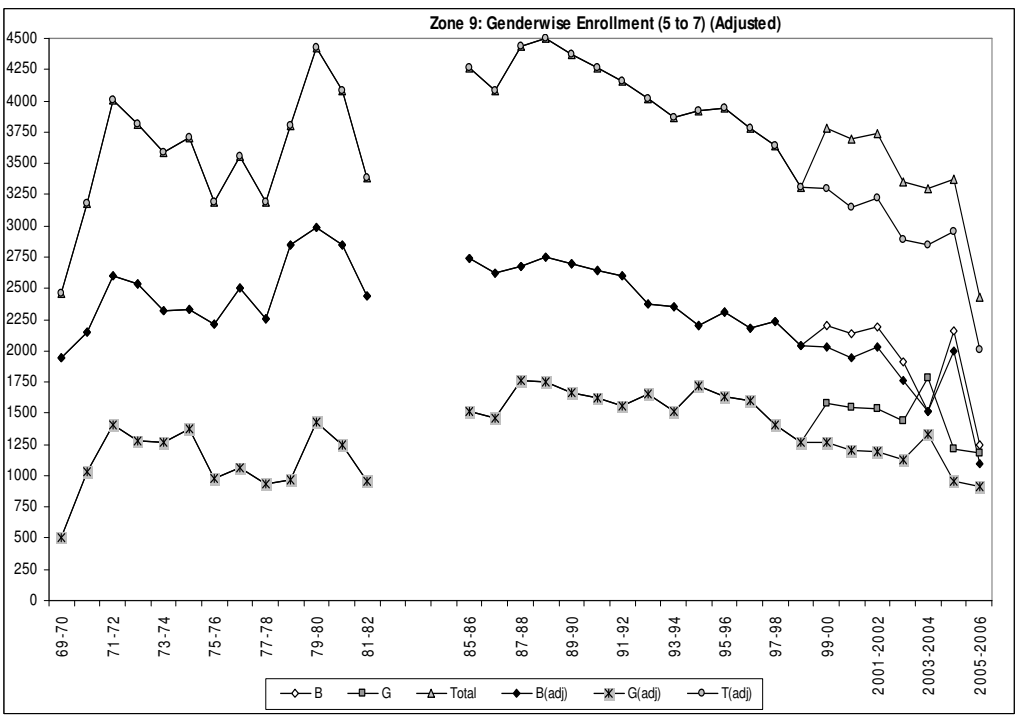


Chart 9C Zone 9–Shahar vibhag : Genderwise Enrolment (5 to 7)
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
Total


Zone 9: Genderwise Enrollment (5 to 7) (Adjusted)
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
Total
B(adj)
G(adj)
T(adj)

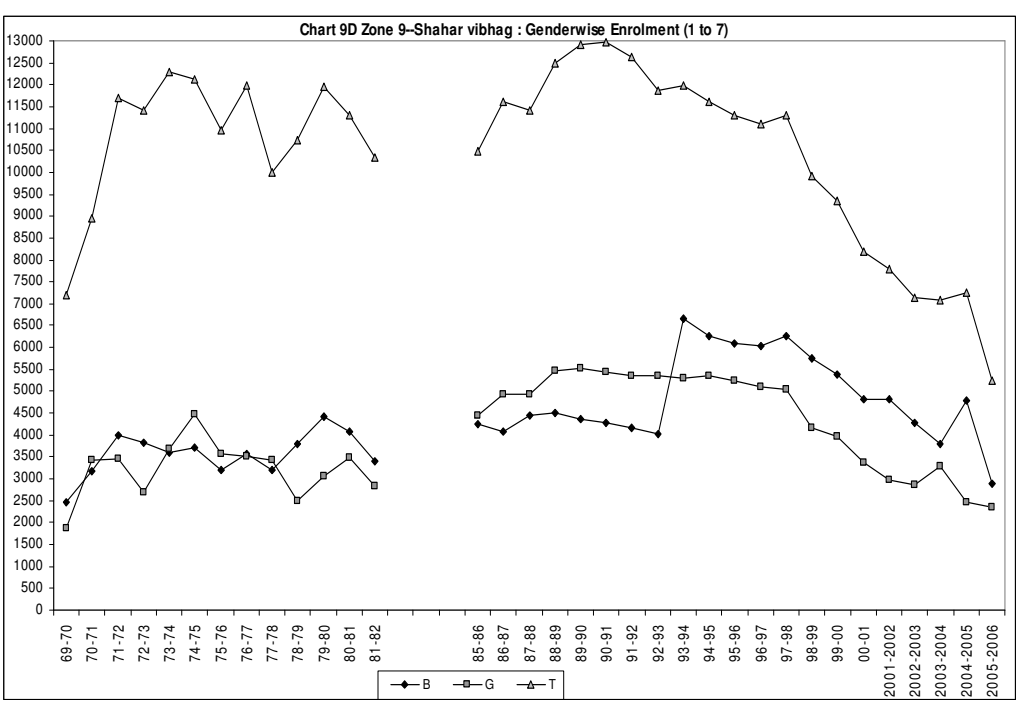
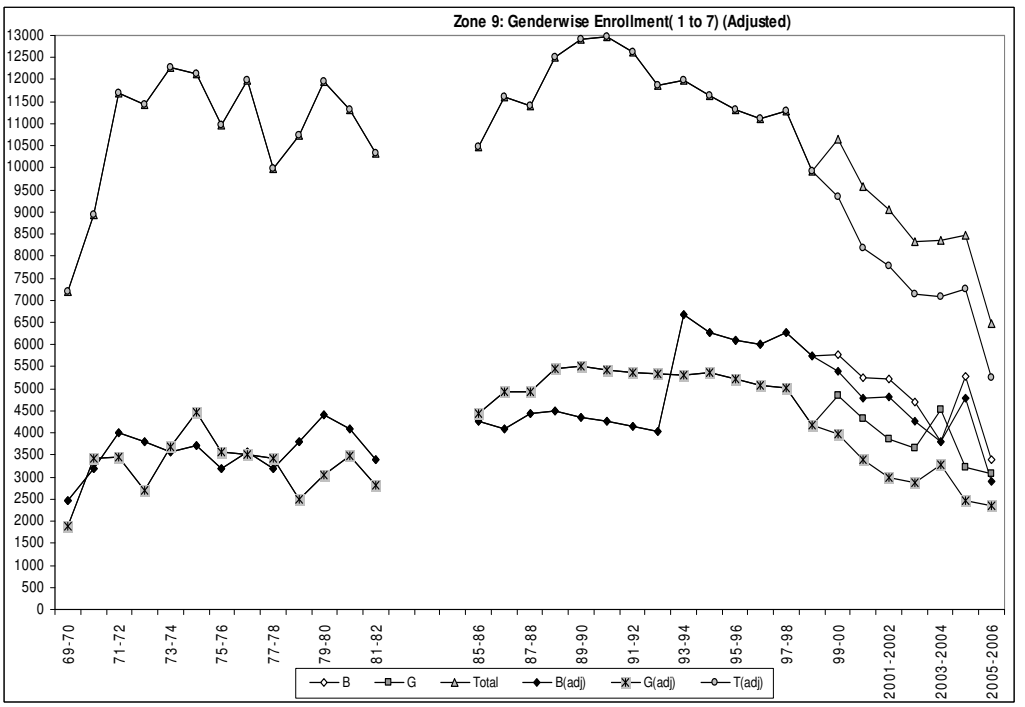
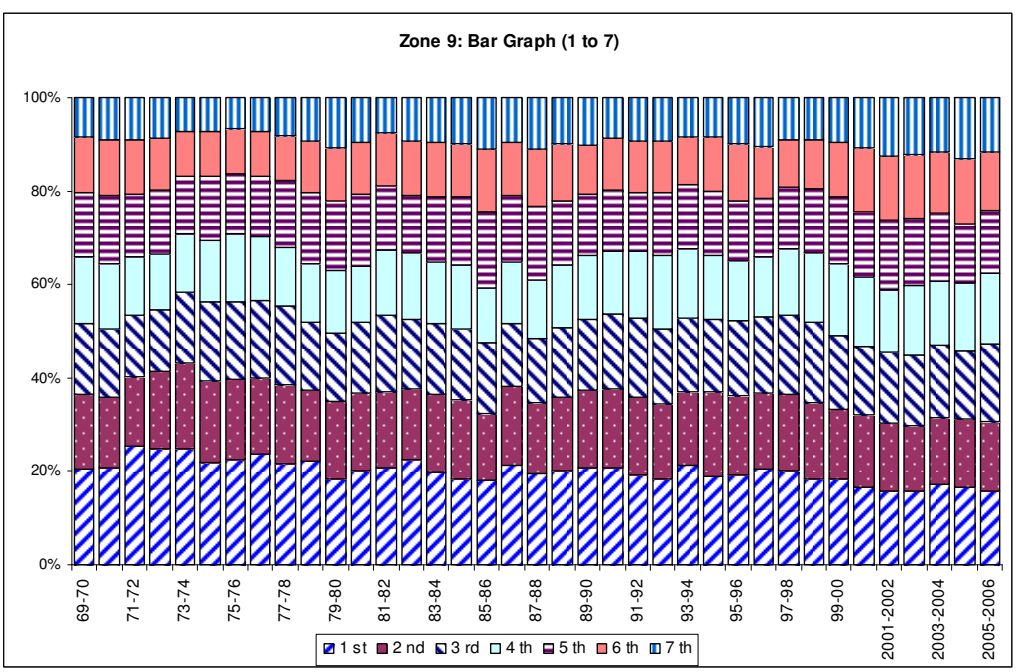
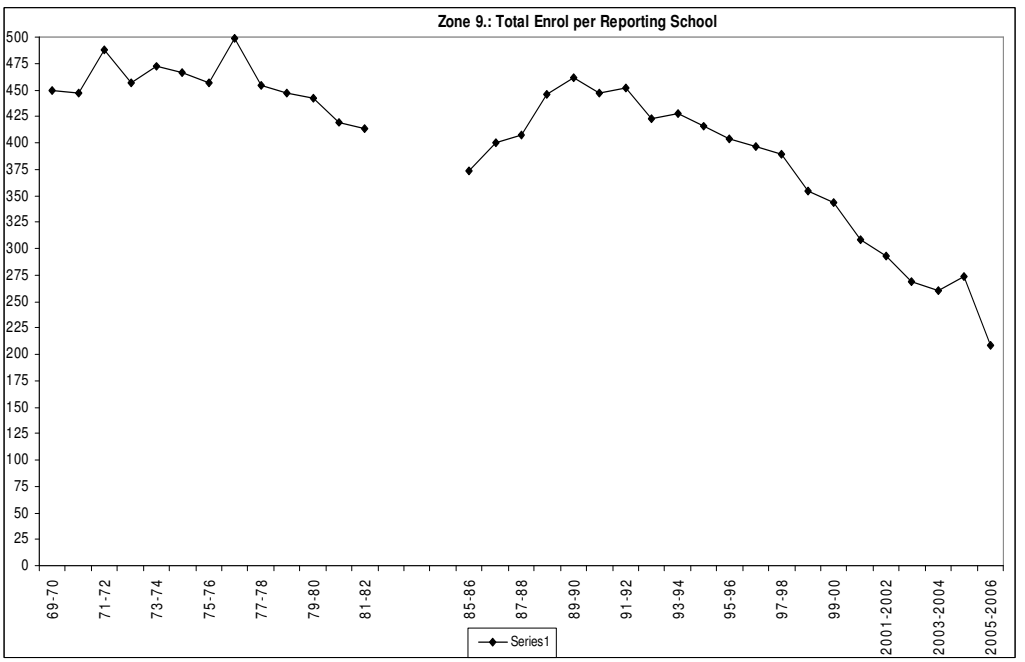
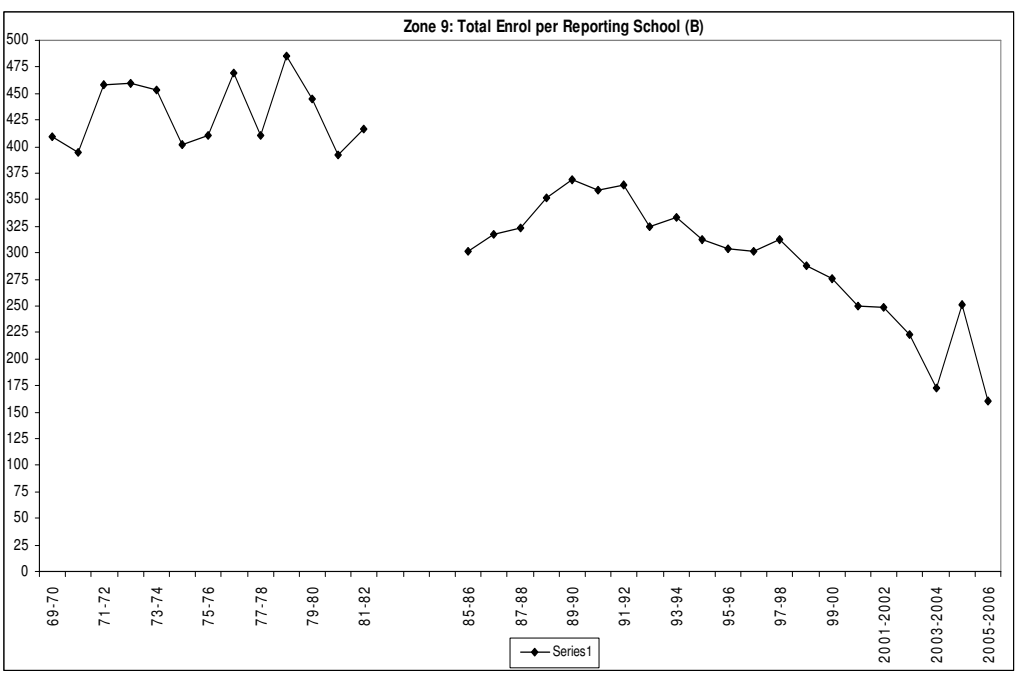


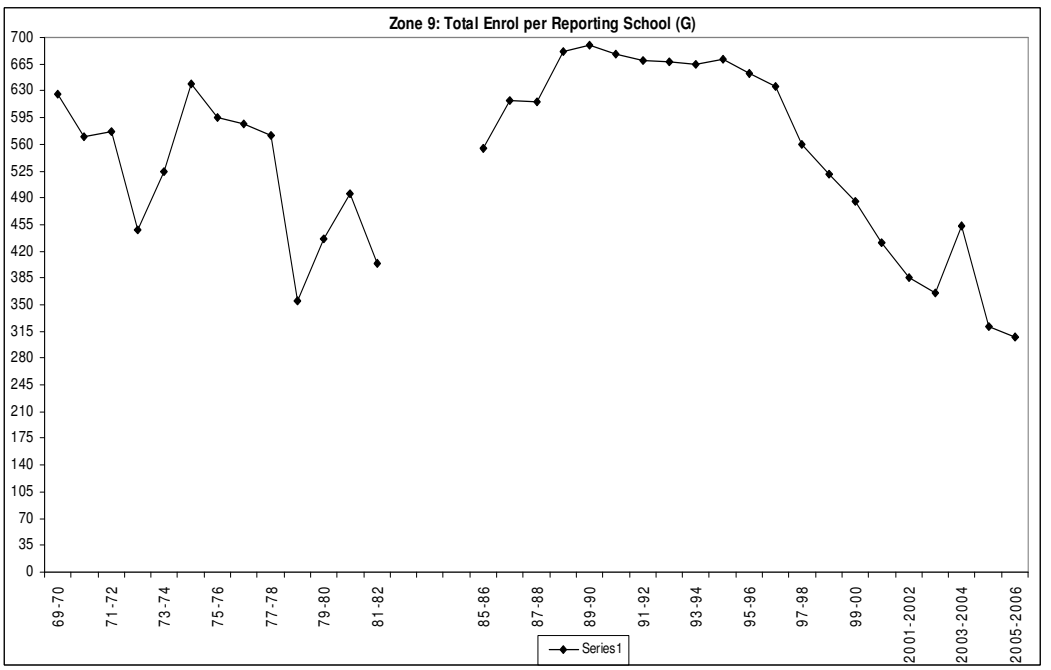
Chart 9D Zone 9–Shahar vibhag : Genderwise Enrolment (1 to 7)
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
T

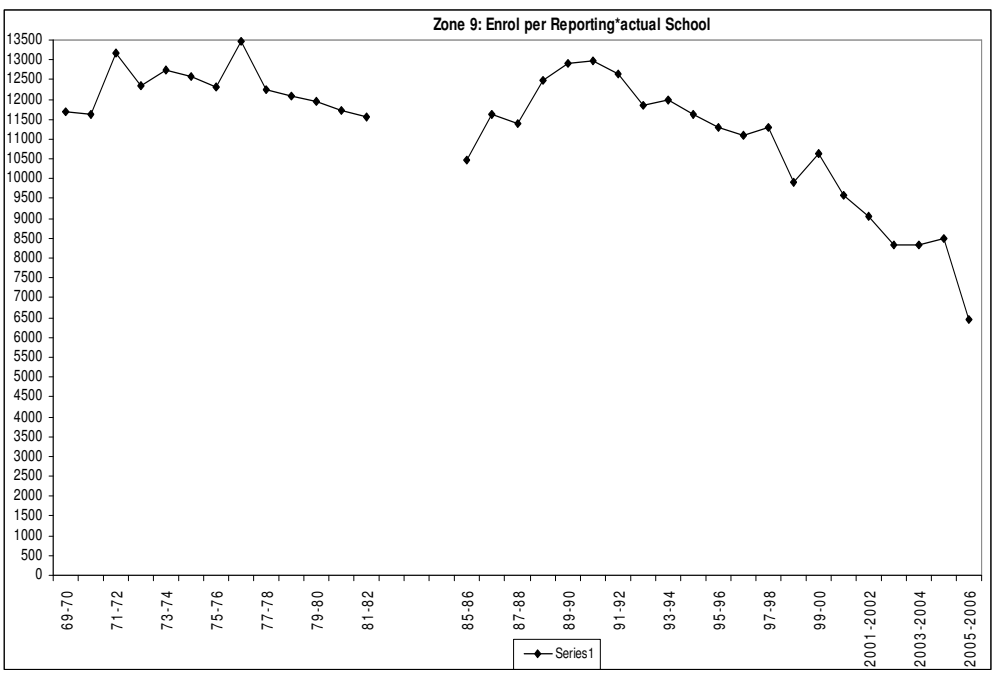

Zone 9: Genderwise Enrollment(1 to 7) (Adjusted)
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
B
G
Total
B(adj)
G(adj)
T(adj)

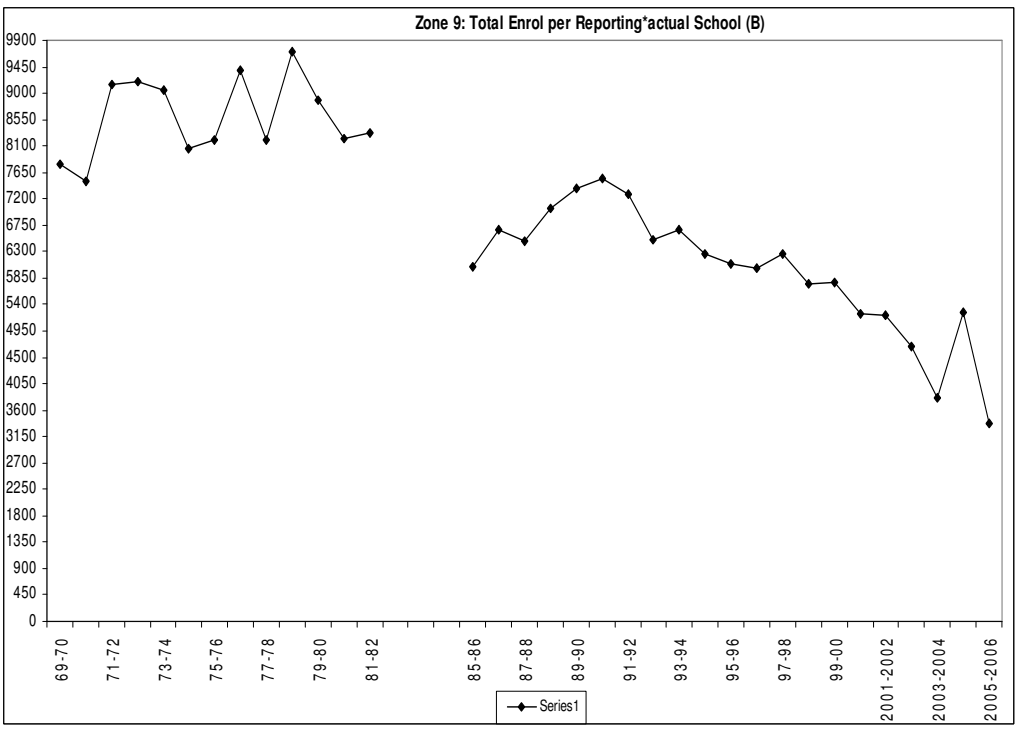

Zone 9: Bar Graph (1 to 7)
100%
80%
60%
40%
20%
0%
69-70
71-72
73-74
75-76
77-78
79-80
81-82
83-84
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 st
2 nd
3 rd
4 th
5 th
6 th
7 th

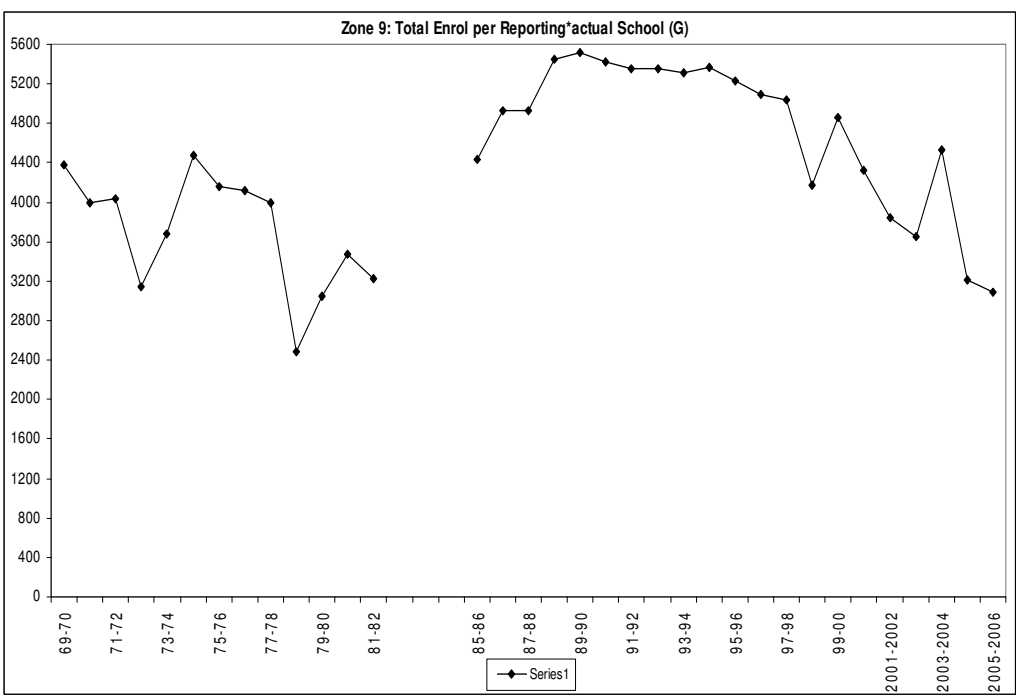

Zone 9.: Total Enrol per Reporting School
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

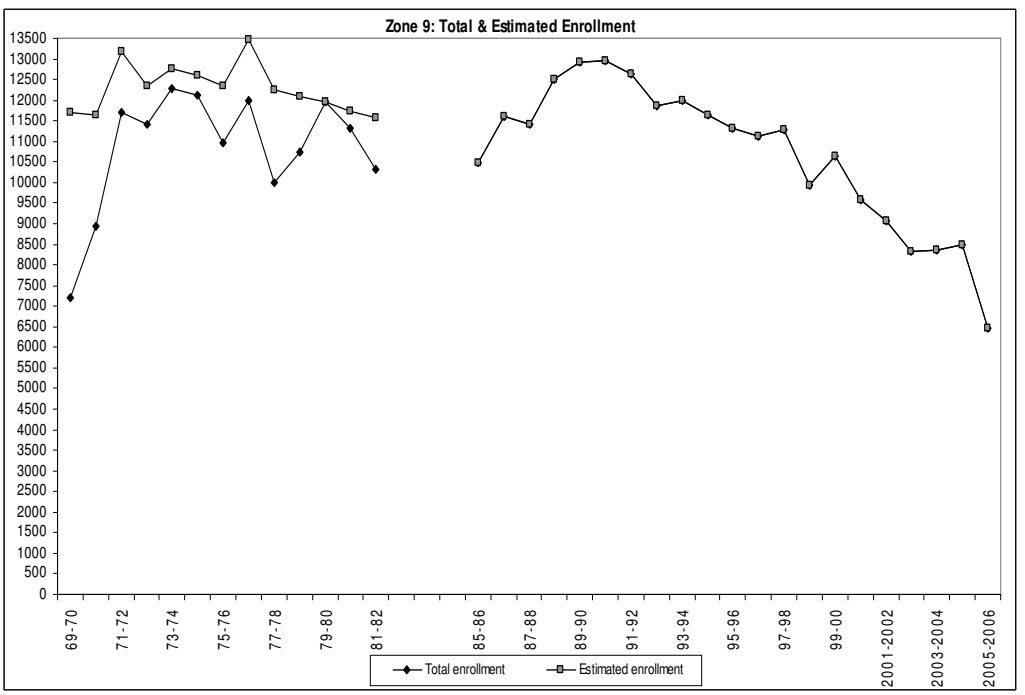

Zone 9: Total Enrol per Reporting School (B)
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

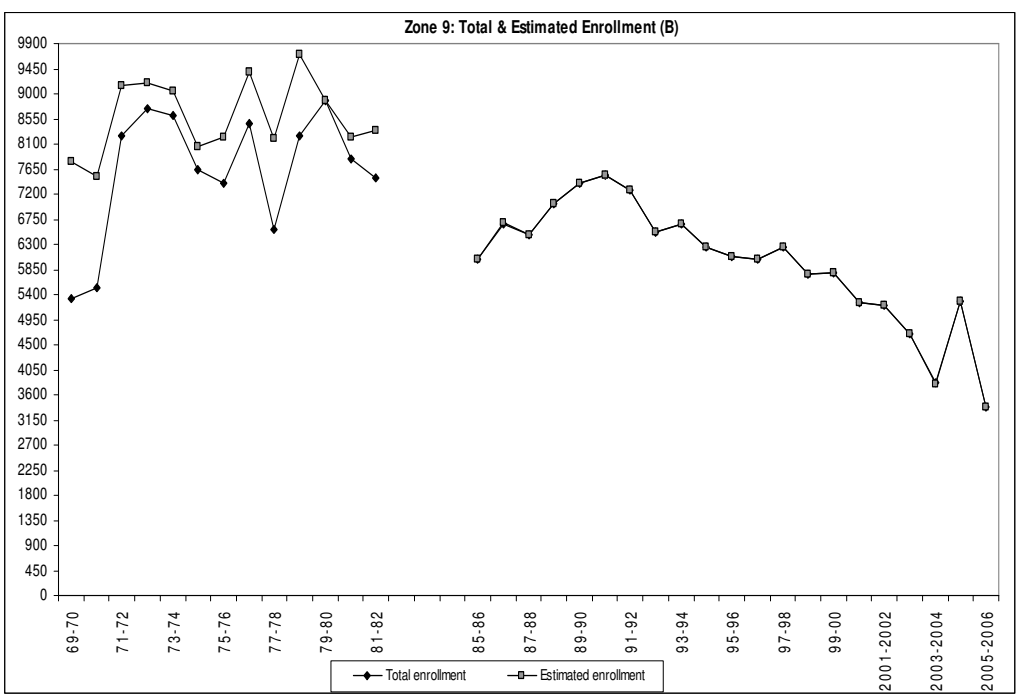

Zone 9: Total Enrol per Reporting School (G)
700
665
630
595
560
525
490
455
420
385
350
315
280
245
210
175
140
105
70
35
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

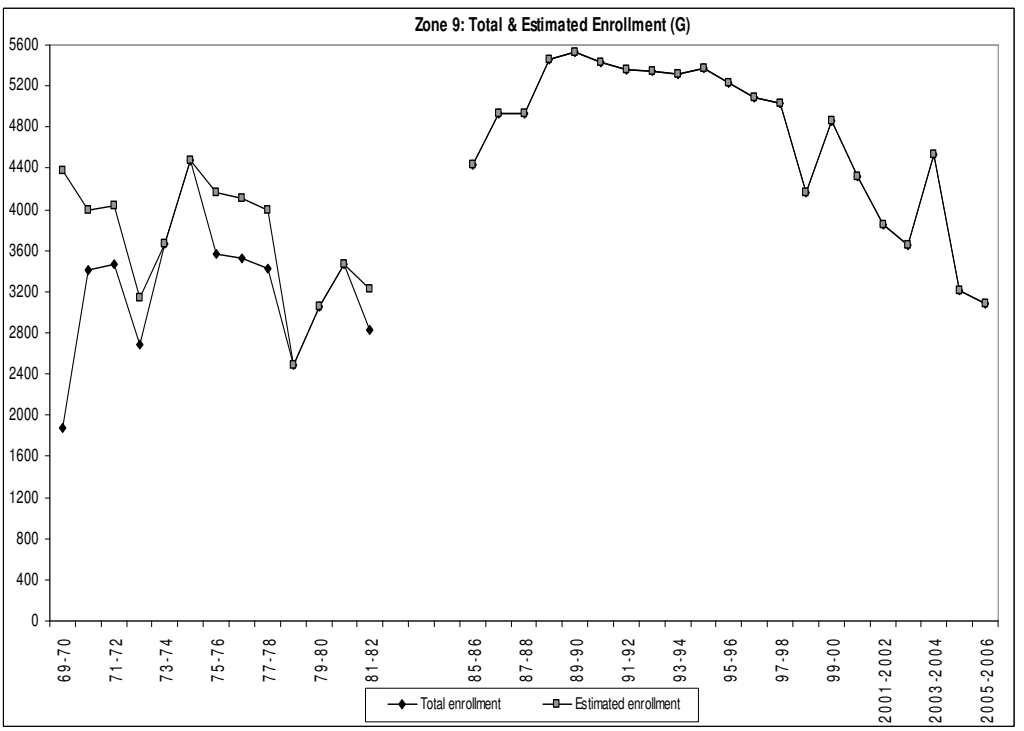

Zone 9: Enrol per Reporting*actual School
13500
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 9: Total Enrol per Reporting*actual School (B)
9900
9450
9000
8550
8100
7650
7200
6750
6300
5850
5400
4950
4500
4050
3600
3150
2700
2250
1800
1350
900
450
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 9: Total Enrol per Reporting*actual School (G)
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 9: Total & Estimated Enrollment
13500
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 9: Total & Estimated Enrollment (B)
9900
9450
9000
8550
8100
7650
7200
6750
6300
5850
5400
4950
4500
4050
3600
3150
2700
2250
1800
1350
900
450
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 9: Total & Estimated Enrollment (G)
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment

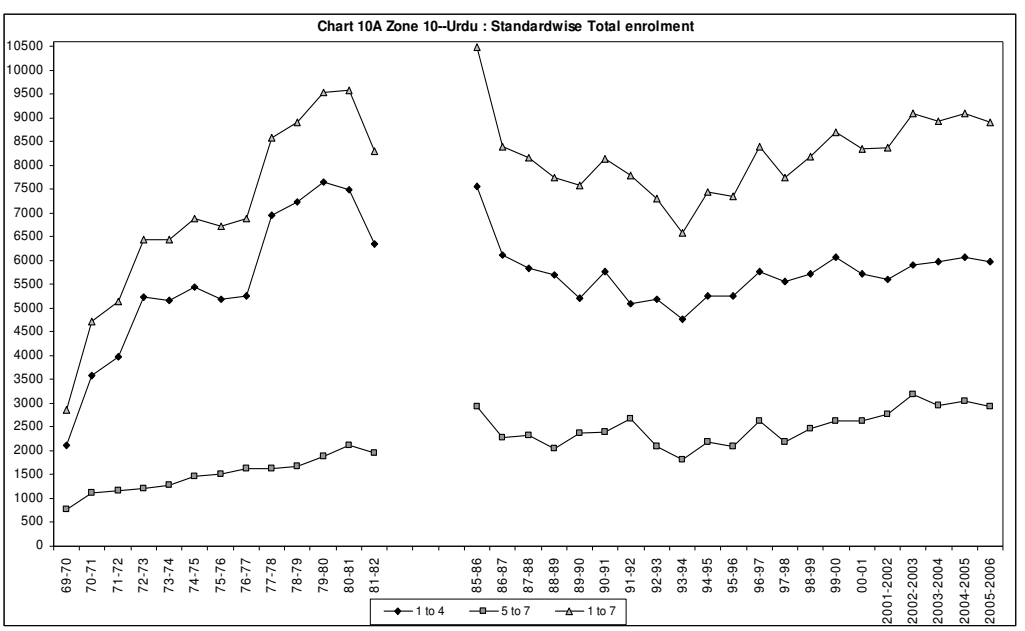
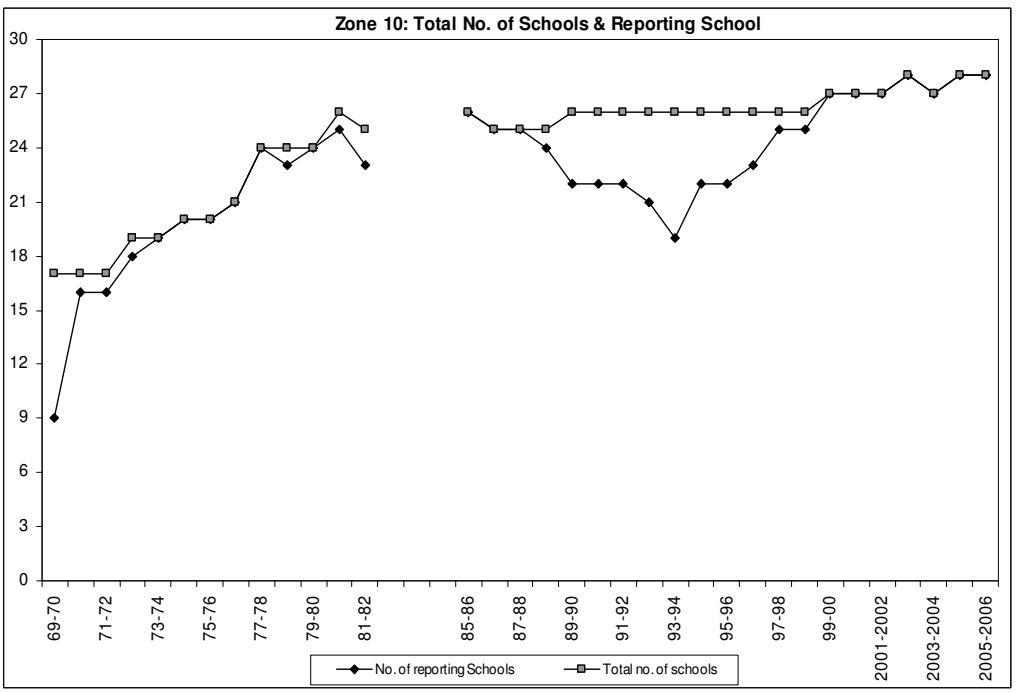


Chart 10A Zone 10--Urdu : Standardwise Total enrolment
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
1 to 4
5 to 7
1 to 7


Zone 10: Total No. of Schools & Reporting School
30
27
24
21
18
15
12
9
6
3
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
No. of reporting Schools
Total no. of schools

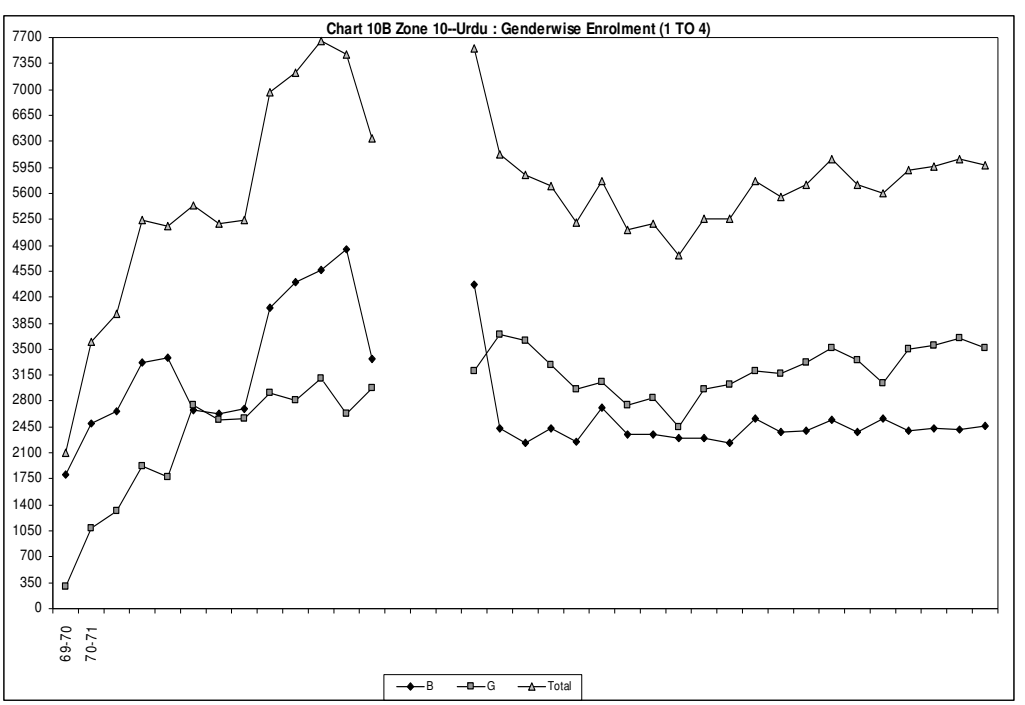


Chart 10B Zone 10--Urdu : Genderwise Enrolment (1 TO 4)
7700
7350
7000
6650
6300
5950
5600
5250
4900
4550
4200
3850
3500
3150
2800
2450
2100
1750
1400
1050
700
350
0
69-70
70-71
B
G
Total

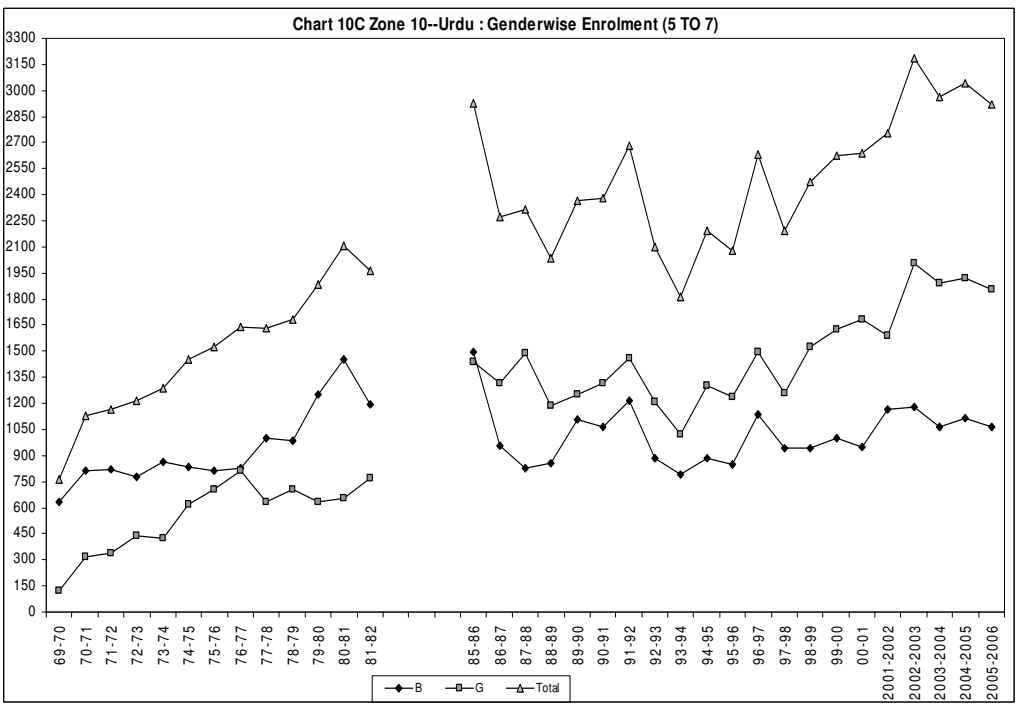


Chart 10C Zone 10--Urdu : Genderwise Enrolment (5 TO 7)
3300
3150
3000
2850
2700
2550
2400
2250
2100
1950
1800
1650
1500
1350
1200
1050
900
750
600
450
300
150
0
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
B
G
Total

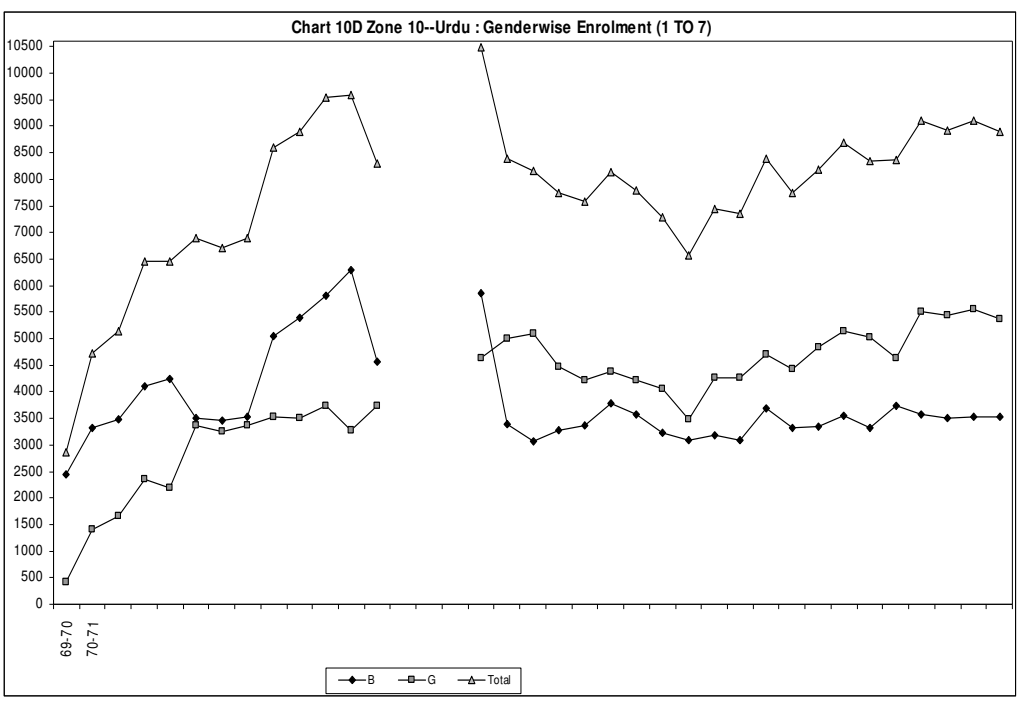
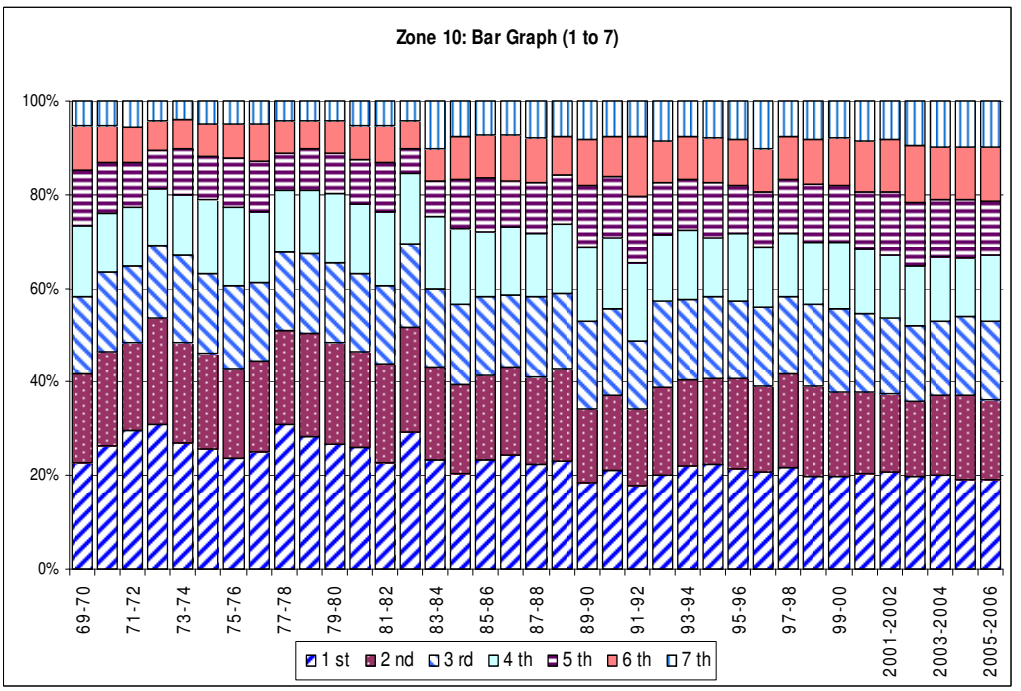
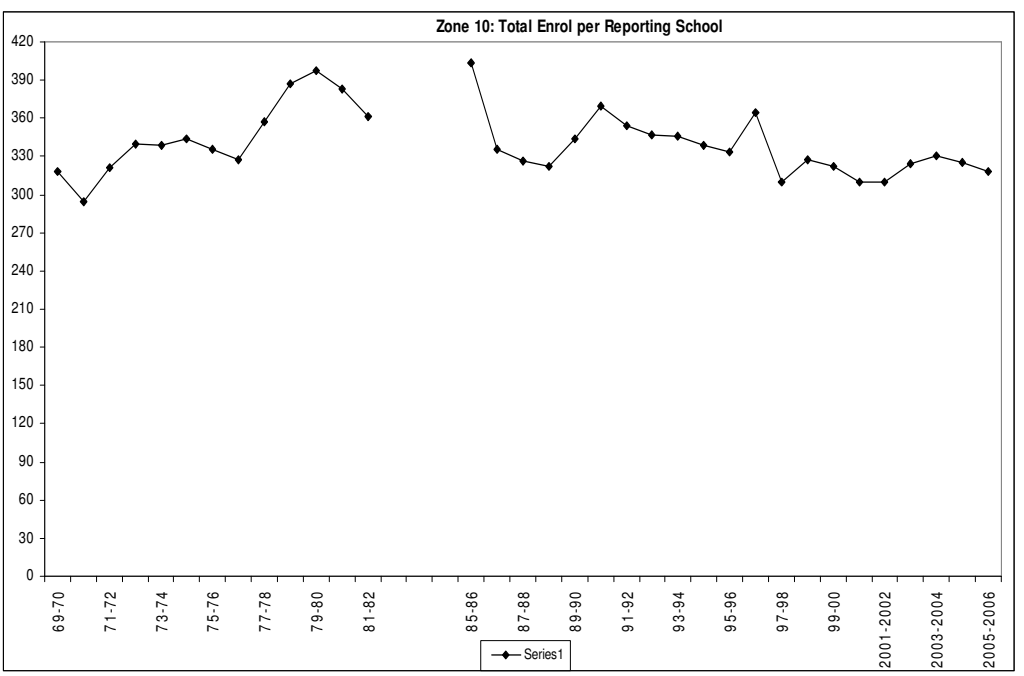
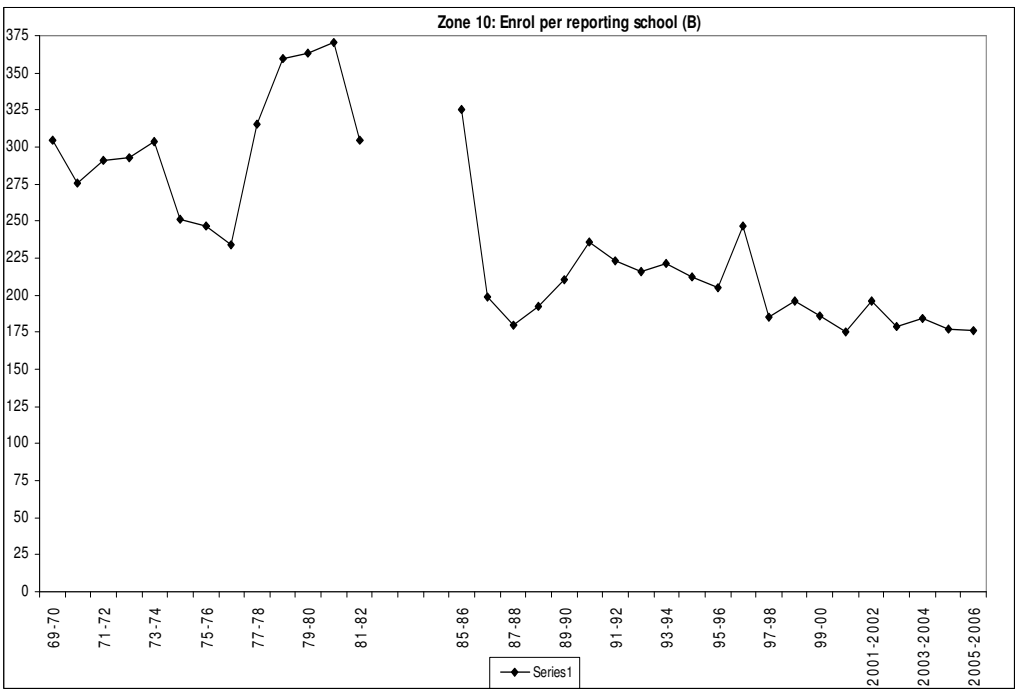
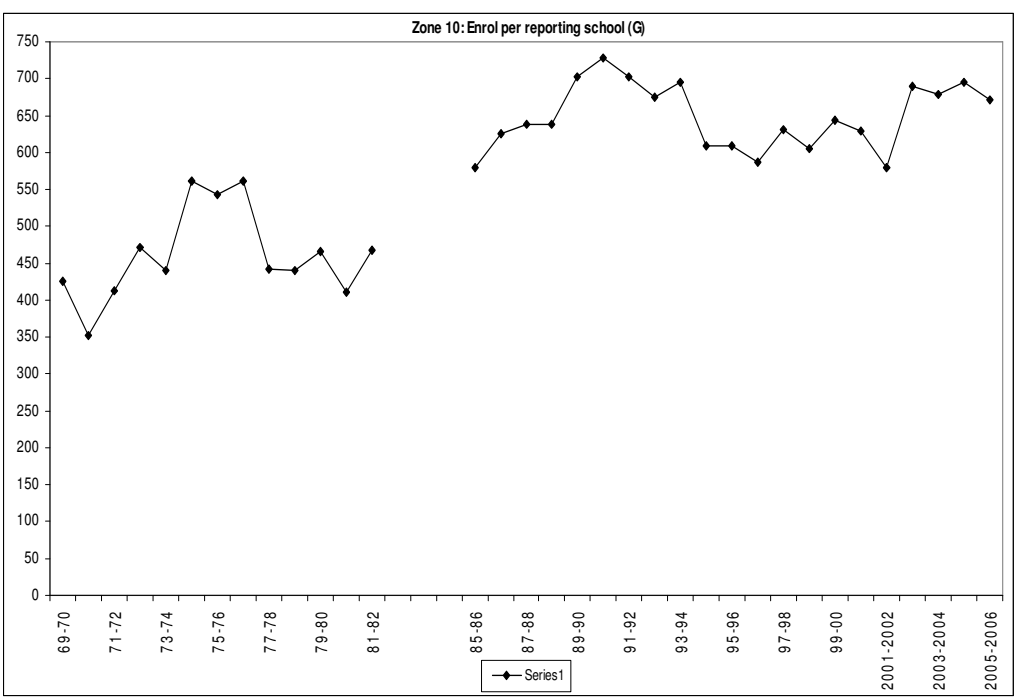


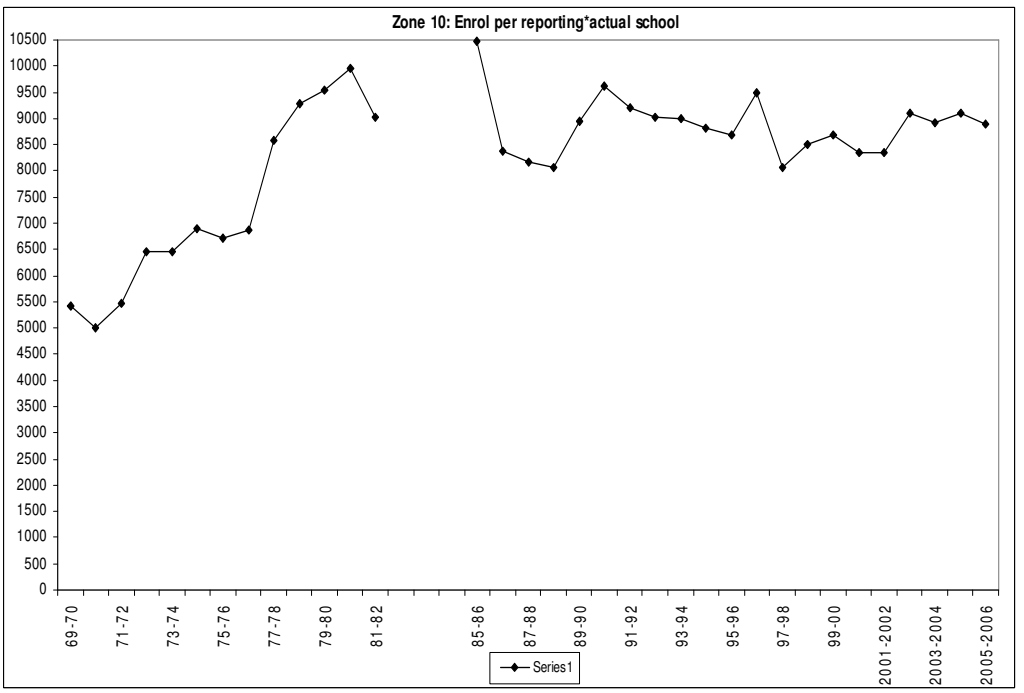
Chart 10D Zone 10--Urdu : Genderwise Enrolment (1 TO 7)
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
70-71
B
G
Total

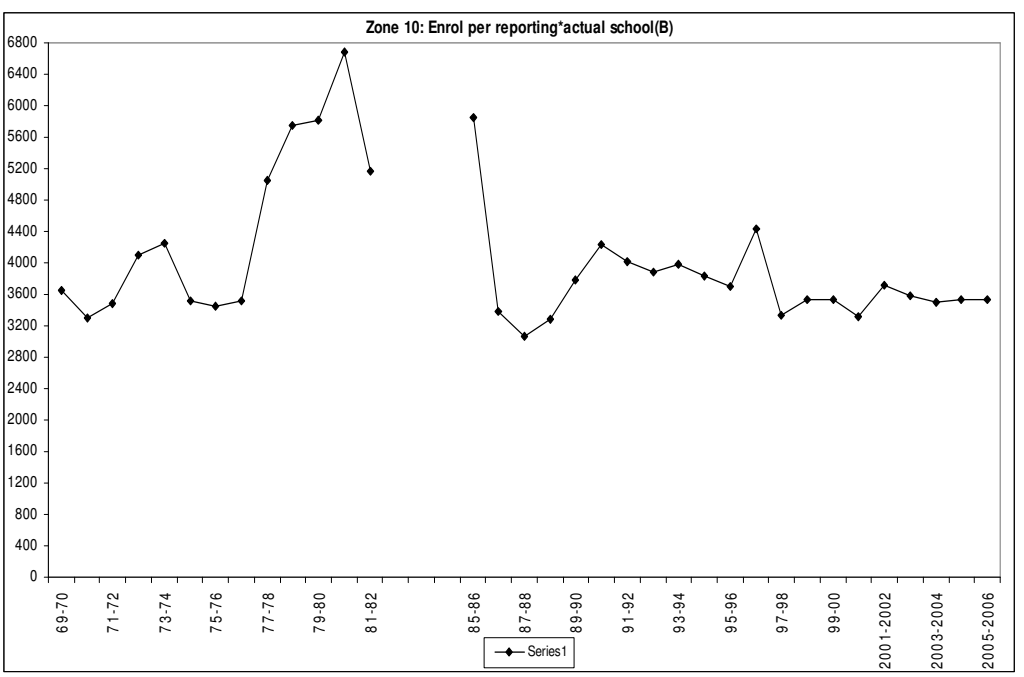

Zone 10: Bar Graph (1 to 7)
100%
80%
60%
40%
20%
0%
69-70
71-72
73-74
75-76
77-78
79-80
81-82
83-84
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
1 st
2 nd
3 rd
4 th
5 th
6 th
7 th

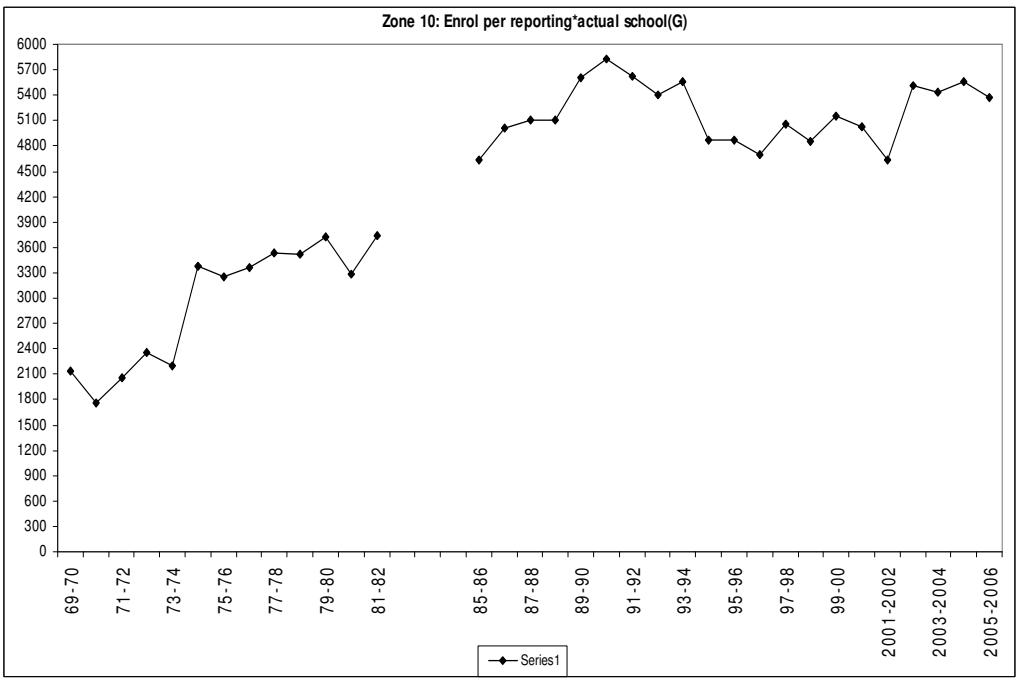

Zone 10: Total Enrol per Reporting School
420
390
360
330
300
270
240
210
180
150
120
90
60
30
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

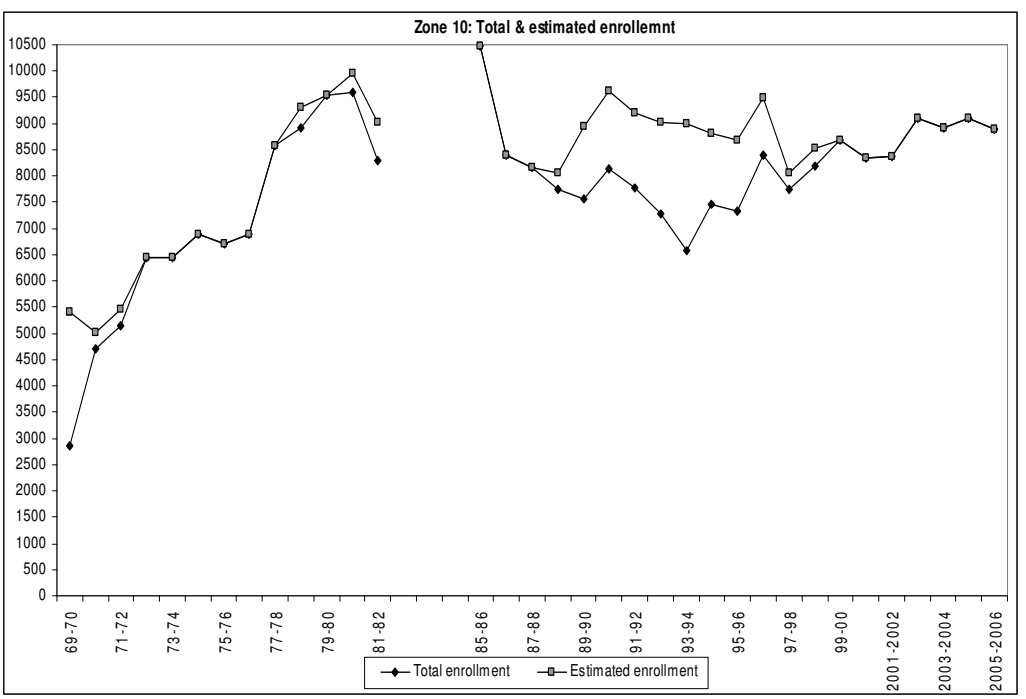

Zone 10: Enrol per reporting school (B)
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

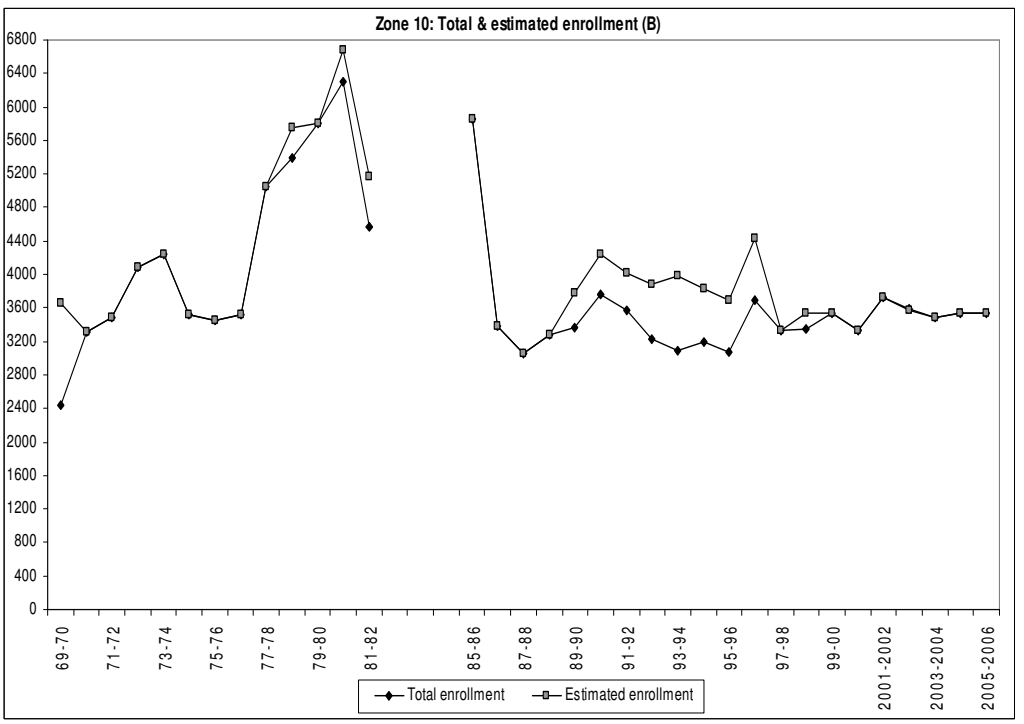

Zone 10: Enrol per reporting school (G)
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1

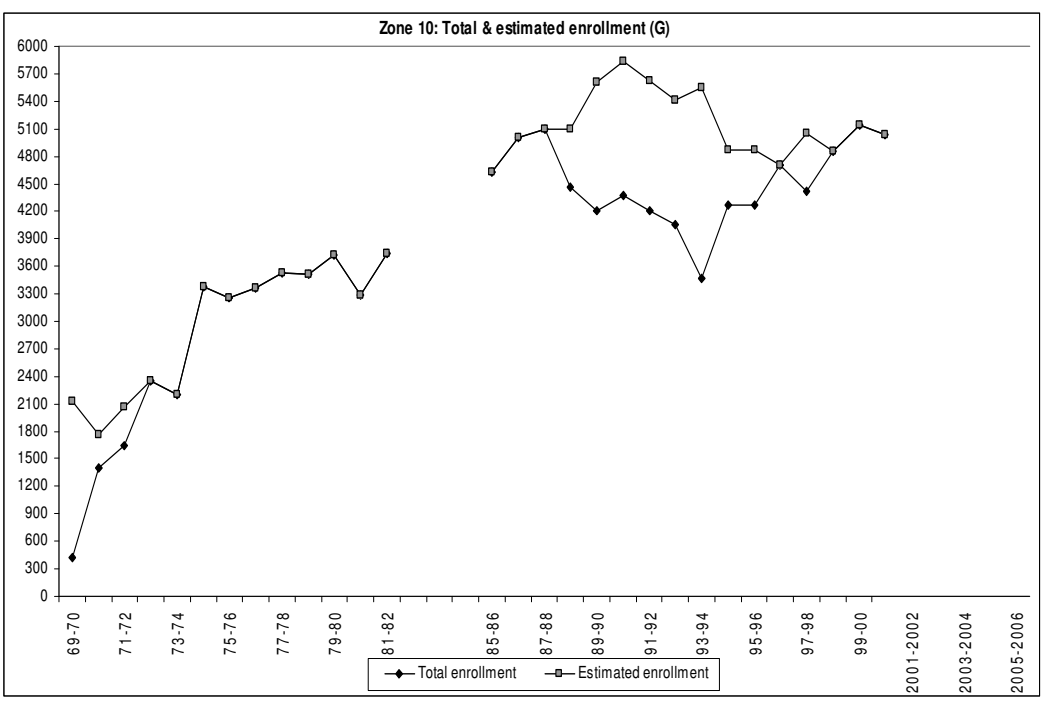

Zone 10: Enrol per reporting*actual school
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 10: Enrol per reporting*actual school(B)
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 10: Enrol per reporting*actual school(G)
6000
5700
5400
5100
4800
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Series1


Zone 10: Total & estimated enrollemnt
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 10: Total & estimated enrollment (B)
6800
6400
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment


Zone 10: Total & estimated enrollment (G)
6000
5700
5400
5100
4800
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
69-70
71-72
73-74
75-76
77-78
79-80
81-82
85-86
87-88
89-90
91-92
93-94
95-96
97-98
99-00
2001-2002
2003-2004
2005-2006
Total enrollment
Estimated enrollment

3. TRENDS IN EXPENDITURE ON PMC CONDUCTED PRIMARY SCHOOLS AND RELATED ITEMS

Vikas Chitre*

This chapter presents the main observations on the trends in expenditure on PMC Schools and related items based on a quick review of the Annual Reports of PMC School Board from 1975-76 to 2005-06.

The Annual Reports of PMC School Board present useful data on the number of PMC primary schools, (i.e., Stds. I-VII) and enrolment in them, number of primary teachers in PMC schools, and the Statement of Actual Income and Expenditure for the year. The Annual Reports also provide data on the number of approved private schools and enrolment in them. Pune had two types of primary schools: up to Standards IV and up to standard VII. All data used in this chapter pertain to both these types of schools together. The expenditure data from the Annual Reports include the salary and allowances of the teachers and the non-teaching staff clubbed together and for both types of primary schools. Separate data on teachers' and non-teaching staff used later (in Table 12 and discussion following it) were obtained from the records of Monthly Salary Statements submitted by the PMC schools to the School Board for the period from March 1970 to March 2006 (School Board Records, for short). They also relate to both types of primary schools together. Further, the Annual Reports of the PMC School Board also present data from the medical check-ups of the students from PMC schools during the year (presented in Table 14 and Chart 14 below and discussed subsequently). Finally, these Reports also describe the major events and activities organised for the schools.

It may be also noted at the outset that certain important items of expenditure such as the capital expenditure on the construction of schools or expenditure incurred on the Mid-Day Meals Scheme or under the Sarva Shiksha Abhiyan, which are shown in the Income Expenditure Statements of other Departments or other Agencies, are not included in the data analysed here. For a fuller analysis, these data will need to be culled out from these other sources.

Schools, Teachers and Enrolment:

We shall not comment here on the trends in enrolment of students over the years as the same has been done in great detail in the previous chapter. However, it may not be out of place to comment upon the inter-relationships among the number of schools, the number of teachers and the enrolment in PMC and private primary schools.

There were 182 PMC schools in 1975-76. The number of schools steadily increased to 225 in 1984-85, dipped somewhat after that and reached this number again only in 1993-94, and then increased to 315 in 2001-02. The number has since declined steadily and stood at 287 in 2005-06. (See Table 1 and Chart 1) The number of schools during the years from 1999-2000 to 2003-04 shows a hump because of inclusion of schools in the villages included in the Corporation jurisdiction and their subsequent exclusion from PMC administration. (For full data set on number of primary schools and enrolment, from the source, see Annexure 1).

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Table 1. Number of PMC and Pvt. Primary and English Medium Schools

Year	PMC primary schools	Total no. of Pvt. Schools	Pvt. English Primary Schools	Number of Pvt. Schools Other than English Medium
(1)	(2)	(3)	(4)	(5)
1975-76	182	129	31	98
1976-77	185	129	35	94
1977-78	200	129	36	93
1978-79	205	129	36	93
1979-80	207	134	40	94
1980-81	218	134	40	94
1981-82	218	127	37	90
1982-83	220	126	36	90
1983-84	223	126	38	88
1984-85	225	124	38	86
1985-86	222	131	42	89
1986-87	218	130	42	88
1987-88	218	130	42	88
1988-89	218	148	56	92
1989-90	216	155	59	96
1990-91	216	168	63	105
1991-92	216			
1992-93	220	176	69	107
1993-94	225	181	72	109
1994-95	232	195	81	114
1995-96	232	194	79	115
1996-97	232	198	79	119
1997-98	235	197	81	116
1998-99	246	200	82	118
1999-00				
2000-01	314	263	98	165
2001-02	315	277	107	170
2002-03	300	335	145	190
2003-04	302	335	145	190
2004-05	296	356	164	192
2005-06	287	373	177	196

The number of students enroled in Standards I-VII in PMC schools increased from 77412 to 113003 in 1995-96, at first rapidly and then negligibly, and with a spurt from 1999-2000 to 2001-02, declined noticeably thereafter to 105587 in 2005-06. By comparison, the number of students enroled in Standards I-VII in Private (Pvt) schools increased from 52517 in 1975-1976 to 153878 in 2005-06, overtaking the enrolment of students in PMC schools after 1999-2000. (Table 2 and Chart 2).

Table 2. Enrolment in PMC and Pvt. Primary and English Medium Schools

Year	PMC Enrolment	Pvt. English Primary Enrolment	Enrolment in Pvt. Schools Other than English Medium	Enrolment in Pvt. Schools Total
(1)	(2)	(3)	(4)	(5)
1975-76	77412	10242	42275	52517
1976-77	88721	12029	40458	52487
1977-78	93698	12875	44221	57096
1978-79	95878	13592	43691	57283
1979-80	100748	15194	48799	63993
1980-81	102955	15244	50368	65612
1981-82	104032	15790	51650	67440
1982-83	107565	16405	55732	72137
1983-84	102174	20491	44933	65424
1984-85	106823	23018	49195	72213
1985-86	107821	23966	51427	75393
1986-87	107293	24023	51530	75553
1987-88	107345	24348	51814	76162
1988-89	110262	24853	50993	75846
1989-90	108785	25153	51627	76780
1990-91	111430	27132	54591	81723
1991-92	110571			
1992-93	111374	27186	57864	85050
1993-94	112732	27336	58139	85475
1994-95	112893	27741	58852	86593
1995-96	113003	28216	60706	88922
1996-97	111562	29590	62462	92052
1997-98	110762	32160	60119	92279
1998-99	105943	36187	65277	101464
1999-00				
2000-01	119927	43293	83230	126523
2001-02	117323	47483	84727	132210
2002-03	110887	48485	91065	139550
2003-04	104391	49985	92306	142291
2004-05	113094	54996	93426	148422
2005-06	105587	57129	96749	153878

Enrolment in PMC schools as percentage of PMC *plus* Pvt schools *including* English Medium schools, therefore, declined from between 60 and 63 during 1975-1982 to about 41 in 2005-06. Even when the enrolment in the English medium schools, which was relatively much larger in the Pvt. schools in comparison with that in the PMC schools, is not considered, the picture is very similar. Enrolment in PMC schools as a percentage of PMC plus Pvt. schools excluding English Medium schools also declined from between 65 and 69 during 1975-1982 to over 52 in 2005-06. (See: Table 3 and Chart 3) That is, among the non-English medium schools, though the proportion of students studying in the PMC schools has declined due to competition from the Pvt schools, more than half the students still study in PMC schools.

Table 3. Enrolment in PMC Schools as Percentage of PMC plus Private Schools (Including and Excluding English Medium Schools)

year	Enrolment in PMC Schools as percentage of PMC plus Pvt. Schools Incl.English Medium Schools	Enrolment in PMC Schools as percentage of PMC plus Pvt. Schools excl. English Medium Schools
(1)	(2)	(3)
1975-76	59.58	64.68
1976-77	62.83	68.68
1977-78	62.14	67.94
1978-79	62.6	68.7
1979-80	61.16	67.37
1980-81	61.08	67.15
1981-82	60.67	66.82
1982-83	59.86	65.87
1983-84	60.96	69.46
1984-85	59.67	68.47
1985-86	58.85	67.71
1986-87	58.68	67.56
1987-88	58.5	67.45
1988-89	59.25	68.38
1989-90	58.62	67.82
1990-91	57.69	67.12
1991-92		
1992-93	56.7	65.81
1993-94	56.88	65.97
1994-95	56.59	65.73
1995-96	55.96	65.05
1996-97	54.79	64.11
1997-98	77.5	100
1998-99	51.08	61.88
1999-00		
2000-01	48.66	59.03
2001-02	47.02	58.07
2002-03	44.28	54.91
2003-04	42.36	53.07
2004-05	43.5	54.76
2005-06	40.97	52.18

The number of primary teachers in PMC schools increased from 2176 in 1975-76 to 2360 in 1985-86, remained almost constant at this number till 1995-96, and increased thereafter to 2537 in 2005-06, with a hump in their number from 1999-2000 to 2001-02, for the reason mentioned above. From 2002-03, PMC has been running some English medium primary schools as well. In 2005-06, there were 18 such schools, with 63 teachers and an enrolment of 1211 students. We are keeping these schools outside the present analysis. (See Table 4 and Chart 4).

Table 4. Number of Primary Teachers and the Student-Teacher Ratio in PMC and Private Schools

Year	Primary Teachers in PMC Schools	Students per Teacher in PMC Schools	Teachers in Pvt. Schools	Students per Teacher in Pvt. Schools
(1)	(2)	(3)	(4)	(5)
1975-76	2176	36	1260	42
1976-77	2187	41	1239	42
1977-78	2291	41	1303	44
1978-79	2291	42	1303	44
1979-80	2291	44	1333	48
1980-81	2302	45	1380	48
1981-82	2302	45	1418	48
1982-83	2304	47	1442	50
1983-84	2313	44	1456	45
1984-85	2350	45	1473	49
1985-86	2360	46	1492	51
1986-87	2360	45	1499	50
1987-88	2360	45	1488	51
1988-89	2364	47	1563	49
1989-90	2364	46	1586	48
1990-91	2364	47	1709	48
1991-92	2364	47		
1992-93	2364	47	1737	49
1993-94	2363	48	1742	49
1994-95	2363	48		
1995-96	2363	48		
1996-97	2402	46		
1997-98	2404	46		
1998-99	2404	44		
1999-00				
2000-01	3015	40		
2001-02	3015	39		
2002-03	2935	38		
2003-04	2932	36		
2004-05	2765	41		
2005-06	2537	42		

The number of students per teacher in PMC primary schools increased from 36 in 1975-76 to 48 in 1993-94, but subsequently declined to 36 again in 2002-03 before increasing to 42 in 2005-06. (See: Table 5 and Chart 3.) It is worth noting that throughout the period from 1975-76 to 1993-94, for which data on teachers in approved private primary schools is available from the Annual Reports of PMC School Board, the number of students per teacher in private schools (including English medium ones) was between 42 and 51, being always higher than that for the PMC schools. We have not assessed the quality of learning in private schools. However, with the number of students per teacher higher than 40, one wonders how the quality of learning in primary schools, whether PMC conducted or private, can be expected to be up to the mark.

It appears that the private managements have been setting up an increasing number of schools and attracting students, but have they been recruiting adequate number of teachers at the same time? The number of teachers per school in PMC schools has declined from 12 in 1975-76 to 11 during 1985-86 to 1993-94, with a dip to 10 from 1982-83 to 1984-85, and then declined further to 10 from 1995-96 to 2003-04, and to only

9 during 2004-06. The number of teachers in private schools, on the other hand has been at 10 through most of the years for which this data is available from the Annual Reports of the PMC Board, except that during 1981-82 to 1988-89, it hovered between 11 and 12 and was higher than the same for the PMC schools between 1981-82 to 1985-86, the years when the number of teachers per school had dipped for PMC schools but had increased for the private schools. (See: Table 5 and Chart 5)

Table 5. Teachers per School in PMC and Private Primary Schools

year	Teachers per PMC school	Teachers per Pvt. school
(1)	(2)	(3)
1975-76	12	10
1976-77	12	10
1977-78	11	10
1978-79	11	10
1979-80	11	10
1980-81	11	10
1981-82	11	11
1982-83	10	11
1983-84	10	12
1984-85	10	12
1985-86	11	11
1986-87	11	12
1987-88	11	11
1988-89	11	11
1989-90	11	10
1990-91	11	10
1991-92	11	
1992-93	11	10
1993-94	11	10
1994-95	10	
1995-96	10	
1996-97	10	
1997-98	10	
1998-99	10	
1999-00		
2000-01	10	
2001-02	10	
2002-03	10	
2003-04	10	
2004-05	9	
2005-06	9	

Enrolment per school in PMC schools increased from 425 in 1975-76 to 516 in 1990-91 and declined thereafter to reach 368 in 2005-06. The same in approved private schools (excluding the English Medium ones) increased from 668 in 1975-76 to 920 in 1986-87, but declined thereafter to 732 in 2002-03, before increasing somewhat to 761 in 2005-06. That for the English Medium private schools increased from 330 in 1975-76 to 580 in 1987-88, but declined thereafter to 323 in 2005-06, with a hump during the years from 1999-00 to 2001-02 when it had reached a high level of around 440. (See: Table 6and Chart 6.) The decline in enrolment per school in private schools was undoubtedly because of the very rapid increase in private schools, in English as

well as other mediums, especially from 2000-01, even though enrolment in them was also increasing rapidly. On the other hand, the decline in enrolment per school in PMC schools was because of decline in enrolment and in spite of a some, albeit slow, growth during the period and, in fact, some decline, in the number of schools towards the end of this period. Between 1990-91 and 2005-06, the number of English Medium private schools increased by 180 per cent, that of non-English Medium private schools by 87 per cent, while that of the PMC schools increased by 33 per cent.

Table 6. Enrolment per School-PMC, Private (including and Excluding English Medium Schools)

year	Enrolment per PMC Primary School	Enrolment per Private Primary School (including English Medium Schools)	Enrolment per Private Primary School (English Medium Schools)	Enrolment per Private Primary School (excluding English Medium Schools)
(1)	(2)	(3)	(4)	(5)
1975-76	425	407	330	431
1976-77	480	407	344	430
1977-78	468	443	358	475
1978-79	468	444	378	470
1979-80	487	478	380	519
1980-81	472	490	381	536
1981-82	477	531	427	574
1982-83	489	573	456	619
1983-84	458	519	539	511
1984-85	475	582	606	572
1985-86	486	576	571	578
1986-87	492	581	572	586
1987-88	492	586	580	589
1988-89	506	512	444	554
1989-90	504	495	426	538
1990-91	516	486	431	520
1991-92	512			
1992-93	506	483	394	541
1993-94	501	472	380	533
1994-95	487	444	342	516
1995-96	487	458	357	528
1996-97	481	465	375	525
1997-98	471	468	397	518
1998-99	431	507	441	553
1999-00				
2000-01	382	481	442	504
2001-02	372	477	444	498
2002-03	370	417	334	479
2003-04	346	425	345	486
2004-05	382	417	335	487
2005-06	368	413	323	494

Trends in Expenditure on PMC Primary Schools:

The Income-Expenditure Statements of the Pune School Board[2] provide details for annual receipts and annual expenditure on salaries of the staff employed in the Board's office and the PMC primary schools and the contribution to Pension, PF and Gratuity and leave salary (herein after referred to as Retirement Benefits) of these staff, items of current expenditure in PMC schools, items of expenditures specifically for the benefit of the students such as scholarships, prizes, slates, books and uniforms, and grants to aided private primary schools. (See: Annexure 2-Table 1). In our analysis, we have separated the grants to aided private primary schools from the student benefits and the expenditure on PMC primary schools. A sizeable percentage of the total expenditure of the PMC School Board was devoted to grants to private schools up to 1997-98. Over the period from 1975-76 to 1997-98 (excluding the year 1999-2000 for which data was not available to us) the PMC Board's grants to private schools averaged to as high as 21.5 per cent of the total expenditure on PMC primary schools, (i.e., excluding grants to private schools); the same average came down to a mere 0.7 per cent.from 1998-98 to 2005-2006. (See Table 7 and Chart 7).

We have divided the total expenditure of PMC School Board, excluding grants to private schools, into the following categories:

(i) Salaries including retirement benefits: Salaries of the School Board office staff, salaries of teachers and other staff in PMC primary schools and the retirement benefits of this entire staff;[3]

(ii) Expenditure on PMC schools, other than salaries and retirement benefits: Expenditure, other than salaries and retirement benefits of the staff, incurred on running PMC schools, including Vidya Niketan schools.[4] This may be broadly considered to be the routine expenditure of running the schools, other than staff salaries and retirement benefits;

(iii) Student benefits: Scholarships and prizes, slates and books for students, school uniforms for students and nutrition supplements in pre-Mid Day Scheme years;

(iv) Other expenditure: Ad hoc expenditure and School Board office stationery, forms and other printing, and other School Board office expenditure. (See Annexure 2-Table 2).

Table 7 and Chart 7 show the trends of nominal total expenditure of PMC School Board (excluding grants to private schools) and that at 1982 prices.

2. The original Income Expenditure Statements of the Pune School Board contained some errors for some years. For some years, the total receipts and total expenditure were not equal (discrepancy 1), for some years, the opening balance of the year happened to have been shown to be different from the closing unspent balance for the previous year (discrepancy 2). After a careful scrutiny of these discrepancies, correction of sub-totals and totals where these were incorrect, and replacing the opening or closing balances from the previous year's or the following year's closing or opening balance, respectively, most of these discrepancies could be resolved and corrected. After this exercise, for two years, namely, 1987-88 and 2003-04, discrepancy 1 could not be removed and for 1976-77, discrepancy 2 persisted. Unfortunately, we had to leave these discrepancies unresolved. Also, we could not procure the Income Expenditure Statement for 1999-2000.

3. It is not possible to separate the retirement benefits of the PMC School Board office staff and teachers and other staff in the PMC primary schools.

4. This consists of expenditure towards school rent and taxes, minor school repairs, furniture and equipment, class books, maps, library books, magazines, physical education equipment and scouts and girl guides, school forms, etc, school equipment, census operations, sports, special events and school trips, other expenditure and miscellaneous expenditure comprising furniture repairs, transport, sundry expenses, medical assistance to staff, uniforms for peons, garden and nature coaching, examiners' honorarium, school improvement campaign, and expenditure on Vidya Niketan.

Table 7. Expenditure on PMC Primary Schools-Nominal and at 1982 Prices

Year	Expenditure on PMC Primary Schools excl. Grants to Pvt Schools	Expenditure on PMC Primary Schools excl. Grants to Pvt Schools, in 1982 Prices
(1)	(2)	(3)
1975-76	14880722	24102578
1976-77	15510348	23703522
1977-78	18018520	27086664
1978-79	22140618	31050867
1979-80	25069727	31768800
1980-81	26285346	28788712
1981-82	31328308	31328308
1982-83	35297542	31105114
1983-84	44254626	36158309
1984-85	45289011	35131442
1985-86	51088985	37243951
1986-87	55165047	37593958
1987-88	71696215	45497334
1988-89	79227814	45273037
1989-90	93558171	48983336
1990-91	124166482	57219577
1991-92	121161389	47889877
1992-93	146205724	54758698
1993-94	155952022	52686494
1994-95	170353385	51622238
1995-96	194322995	54128968
1996-97	246271813	63472117
1997-98	276956277	61820598
1998-99	298867611	64134680
1999-00		
2000-01	492972963	95537396
2001-02	606418790	114852044
2002-03	500309142	90308509
2003-04	694094517	120922390
2004-05	877942859	149056513
2005-06	838516947	133521807

Of the total expenditure of PMC School Board, excluding grants to private schools, salaries and retirement benefits have constituted from 85-90 per cent, except for the last three years when this percentage declined to 81, 77 and 68 per cent, owing to a relative increase in category (ii) above, namely, expenditure on PMC schools, other than salaries and retirement benefits. In 1990-92 and 2001-03, salaries and retirement benefits of the staff surged to 90-92 per cent, possibly on account of the revision of pay scales. Retirement benefits of the staff have increased from being a meagre 2.5 per cent of the total expenditure to between 16 and 18 per cent in recent years. Expenditure on PMC schools has hovered between 4 and 9 per cent of the total expenditure throughout the years, except in 1981-82 and the recent three years when this expenditure increased to between 12 and 14 per cent of total expenditure. Student benefits have been fluctuating widely between 2 and around 7 per cent of the total expenditure over the years, with an overall declining trend. Other expenditure has been very low, less than 1 per cent of total expenditure throughout, except in 2004-05 when it shot up to over 12 per cent and in 2005-06 when it was more than 5.5 per cent. (See Table 8 and Chart 8).

Table 8. Total Expenditure - Percentage Distribution of Major Components

year	Salaries (incl.Retirement Benefits) as Per cent of Total Exp. PMC School Board, Excl Grants to Pvt.Schools (Nominal)	Expenditure PMC Primary Schools, Other than Salaries, as Per cent of Total Exp. PMC School Board, Excl Grants to Pvt.Schools (Nominal)	Student Benefits as Per cent of Total Exp. PMC School Board, Excl Grants to Pvt Schools (Nominal)	Other Exp.as Per cent of Total Exp. PMC School Board, Excl Grants to Pvt Schools (Nominal)
(1)	(2)	(3)	(4)	(5)
1975-76	85.09	8.33	6.27	0.31
1976-77	86.50	9.32	3.60	0.57
1977-78	85.71	7.64	6.20	0.46
1978-79	84.44	8.63	6.58	0.35
1979-80	85.90	8.61	5.15	0.34
1980-81	86.84	7.80	4.96	0.40
1981-82	82.06	12.14	5.05	0.76
1982-83	86.15	8.00	5.10	0.75
1983-84	86.39	7.43	5.62	0.56
1984-85	88.22	5.62	5.67	0.49
1985-86	87.14	7.26	5.21	0.38
1986-87	89.99	6.48	2.83	0.70
1987-88	89.12	7.76	2.34	0.78
1988-89	89.96	5.62	3.72	0.70
1989-90	90.40	5.19	3.74	0.66
1990-91	93.29	3.36	2.88	0.48
1991-92	88.83	5.63	4.87	0.67
1992-93	85.74	8.38	4.97	0.92
1993-94	86.07	7.05	6.03	0.85
1994-95	86.53	5.53	7.20	0.73
1995-96	92.32	4.90	2.04	0.74
1996-97	86.55	7.74	5.41	0.29
1997-98	86.55	7.39	4.88	1.08
1998-99	86.68	8.14	4.64	0.54
1999-00				
2000-01	86.14	8.27	5.08	0.51
2001-02	92.13	4.79	2.54	0.54
2002-03	90.03	5.69	3.50	0.78
2003-04	81.39	14.13	3.57	0.91
2004-05	67.51	17.07	2.82	12.60
2005-06	77.50	12.33	4.61	5.56

Total expenditure of PMC Board on PMC schools, per student, increased from Rs.192 to between Rs. 4000 and Rs. 5000 during the years from 2000-01 to 2003-04, subsequently rapidly increasing in the last three years only. It stood at Rs. 7942 in 2005-06. Because of the very high share of the total expenditure which salaries including retirement benefits of the staff absorb, of the total expenditure per student in 2005-06 Rs.6155 was paid out as staff salaries and only nearly Rs. 980 per student was available for Expenditure on PMC schools, other than salaries and retirement benefits, i.e. for meeting the expenditure of running the schools. In fact, the years 2003-06 saw some stepping up of this expenditure. In previous years, this expenditure was just around Rs. 250 per student. Annual expenditure per student on student benefits was between Rs. 130 to just over Rs. 200 during 2000-2003 and between Rs. 220 and Rs.365

during 2003-06 (See: Table 9 and Chart 9.) The routine expenditure for running the schools as well as that for student benefits (per student) always seems to have suffered a considerable absolute decline during the years of pay revision for the staff.

Table 9. Total Expenditure PMC School Board per Student and Its Components

year	Exp. PMC School Board, excluding grants to private schools, per Student (Nominal)	Salaries (Incl. Retirement Benefits), per Student (Nominal)	Expenditure PMC Primary Schools Other than Salaries, per Student (Nominal)	Student Benefits per Student (Nominal)	Other Exp. Per Student (Nominal)
(1)	(2)	(3)	(4)	(5)	(6)
1975-76	192.23	163.57	16.01	12.04	0.6
1976-77	174.82	151.22	16.3	6.3	1
1977-78	192.3	164.82	14.69	11.92	0.88
1978-79	230.92	194.99	19.93	15.2	0.8
1979-80	248.84	213.75	21.44	12.81	0.84
1980-81	255.31	221.7	19.92	12.66	1.02
1981-82	301.14	247.11	36.56	15.19	2.28
1982-83	328.15	282.69	26.26	16.74	2.46
1983-84	433.13	374.2	32.18	24.33	2.42
1984-85	423.96	374.03	23.82	24.03	2.08
1985-86	473.83	412.89	34.42	24.71	1.82
1986-87	514.15	462.71	33.31	14.6	3.54
1987-88	667.9	595.23	51.83	15.62	5.22
1988-89	718.54	646.41	40.4	26.71	5.02
1989-90	860.03	777.49	44.64	32.2	5.69
1990-91	1114.3	1039.51	37.4	32.07	5.32
1991-92	1095.78	973.37	61.66	53.37	7.37
1992-93	1312.75	1125.49	109.96	65.22	12.07
1993-94	1383.39	1190.66	97.52	83.47	11.74
1994-95	1508.98	1305.73	83.49	108.72	11.05
1995-96	1719.63	1587.54	84.27	35.14	12.68
1996-97	2207.49	1910.67	170.96	119.43	6.42
1997-98	2500.46	2166.6	184.76	122.1	26.99
1998-99	2821.02	2445.2	229.61	130.91	15.31
1999-00					
2000-01	4110.61	3540.69	340.03	208.72	21.17
2001-02	5168.8	4762.17	247.46	131.2	27.96
2002-03	4511.88	4061.97	256.76	157.8	35.37
2003-04	6648.99	5411.69	939.63	237.23	60.43
2004-05	7762.95	5240.76	1324.91	218.98	978.29
2005-06	7941.48	6154.95	979.47	365.71	441.34

In spite of the meagre expenditures on important non-salary items necessary for improving the functioning of the schools and the quality of learning in them, what appears somewhat surprising is that the Income Expenditure Statements of the PMC School Board seem invariably to show a substantial unspent balance at the end of the year. It averages to 3.27 per cent of total receipts, and has been frequently between 4 to10 per cent of total receipts. Alternatively, it averages to 58 per cent of PMC expenditure, other than staff salaries and retirement benefits, for the running of the schools and has often been between 75 to 300 per cent of the latter in several years. For example, the unspent balance in 2005-06 was more than Rs. 7.91 crore, when PMC School

Board expenditure for the running of the schools, (i.e., even after excluding staff salaries and retirement benefits) was 10.34 crore. (See: Table 10 and Chart 10a and 10b.) One would like to know whether this is due to lack of suitable programmes or schemes for improving the schools, or due to lack of necessary sanction for expenditure or rigid norms for expenditure or inability or unwillingness to utilise these funds for useful purposes for the schools or simply because the corresponding funds are received towards the very end of the year, or for some other reasons. Whatever the reasons, the situation needs to be remedied.

Table 10. Total PMC Board Receipts, Unspent Balance and Unspent Balance as Percentage of Total PMC Board Receipts and of Expenditure on PMC Primary Schools

Year	Total PMC Receipts	Unspent Balance at the end of the	Unspent Balance as Percentage of Total Receipts	Unspent Balance as Percentage of Expenditure PMC Primary Schools other than staff salaries and retirement benefits
(1)	(2)	(3)	(4)	(5)
1975-76	20041142	2970099	14.82	239.61
1976-77	18906939	94607	0.5	6.54
1977-78	20520674	31973	0.16	2.32
1978-79	27539154	466574	1.69	24.42
1979-80	31005158	578142	1.86	26.77
1980-81	38337845	2584938	6.74	126.01
1981-82	41502731	206075	0.5	5.42
1982-83	43628673	1564769	3.59	55.4
1983-84	55292288	1261555	2.28	38.37
1984-85	56852894	821829	1.45	32.29
1985-86	63032309	848207	1.35	22.86
1986-87	72941375	3738122	5.12	104.61
1987-88	90794146	15300	0.02	0.27
1988-89	101299815	214530	0.21	4.82
1989-90	119780917	95601	0.08	1.97
1990-91	160053740	503253	0.31	12.08
1991-92	158147756	1786835	1.13	26.21
1992-93	188955971	-167255	-0.09	-1.37
1993-94	203890512	1353406	0.66	12.31
1994-95	247506264	4221297	1.71	44.79
1995-96	266599815	6292892	2.36	66.08
1996-97	338549649	14719672	4.35	77.18
1997-98	367394701	3390821	0.92	16.57
1998-99	361058696	35157416	9.74	144.53
1999-00		80416396		
2000-01	568898232	25822269	4.54	63.32
2001-02	704719421	57372904	8.14	197.61
2002-03	744221902	79652609	10.7	279.77
2003-04	734816649	16430765	2.24	16.75
2004-05	795544412	22575372	2.84	15.07
2005-06	955721083	79133139	8.28	76.52
Average			3.27	57.97

Annual total expenditure per school increased from nearly Rs. 82000 in 1975-76 to between Rs.13 lakh and Rs.18 lakh during 2000-03 and to between Rs. 18 lakh and Rs. 23 lakh during 2003-06. Correspondingly, annual expenditure for running the PMC schools increased from Rs. 6800 in 1975-76 to between Rs. 1.3 lakh and Rs. 1.6 lakh during 2000-03 and between Rs. 3.25 lakh and over Rs. 5 lakh during 2003-06. (See: Table 11 and Chart 11) The adequacy of this level of annual expenditure for running the schools certainly needs to be examined. Whether the schools can be more economically run may also need to be considered.

Table 11. Annual Total Expenditure per PMC Primary School and Its Components (in Rs.)

Year	Expenditure per School Nominal	Salaries incl. Retire-ment Benefits	Expenditure on PMC Primary Schools, Other than Salaries, per School Nominal	Student Benefits per Student Nominal per School Nominal	Other Exp.per School Nominal
(1)	(2)	(3)	(4)	(5)	(6)
1975-76	81762	69572	6811	5123	256
1976-77	83840	72522	7818	3020	479
1977-78	90093	77214	6880	5584	414
1978-79	108003	91195	9321	7111	376
1979-80	121110	104032	10433	6234	411
1980-81	120575	104703	9410	5979	484
1981-82	143708	117924	17447	7251	1086
1982-83	160443	138216	12840	8187	1201
1983-84	198451	171451	14743	11148	1109
1984-85	201284	177576	11311	11408	989
1985-86	230131	200531	16715	12000	884
1986-87	253051	227730	16392	7186	1742
1987-88	328882	293097	25524	7691	2570
1988-89	363430	326948	20433	13508	2541
1989-90	433140	391572	22483	16217	2867
1990-91	574845	536262	19294	16543	2746
1991-92	560932	498273	31566	27322	3772
1992-93	664571	569775	55667	33017	6112
1993-94	693120	596560	48861	41819	5880
1994-95	734282	635376	40626	52904	5375
1995-96	837599	773263	41048	17114	6174
1996-97	1061516	918786	82211	57430	3089
1997-98	1178537	1021180	87085	57550	12722
1998-99	1214909	1053057	98882	56378	6592
1999-00					
2000-01	1569978	1352308	129869	79717	8084
2001-02	1925139	1773691	92169	48865	10414
2002-03	1667697	1501397	94903	58325	13072
2003-04	2298326	1870635	324799	82004	20888
2004-05	2966023	2002360	506216	83666	373781
2005-06	2921662	2264400	360346	134546	162370

Separate data on teachers' salaries are not available in the Annual Reports of the PMC School Board. However, as already explained in the previous chapter, we have separately collected data on the number of teachers and the teachers' total monthly salary bill for the months of March and September of each year from the records of Monthly Salary Statements submitted by the PMC schools to the School Board for the period from March 1970 to March 2006. Computing PMC teachers' average annual salary from this data set, we observe that the teachers' average calendar year salary increased from Rs. 3093 in 1971 to Rs. 144948 in 2006. Even after removing the effect of the rise in the cost of living (by deflating the nominal average salary by the Cost of Living Index for Pune City, with the Cost of Living Index for the calendar year 1982=100), we find that the PMC teachers' average annual salary increased from Rs. 8187 in 1971 to Rs. 23081 in 2006, measured in terms of the Rupees of 1982, giving an average annual rate of increase of 3 per cent in the real pay package of the teachers, on average. (See: Table 12 and Chart 12a.)

Table 12. Average Annual Salary of PMC School Teachers and Non-Teaching Staff (Nominal in Rs. and at 1982 Prices)

Year	Teachers' Average Annual Salaries, School Board Records Calendar Year (Nominal)	Teachers' Average Annual Salaries, School Board Records, Calendar Year at 1982 Prices	Non-Teaching Staff Ave. Annual Salary Calendar Year (Nominal)	Non-Teaching Staff Ave. Annual Salary Calendar Year At 1982 Prices
(1)	(2)	(3)	(4)	(5)
1970-71	3097	8187	1592	4208
1971-72	3454	8496	1425	3505
1972-73	3496	7085	1522	3085
1973-74	3962	6750	2339	3985
1974-75	4251	6541	2020	3108
1975-76	4452	7211	2057	3331
1976-77	5252	8027	2587	3954
1977-78	5710	8584	2826	4248
1978-79	6366	8928	2924	4101
1979-80	7101	8999	3300	4182
1980-81	7818	8562	3287	3601
1981-82	9182	9182	4131	4131
1982-83	10001	8813	4669	4115
1983-84				
1984-85				
1985-86	14300	10425	10209	7443
1986-87	16564	11288	11441	7797
1987-88	17150	10883	12116	7689
1988-89	19786	11306	14056	8032
1989-90	23637	12375	15717	8229
1990-91	27665	12749	17561	8093
1991-92	32964	13029	20414	8069
1992-93	37502	14046	21298	7977
1993-94	43612	14734	22844	7718
1994-95	42508	12881	26432	8010
1995-96	51111	14237	27372	7624
1996-97	55583	14326	31685	8166
1997-98	61629	13757	34944	7800
1998-99	81220	17429	36302	7790
1999-00	86285	17502		
2000-01	97976	18988	48069	9316
2001-02	110631	20953	49063	9292
2002-03	111321	20094	58386	10539
2003-04	120381	20972	67165	11701
2004-05	136825	23230	69865	11862
2005-06	144948	23081	76617	12200

During the same period, the average annual salary of the non-teaching staff in PMC schools increased from Rs. 1592 to Rs. 76617 in nominal value and from Rs. 4208 to Rs. 12200 in inflation adjusted or real value, the latter giving an average annual rate of increase of 3.1 per cent. (See: Table 12 and Chart 12b.)

Statistical Analysis of Real Expenditure per Student in PMC Schools

Statistical analysis shows that the historical increase in real expenditure per student in PMC school has been primarily due to three main factors, namely, (i) the increase over the period in real average salary of teachers, (ii) decline in enrolment per PMC school and (iii) a shift variable representing the impact of the increased expenditures in recent years, (i.e., from 2003-04 to 2005-06) on account of the new schemes introduced by the PMC. Regression analysis presented in Table 13 shows that these three factors explain 98 per cent of the variance of real expenditure per student in PMC schools over the period of study. (See: Table 13 and Chart 13.)

Table 13. Regression Results

Dependent Variable: REAL_EXP_PER_STUDENT
Method: Least Squares
Date: 07/23/08
Sample (adjusted): 1976 2006
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ENROLEMENT_PER_SCHOOL	-0.768539	0.255370	-3.009515	0.0061
REAL_AV_SALARY_TEACHERS	0.041339	0.002815	14.68390	0.0000
DUMMY_NEW_SCHEMES	293.7564	37.06759	7.924885	0.0000
C	306.8618	143.1378	2.143821	0.0424

R-squared	0.981409	Mean dependent var	545.0904
Adjusted R-squared	0.973086	S.D. dependent var	302.3505
S.E. of regression	43.72545	Akaike info criterion	10.52530
Sum squared resid	45885.95	Schwarz criterion	10.71562
Log likelihood	-143.3542	F-statistic	422.3237
Durbin-Watson stat	2.228631	Prob (F-statistic)	0.000000

The three variables together explain over 98 per cent variation in Real Expenditure per Student.
All estimated coefficients are statistically significant at 1 per cent level.
Since for 3 variables and 28 observations, Du = 1.65< DW < 4-1.65.
We can rejecte the presence of positive and negative serial autcorrelation in the residuals.

What is the relative importance of these three factors in explaining the variance of real expenditure per student in PMC schools? This is a difficult question to answer, because, as is well-known, the answer depends upon the order in which the explanatory variables are introduced in the regression analysis. Given the above mentioned order of the three variables and using the regression equation presented in Table 13. Moreover, it can be computed that the average variance over all possible orderings of the above three explanatory variables accounted for by the real average salary of teachers is 45 per cent, while that accounted for by enrolment per PMC school is 25 per cent and that accounted for by the increased expenditure on the recent new schemes is 28 per cent. Thus while the increase in the real average salary of teachers is the most important variable in explaining the variance of the real expenditure per student in PMC schools, the

decline in enrolment per PMC school accounts for a quarter of that variance on the average when all possible orderings of the explanatory variable are considered.

Table 14. Percentage of Morbidity and Anaemic Students

Year	Medical checkup- Morbidity (%)	Medical checkup -Anaemic students (%)
(1)	(2)	(3)
1975-76	37.19	3.37
1976-77	38.65	3.16
1977-78	37.65	2.85
1978-79	36.30	8.25
1979-80	36.06	8.08
1980-81	43.09	1.48
1981-82	33.00	2.29
1982-83	42.00	2.71
1983-84	50.00	3.84
1984-85	51.00	14.57
1985-86	34.06	2.98
1986-87	16.54	3.23
1987-88	30.25	3.72
1988-89	25.90	6.09
1989-90	50.55	5.16
1990-91	33.00	5.56
1991-92	44.00	9.81
1992-93	40.00	4.66
1993-94	50.00	9.57
1994-95	54.00	8.06
1995-96	45.00	11.29
1996-97	69.14	10.27
1997-98	43.52	6.95
1998-99	40.30	7.96
1999-00		
2000-01	30.27	12.29
2001-02	48.66	16.81
2002-03	58.72	14.57
2003-04	47.10	13.34
2004-05	46.36	14.90
2005-06	41.02	12.09

Health Conditions of Students in PMC Primary Schools:

Apart from the Annual Income Expenditure Statement of the School Board, the Annual Reports of the School Board present some valuable but disturbing statistics regarding the general health condition of the students undergoing medical check up each year. (See Annexure 4). For example, the average percentage of students reported to have been found to be suffering from one or other, major or minor health problem, which we shall refer to as the incidence of morbidity among students, is seen to be quite high around 42 per cent though it shows very large fluctuations around this level ranging from an unbelievably low value of 16.5 per cent in 1986-87 to a very high value of 69 per cent in 1996-97. It is hard to say whether the wide fluctuations in the observed incidence of morbidity is due to variations in the coverage of schools in different areas of the city or due to variations in the care with which medical check ups were conducted and/or recorded, or due to some other reasons. The percentage of anaemic students among those who underwent medical check ups, on the other hand, shows a steady increase over the years from around 3 per cent in 1975-77 to over 11 per cent in 1995-96 and then further to a high level of between 12 and 15 per cent during 2003-06, the increase during the latter period has surprisingly occurred despite the introduction of the Mid Day Meals scheme in 1995-96. (See Table 14 and Chart 14)

It is possible that the increase in the proportion of anaemic students is perhaps the result of entry of children with less well to do economic and social background. This only highlights the need for better implementation and further strengthening of the Mid Day Meals programme, and providing other nutritional supplements in the schools. An even larger percentage of those checked are found to have thread worms. A large number have various kinds of skin diseases, ear and eye diseases and dental problems. How does one expect the children to concentrate on learning when they are uncomfortable because of these various health problems? A number of these problems surely arise on account of lack of hygienic conditions at home and/or in the schools and/or lack of awareness of hygiene among the children. Instilling an awareness of hygiene and hygienic habits among the students and maintaining hygienic conditions in the schools are perhaps the first steps in the children's education. A host of other problems needs to be differently tackled to help children with vision or hearing impairments or speech defects. Some time, simple medical treatment administered at the early stages can be of immense help to the children to get over the problem and can greatly facilitate their learning process. Special efforts of different kind may be required for children who are slow learners for one reason or another. Perhaps, as society, we have so far not paid enough attention to the impediments to learning caused by the children's health problems.

Annexure 1. Number of PMC and Private Primary Schools, Enrolment and Number of Teachers

year	No. of PMC Primary Schools	PMC Enrolment	Employees	Teachers in PMC Primary Schools	Total no of Pvt. Schools	Number of Pvt. Schools Other than English Medium	Pvt. English Medium Primary School Enrolment	Enrolment in Pvt. Primary Schools Other than English Medium	Teachers in Pvt. Schools
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1975-76	182	77412		2176	129	98	10242	42275	1260
1976-77	185	88721		2187	129	94	12029	40458	1239
1977-78	200	93698		2291	129	93	12875	44221	1303
1978-79	205	95878		2291	129	93	13592	43691	1303
1979-80	207	100748		2291	134	94	15194	48799	1333
1980-81	218	102955		2302	134	94	15244	50368	1380
1981-82	218	104032		2302	127	90	15790	51650	1418
1982-83	220	107565		2304	126	90	16405	55732	1442
1983-84	223	102174		2313	126	88	20491	44933	1456
1984-85	225	106823		2350	124	86	23018	49195	1473
1985-86	222	107821		2360	131	89	23966	51427	1492
1986-87	218	107293		2360	130	88	24023	51530	1499
1987-88	218	107345		2360	130	88	24348	51814	1488
1988-89	218	110262		2364	148	92	24853	50993	1563
1989-90	216	108785		2364	155	96	25153	51627	1586
1990-91	216	111430		2364	168	105	27132	54591	1709
1991-92	216	110571		2364					
1992-93	220	111374		2364	176	107	27186	57864	1737
1993-94	225	112732		2363	181	109	27336	58139	1742
1994-95	232	112893		2363	195	114	27741	58852	
1995-96	232	113003		2363	194	115	28216	60706	
1996-97	232	111562		2402	198	119	29590	62462	
1997-98	235	110762		2404	197	116	32160	60119	
1998-99	246	105943		2404	200	118	36187	65277	
1999-00									
2000-01	314	119927		3015	263	165	43293	83230	
2001-02	315	117323	3370	3015	277	170	47483	84727	
2002-03	300	110887	3290	2935	335	190	48485	91065	
2003-04	302	104391	3474	2932	335	190	49985	92306	
2004-05	296	113094	3184	2765	356	192	54996	93426	
2005-06	287	105587	3617	2537	373	196	57129	96749	

Annexure 2.
Table 1. Pune School Board Actual Income Expenditure Statement, 2005-06

Sr. No.	Details of Income Details of Head	Rupees	Sr. No.	Details of Expenditures Details of Head	Rupees
1	Balance at the Beginning of the Year	22575372	1	Office Expenditure	
2	Grant from Pune Municipal Corporation	630000000		a. Leave Salary, Pension Contribution, etc.	140009553
3	Grant from State Government	251095300		b.Salaries of the School Board Office Staff	16252622
4	Interest from Donation Fund	1764		c.Share of the School Board in Provident Fund Contribution	0
5	Leaving Certificate Fees for Students who left Schools	16789		d. Office Stationery, Forms and Other Printing	429140
6	Fines, Witness Allowances, etc.	0		e. Other Office Expenditure	1965836
7	Fees for English Medium	3399084		Sub-total (1)	158657151
8	Tution Fees for Balwadis	108360	2	Expenditure on (PMC?) Primary Schools	
9	Fees for External Examination	6220		a.Expenditure on Teachers, Schools, and Educational Material	
10. a	Cash Collection	738540		1. Salaries of Teachers and Class IV Employees in the Schools	493620516
b	Interest on Primary Education Fund	0		2. Share of Provident Fund Contribution and Gratuity	0
c	Sale of Handicrafts Products	0		3. Rent for School Premises and Taxes	9824821
d	Collection of Audit Fees	8255		4. Minor Repairs of School Premises	0
e	Sale of Application Forms for Teachers' Provident Fund	0		5. Furniture and Equipment	9304562
f	Share of Electricity Bills	0		6. Class Books, Maps, Library Books, Magazines	222478
g	Other Items	0		7. Physical Education Equipment and Scouts and Girl Guides	2649396
h	Auction Sale of Old Materials	2686		8. School Forms, etc	6275589
11	Medical assistance Scheme	0		9. School Equipment	699996
12	a. Advances	17051314		10.Census Operations	0
	b. Deposits	30417399		11.Sports, Special Events and School Trips	5242001
				12. Other Expenditure	57425051

(contd.)

Annexure 2.
Table 1. ***(Concld.)***

Sr. No.	Details of Income Details of Head	Rupees	Sr. No.	Details of Expenditures Details of Head	Rupees
				13. Furniture Repairs, Transport, Sundry Expenses, Medical Assistance to Staff, Uniforms for Peons, Garden and Nature Coaching, Examiner' Honorarium, School Improvement Campaign	3131547
				14. Vidya Niketan	8643933
				Sub-total 2(a)	597039890
				b.Student Benefits	
				1. Scholarships and Prizes	608421
				2. Slates and Books for Students	2841402
				3. School Uniforms for Students	35164773
				4. Grants to Aided Private Primary Schools	3945843
				Sub-total 2(b)	42560439
			3	Ad Hoc Expenditure	
				a. Ad Hoc Expenditure	44205310
				b. Advances Deposits	34125154
				c. Unspent Balance at the End of the Year	79133139
				Sub-total (3)	157463603
	Total Receipts	955421083		Total Expenditure	955721083
				Discrepancy 1 (Expenditure -Recipts)	300000
	Unspent Balance at the End of the Previous Year	16430765		Discrepancy 2 (Unspent Balance at the Beginning of The Year-Unspent Balance at the End of the Previous Year)	6144607

Table 2. Break-up of Expenditure on PMC Schools for the Year 2005-06

(i)	Salaries including retirement Benefits	649882691
(ii)	Expenditure on PMC Schools	103419374
(iii)	Student benefits	38614596
(iv)	Other Expenditure	46600286
	Total	838516947
	Expenditure on PMC Schools	838516947

N.B.: For definitions see Text.

Annexure 3. PMC Board Expenditure and Receipts (in Rs.)

Year	Expenditure Office	Expenditure PMC Primary Schools Excl. Student Benefits A	Expenditure PMC Student Benefits B	Expenditure PMC Primary Schools	Expenditure PMC Grants to Private Schools	Expenditure PMC Ad Hoc	Expenditure on PMC Primry Schools Excl. Grants to Pvt. Schools
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1975-76	323195	13625165	932362	14557527	1719207	0	14880722
1976-77	379432	14572124	558792	15130916	2357193	0	15510348
1977-78	416635	16485044	1116841	17601885	1579479	0	18018520
1978-79	486581	20196369	1457668	21654037	3539016	0	22140618
1979-80	535397	23243853	1290477	24534330	4198330	0	25069727
1980-81	560344	24421683	1303319	25725002	8224620	0	26285346
1981-82	751930	28995660	1580718	30576378	8725787	0	31328308
1982-83	992400	32504062	1801080	34305142	5322443	0	35297542
1983-84	1063114	40705453	2486059	43191512	8674870	0	44254626
1984-85	1128074	41594053	2566884	44160937	8722754	0	45289011
1985-86	1291811	47133071	2664103	49797174	9224723	0	51088985
1986-87	1724690	51873759	1566598	53440357	12318553	0	55165047
1987-88	1957994	68061685	1676546	69738231	17403130	0	71696225
1988-89	2064200	74218854	2944760	77163614	19095383	0	79227814
1989-90	2355813	87699499	3502859	91202358	23824738	0	93558171
1990-91	2736264	117856912	3573306	121430218	32765372	0	124166482
1991-92	2670379	112454699	5901507	118356206	32461048	134804	121161389
1992-93	3486418	135081927	7263849	142345776	38444751	373530	146205724
1993-94	3905218	142216299	9409222	151625521	39079357	421283	155952022
1994-95	4161436	153735019	12273759	166008778	43573911	183171	170353385
1995-96	4689216	185493762	3970423	189464185	56944523	169594	194322995
1996-97	10681667	222266397	13323749	235590146	59922864	0	246271813
1997-98	6426164	255401165	13524207	268925372	39554916	1604743	276956279
1998-99	6412229	278450025	13868942	292318967	5379843	136415	298867611
1999-00							
2000-01	6316642	460487582	25030983	485518565	4300344	1137756	492972963
2001-02	19633918	569677959	15392415	585070374	2253663	1714498	606418790
2002-03	25024332	455178708	17497469	472676177	4143473	2608633	500309142
2003-04	123781784	540979014	24765170	565744184	1982140	4568549	694094517
2004-05	246191974	602417193	24765143	627182336	1982140	4568549	877942859
2005-06	158657151	597039890	38614596	635654486	3945843	44205310	838516947

(Contd.)

Annexure 3. ***(Concld.)***

Year	Retirement Benefits Office	Retirement Benefits PMC Schools	Retirement Benefits Total	Salaries Office	Salaries PMC Schools	Salaries including Retirement Benefits	Balance at the end of the Year	Total Expenditure	Total Receipts
(1)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1975-76	4922	367279	372211	271616	12018334	12662161	2970099	20041142	20041142
1976-77	0	444170	444170	290735	12681629	13416534	94607	18906939	18906939
1977-78	15510	594140	609650	318356	14514861	15442867	31973	20520674	20520674
1978-79	32314	630311	662625	377122	17655283	18695030	466574	27539154	27539154
1979-80	28084	900000	928084	422199	20184254	21534537	578142	31005158	31005158
1980-81	23648	1625000	1648648	431208	20745339	22825195	2584938	38337845	38337845
1981-82	30974	2000000	2030974	484278	23192267	25707519	206075	41502731	41505731
1982-83	41871	2326778	2368649	686267	27352584	30407500	1564769	43628673	43628673
1983-84	33951	3300000	3333951	781890	34117793	38233634	1261555	55292288	55292288
1984-85	58725	4500000	4558725	846840	34549032	39954597	821829	56852894	56852894
1985-86	69444	3000000	3069444	1026122	40422350	44517916	848207	63032309	63032309
1986-87	52920	4812716	4865636	1291917	43487571	49645124	3738122	72941375	72941375
1987-88	51969	7000000	7051969	1345672	55497517	63895158	15300	90809446	90794146
1988-89	78895	9000000	9078895	1431370	60764386	71274651	214530	101299815	101299815
1989-90	89225	11030000	11119225	1647365	71813068	84579658	95601	119780917	119780917
1990-91	42959	11000000	11042959	2100171	102689434	115832564	503253	160053738	160053740
1991-92	0	12302000	12302000	1990483	93334522	107627005	1786835	158147756	158147756
1992-93	0	18000000	18000000	2515240	104835216	125350456	-167255	188955971	188955971
1993-94	0	19500000	19500000	3003454	111722548	134226002	1353406	203890512	203890512
1994-95	0	18700000	18700000	3097549	125609795	147407344	4221297	247506264	247506264
1995-96	15534	26850000	26865534	3410841	149120617	179396992	6292892	266599815	266599815
1996-97	8424	30510000	30518424	9956644	172683372	213158440	14719672	338549649	338549649
1997-98	0	43500000	43500000	5041149	191436231	239977380	3390821	367394703	367394701
1998-99	0	43500000	43500000	4926926	210624973	259051899	35157416	361058696	361058696
1999-00							80416396		
2000-01	12689	76500000	76512689	4903361	343208778	424624828	25822269	568898232	568898232
2001-02	32806	100000000	100032806	18035063	440644702	558712571	57372904	704719423	704719421
2002-03	0	90356393	90356393	23711430	336351316	450419139	79652609	603661096	744221902
2003-04	101000000	0	101000000	21042102	442889737	564931839	16430765	734816649	734816649
2004-05	112000000	0	112000000	28121258	452577307	592698565	22575372	795544412	795544412
2005-06	140009553	0	140009553	16252622	493620516	649882691	79133139	955721083	955721083

Annexure 4. Results of Medical Check-up of PMC Primary School Students

Year	No. of students checked	Medical checkup % checked	Medical checkup Morbidity (%)	Anaemic Students in the Check-up	Medical checkup Anaemic Students (%)
(1)	(2)	(3)	(4)	(5)	(6)
1975-76	11293	14.59	37.19	381	3.37
1976-77	12515	14.11	38.65	395	3.16
1977-78		21.37	37.65	569	2.85
1978-79	12613	13.16	36.3	1041	8.25
1979-80	11914	11.83	36.06	963	8.08
1980-81	14429	14.01	43.09	214	1.48
1981-82	15442	14.84	33	354	2.29
1982-83	14050	13.06	42	381	2.71
1983-84	16779	16.42	50	645	3.84
1984-85	15877	14.86	51	2314	14.57
1985-86	15092	14	34.06	449	2.98
1986-87	14154	13.19	16.54	457	3.23
1987-88	16000	14.91	30.25	595	3.72
1988-89	16240	14.73	25.9	989	6.09
1989-90	16505	15.17	50.55	852	5.16
1990-91	29193	26.2	33	1623	5.56
1991-92	18350	16.6	44	1800	9.81
1992-93	22790	20.46	40	1062	4.66
1993-94	9957	8.83	50	953	9.57
1994-95	6623	5.87	54	534	8.06
1995-96	10505	9.3	45	1186	11.29
1996-97	95788	85.86	69.14	9835	10.27
1997-98	74577	67.33	43.52	5180	6.95
1998-99	75315	71.09	40.3	5998	7.96
1999-00					
2000-01	68677	57.27	30.27	8441	12.29
2001-02	20924	17.83	48.66	3517	16.81
2002-03	34781	31.37	58.72	5067	14.57
2003-04	37615	36.03	47.1	5018	13.34
2004-05	35146	31.08	46.36	5236	14.9
2005-06	51257	48.54	41.02	6198	12.09

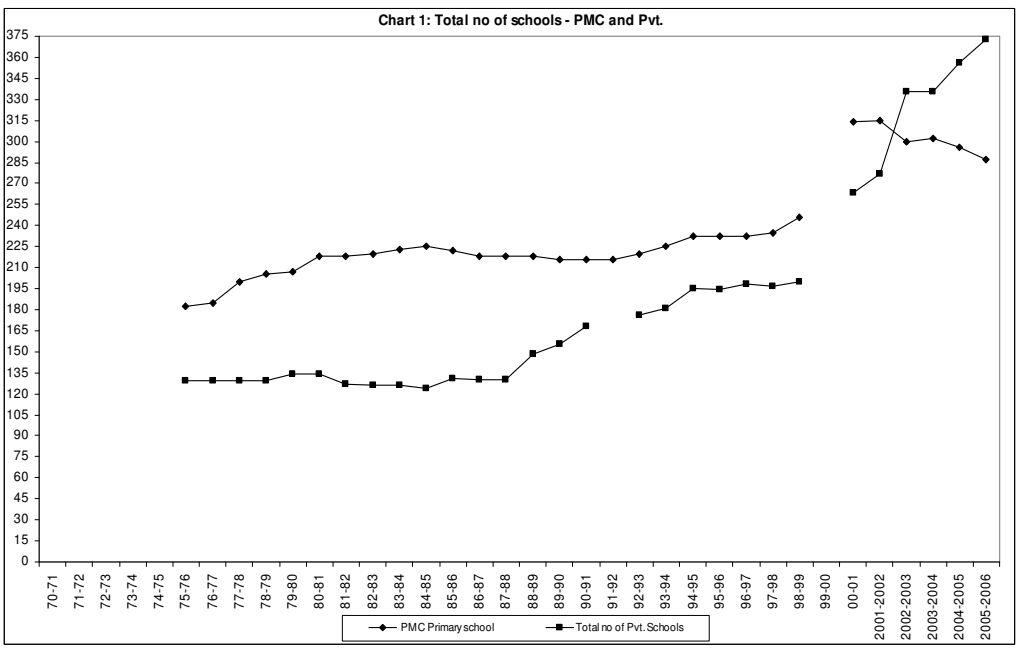


Chart 1: Total no of schools - PMC and Pvt.
375
360
345
330
315
300
285
270
255
240
225
210
195
180
165
150
135
120
105
90
75
60
45
30
15
0
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
PMC Primary school
Total no of Pvt. Schools

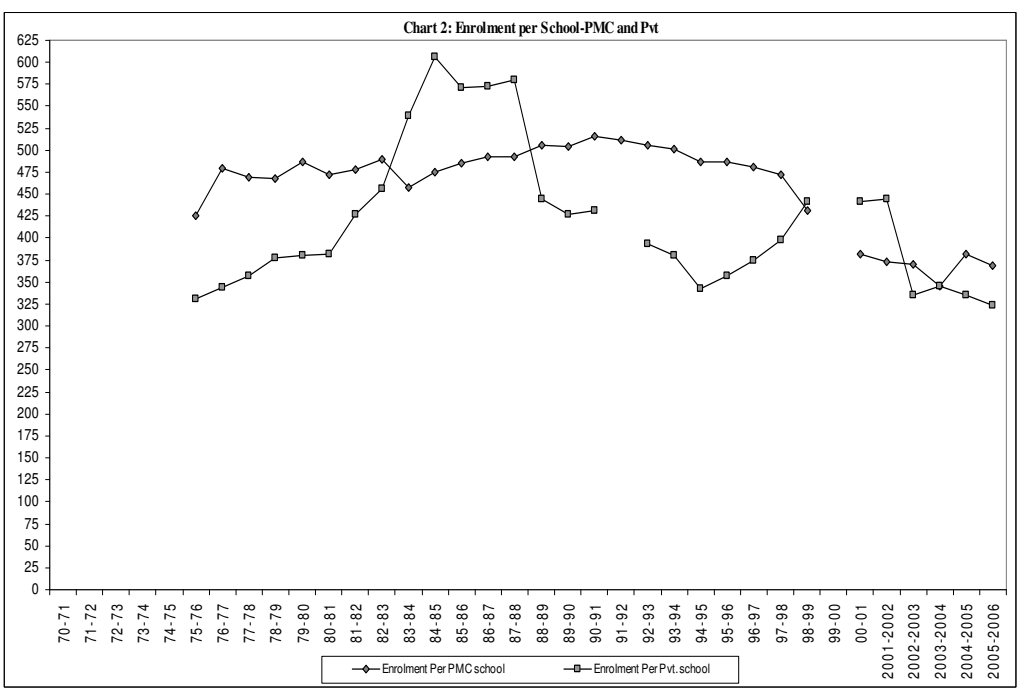


Chart 2: Enrolment per School-PMC and Pvt
625
600
575
550
525
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
Enrolment Per PMC school
Enrolment Per Pvt. school

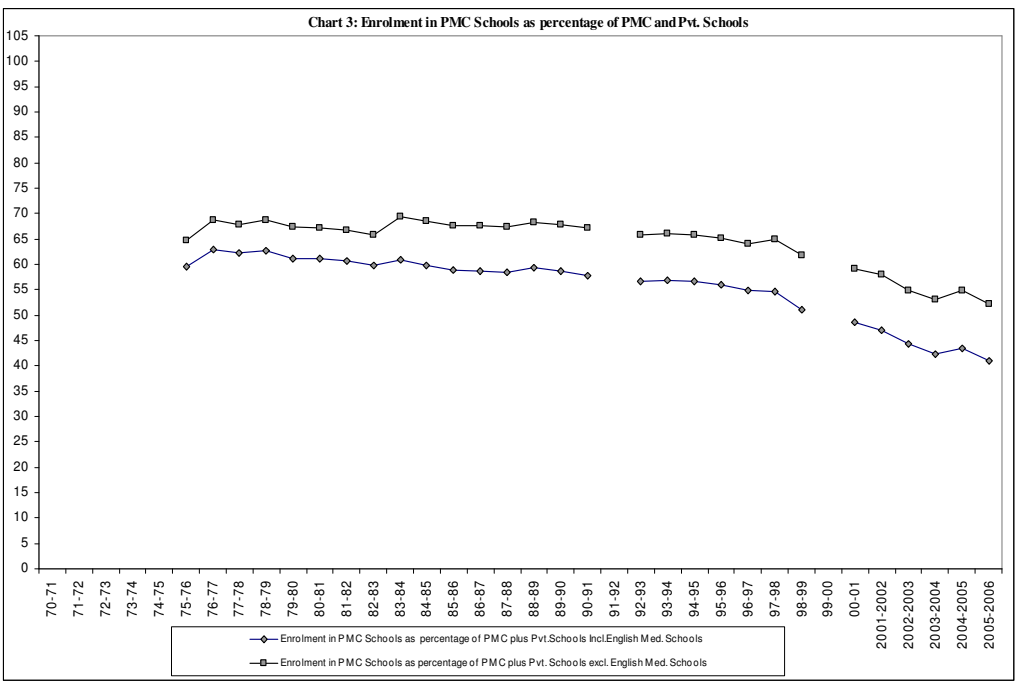


Chart 3: Enrolment in PMC Schools as percentage of PMC and Pvt. Schools
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
Enrolment in PMC Schools as percentage of PMC plus Pvt.Schools Incl.English Med. Schools
Enrolment in PMC Schools as percentage of PMC plus Pvt. Schools excl. English Med. Schools

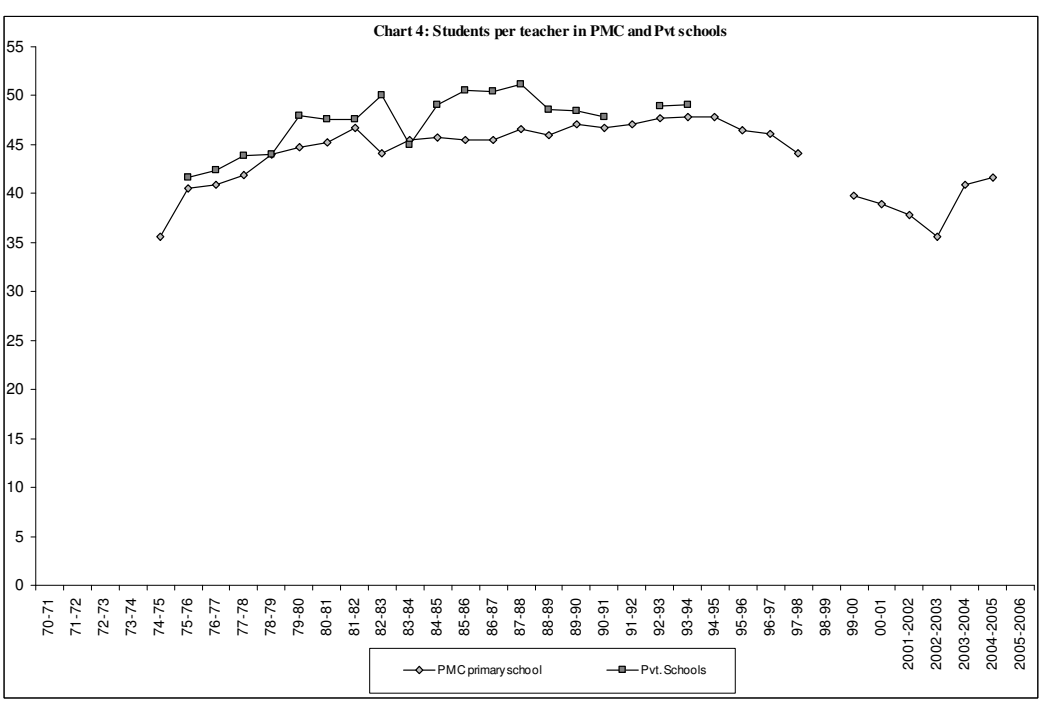


Chart 4: Students per teacher in PMC and Pvt schools
55
50
45
40
35
30
25
20
15
10
5
0
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
PMC primary school
Pvt. Schools

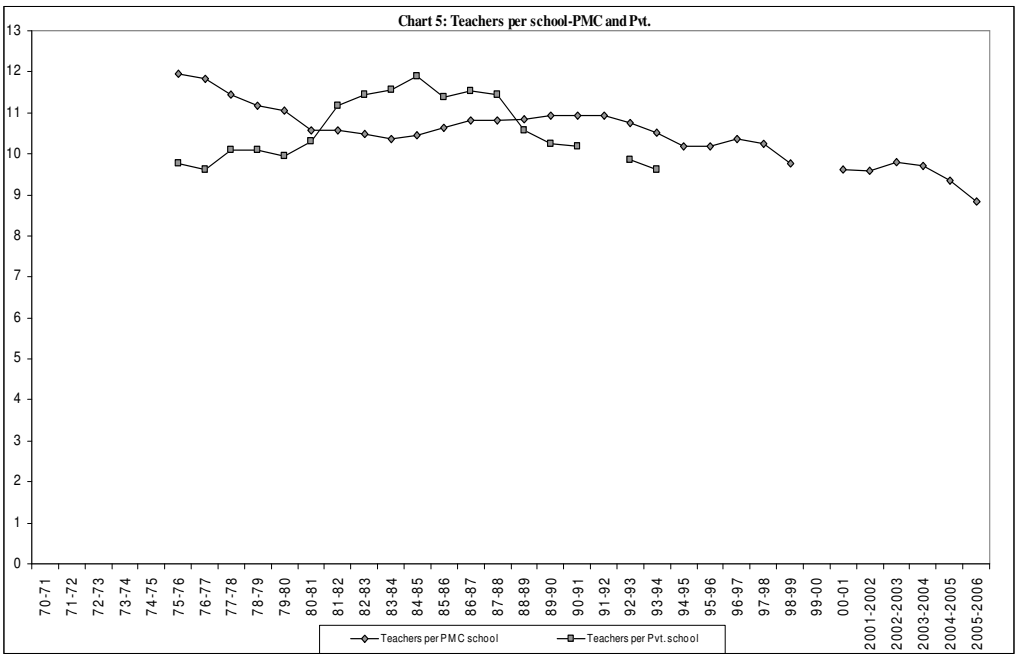


Chart 5: Teachers per school-PMC and Pvt.
13
12
11
10
9
8
7
6
5
4
3
2
1
0
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
Teachers per PMC school
Teachers per Pvt. school

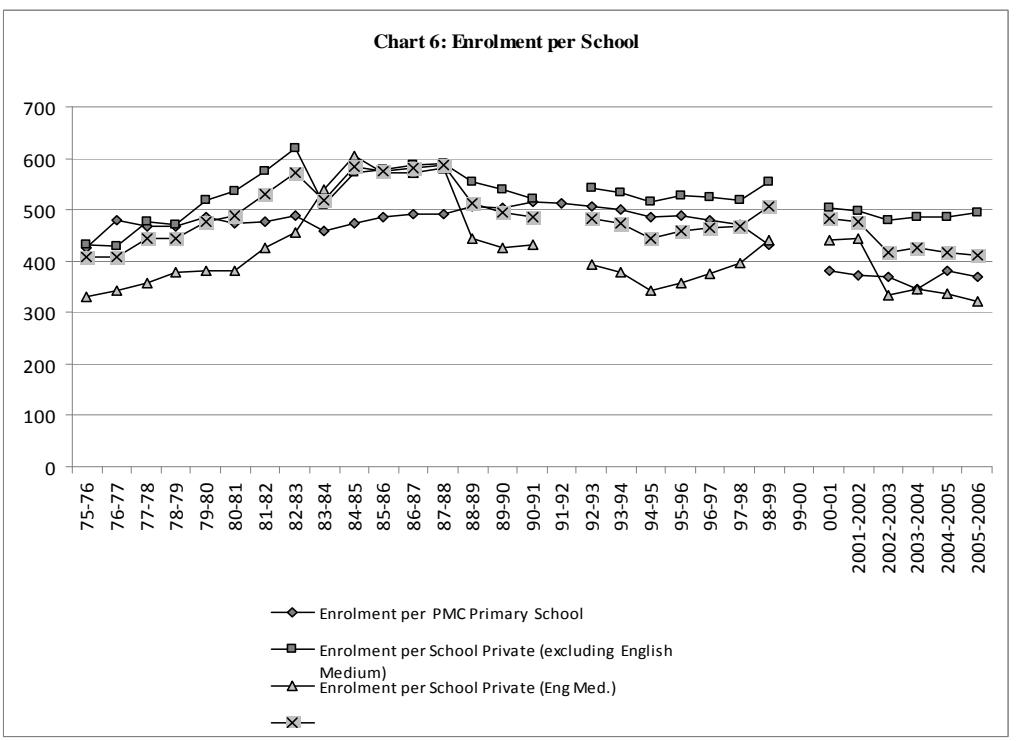


Chart 6: Enrolment per School
700
600
500
400
300
200
100
0
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
Enrolment per PMC Primary School
Enrolment per School Private (excluding English Medium)
Enrolment per School Private (Eng Med.)

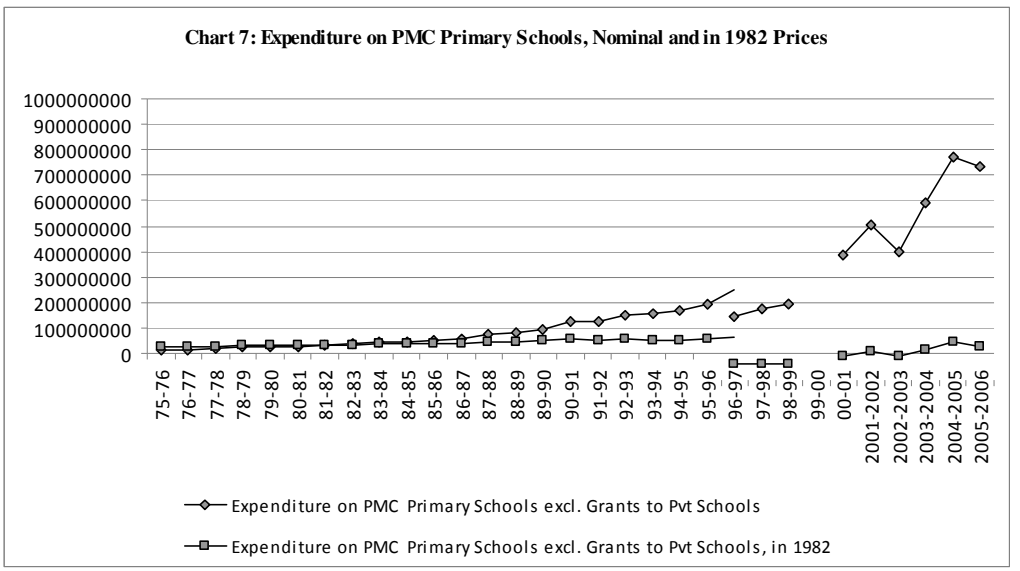


Chart 7: Expenditure on PMC Primary Schools, Nominal and in 1982 Prices
1000000000
900000000
800000000
700000000
600000000
500000000
400000000
300000000
200000000
100000000
0
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
Expenditure on PMC Primary Schools excl. Grants to Pvt Schools
Expenditure on PMC Primary Schools excl. Grants to Pvt Schools, in 1982

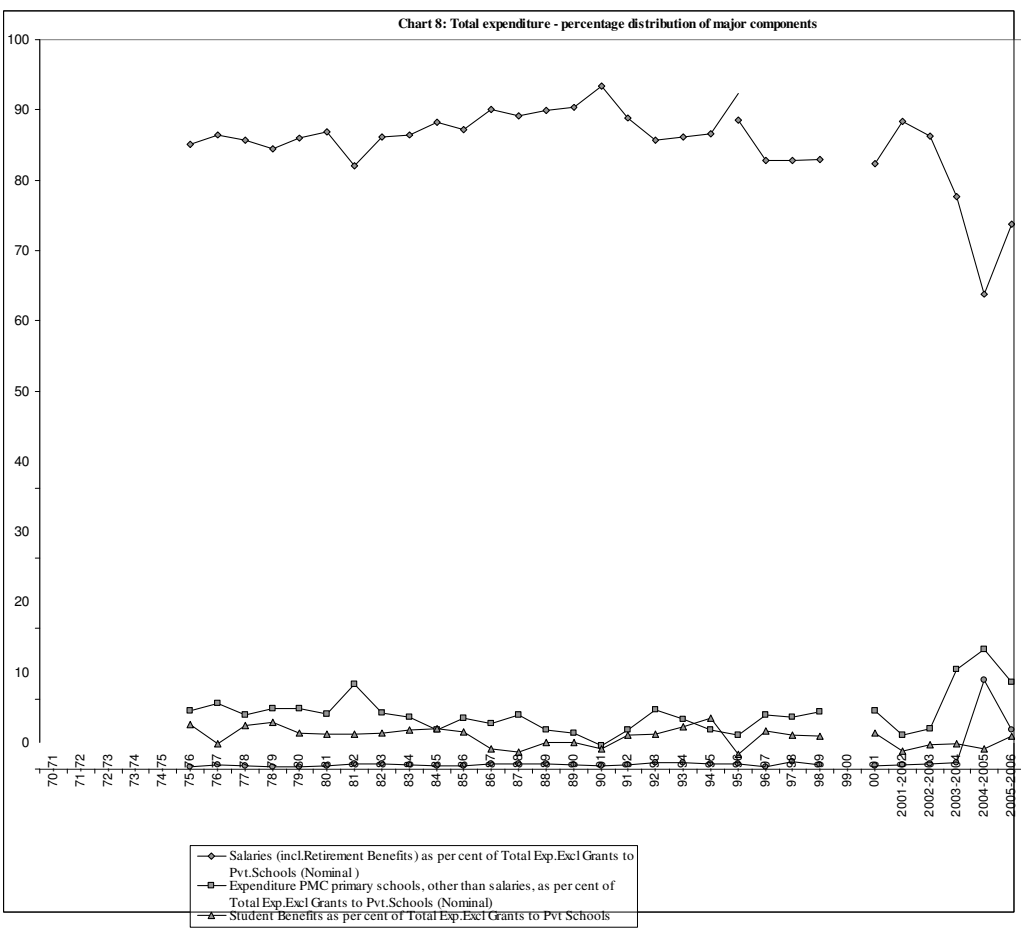


Chart 8: Total expenditure - percentage distribution of major components
100
90
80
70
60
50
40
30
20
10
0
Salaries (incl.Retirement Benefits) as per cent of Total Exp.Excl Grants to Pvt.Schools (Nominal)
Expenditure PMC primary schools, other than salaries, as per cent of Total Exp.Excl Grants to Pvt.Schools (Nominal)
Student Benefits as per cent of Total Exp.Excl Grants to Pvt Schools

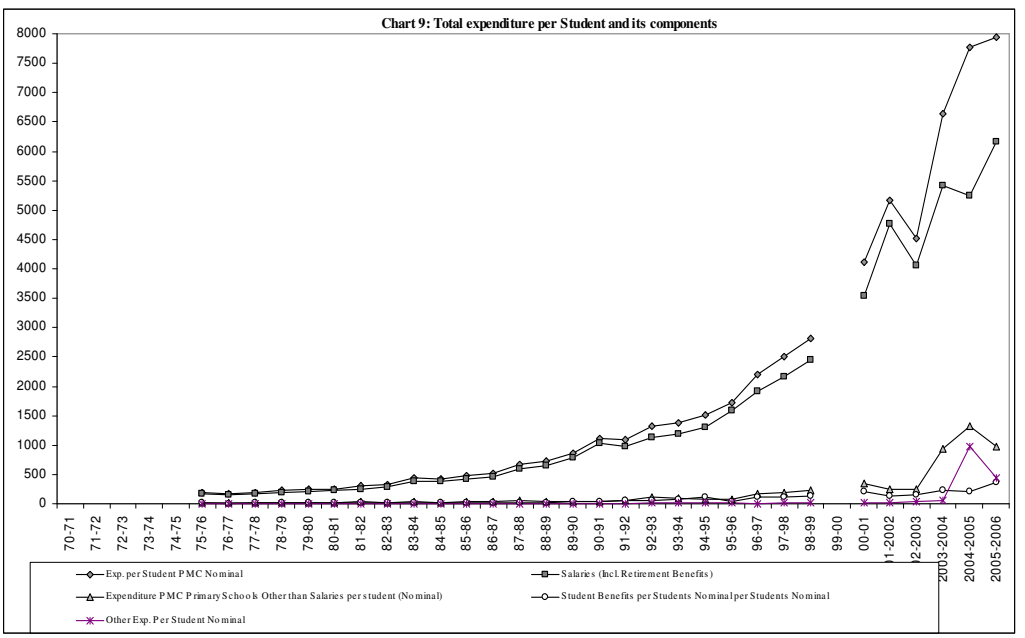


Chart 9: Total expenditure per Student and its components
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
01-2002
02-2003
2003-2004
2004-2005
2005-2006
Exp. per Student PMC Nominal
Salaries (Incl Retirement Benefits)
Expenditure PMC Primary Schools Other than Salaries per student (Nominal)
Student Benefits per Students Nominal per Students Nominal
Other Exp. Per Student Nominal

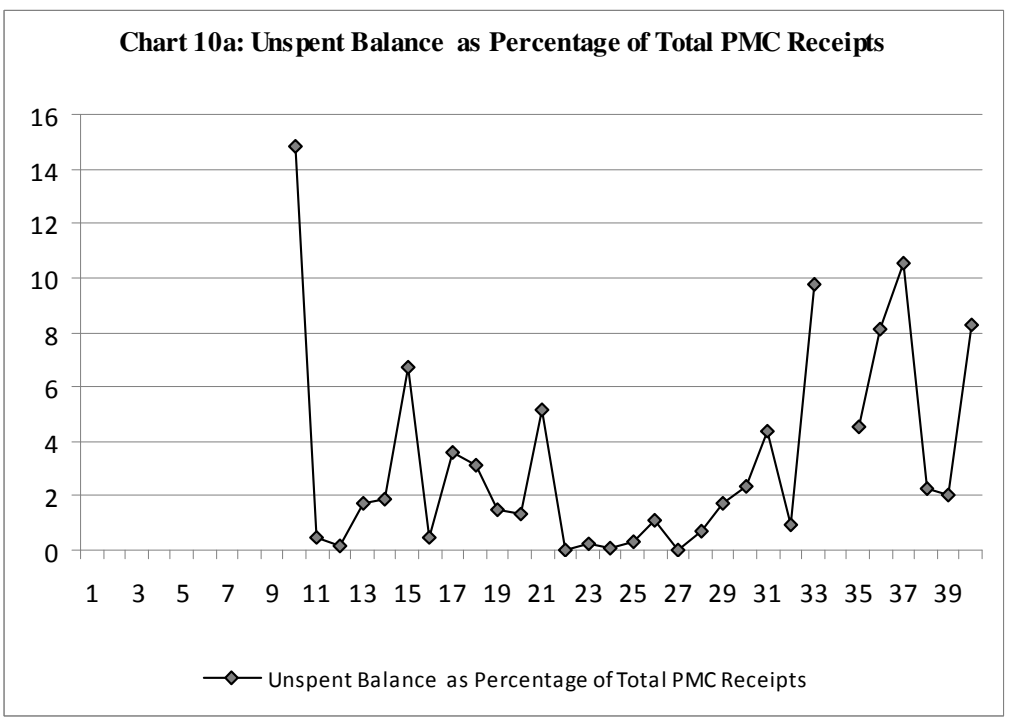


Chart 10a: Unspent Balance as Percentage of Total PMC Receipts
16
14
12
10
8
6
4
2
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39
Unspent Balance as Percentage of Total PMC Receipts

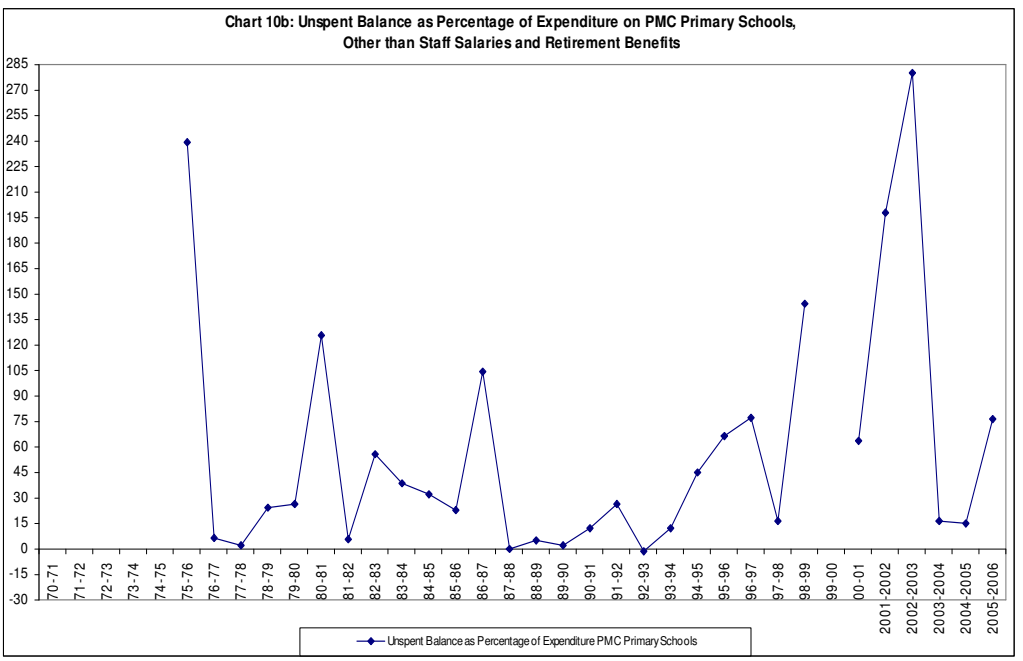


Chart 10b: Unspent Balance as Percentage of Expenditure on PMC Primary Schools, Other than Staff Salaries and Retirement Benefits
285
270
255
240
225
210
195
180
165
150
135
120
105
90
75
60
45
30
15
0
-15
-30
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
Unspent Balance as Percentage of Expenditure PMC Primary Schools

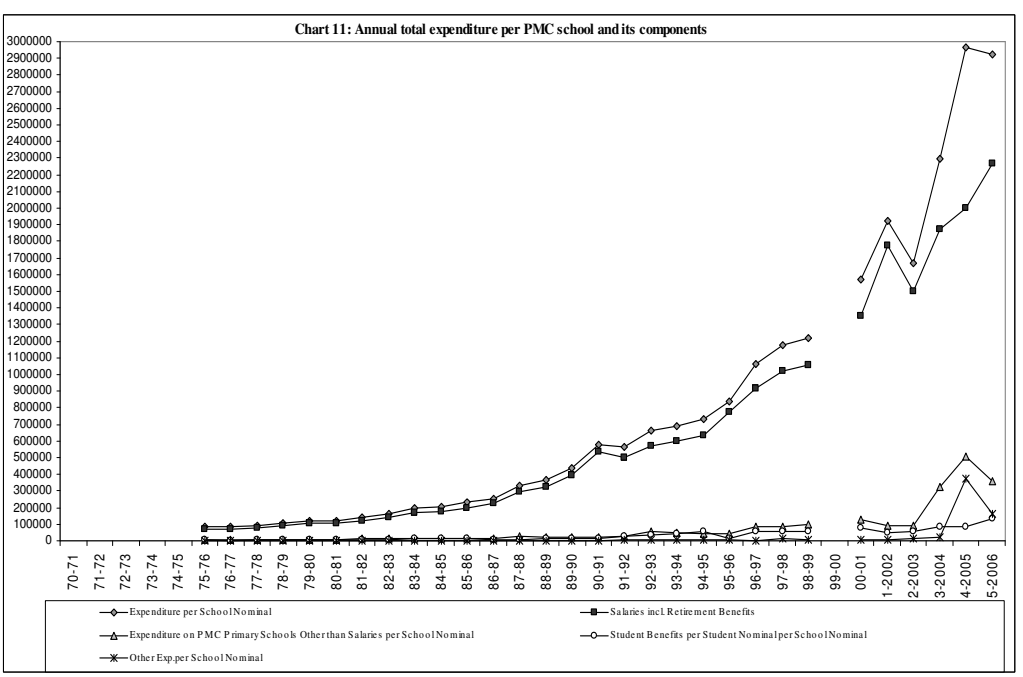


Chart 11: Annual total expenditure per PMC school and its components
3000000
2900000
2800000
2700000
2600000
2500000
2400000
2300000
2200000
2100000
2000000
1900000
1800000
1700000
1600000
1500000
1400000
1300000
1200000
1100000
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
1-2002
2-2003
3-2004
4-2005
5-2006
Expenditure per School Nominal
Salaries incl. Retirement Benefits
Expenditure on PMC Primary Schools Other than Salaries per School Nominal
Student Benefits per Student Nominal per School Nominal
Other Exp. per School Nominal

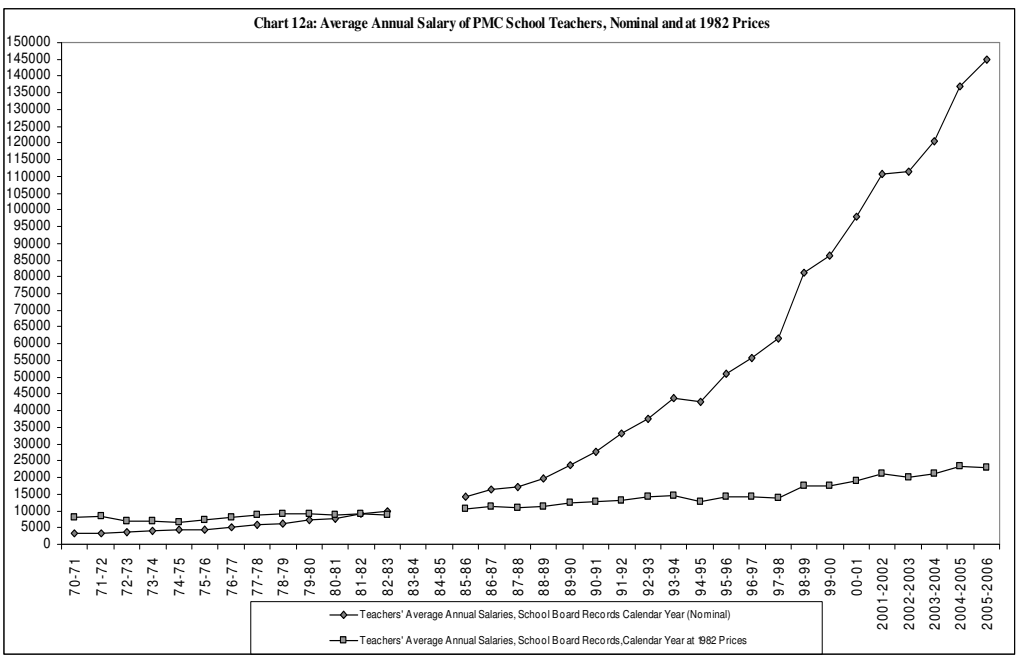


Chart 12a: Average Annual Salary of PMC School Teachers, Nominal and at 1982 Prices
150000
145000
140000
135000
130000
125000
120000
115000
110000
105000
100000
95000
90000
85000
80000
75000
70000
65000
60000
55000
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
Teachers' Average Annual Salaries, School Board Records Calendar Year (Nominal)
Teachers' Average Annual Salaries, School Board Records,Calendar Year at 1982 Prices

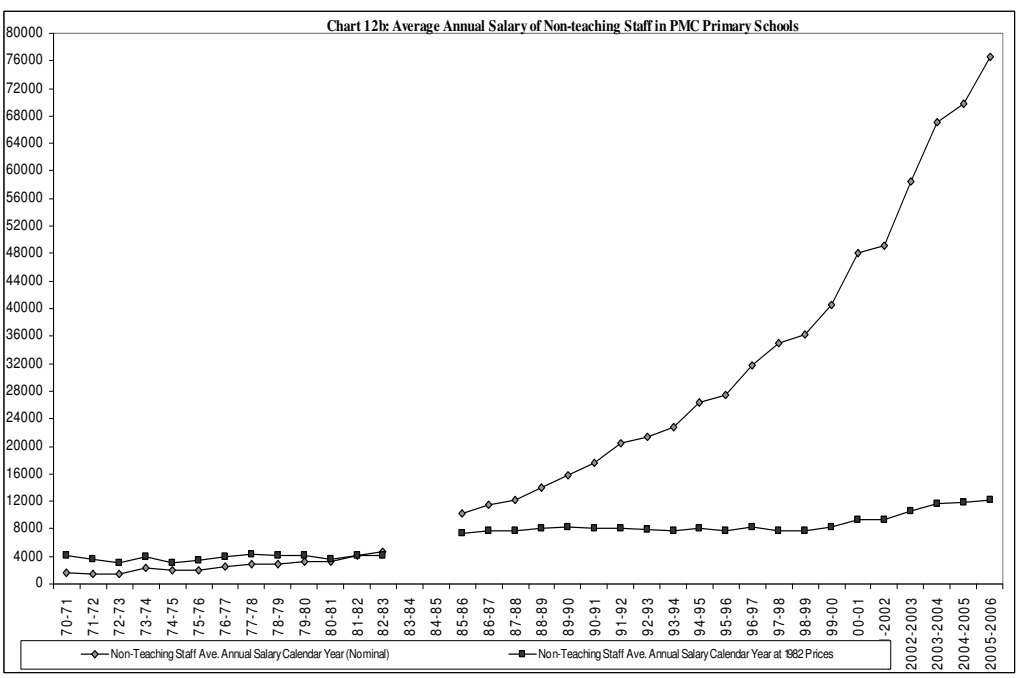
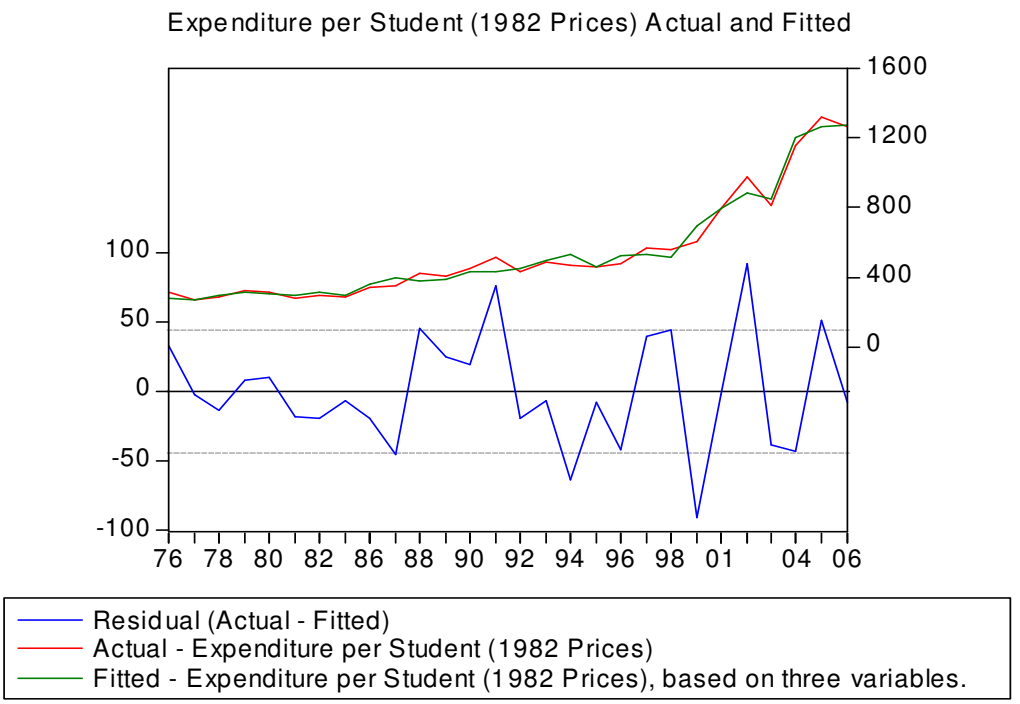
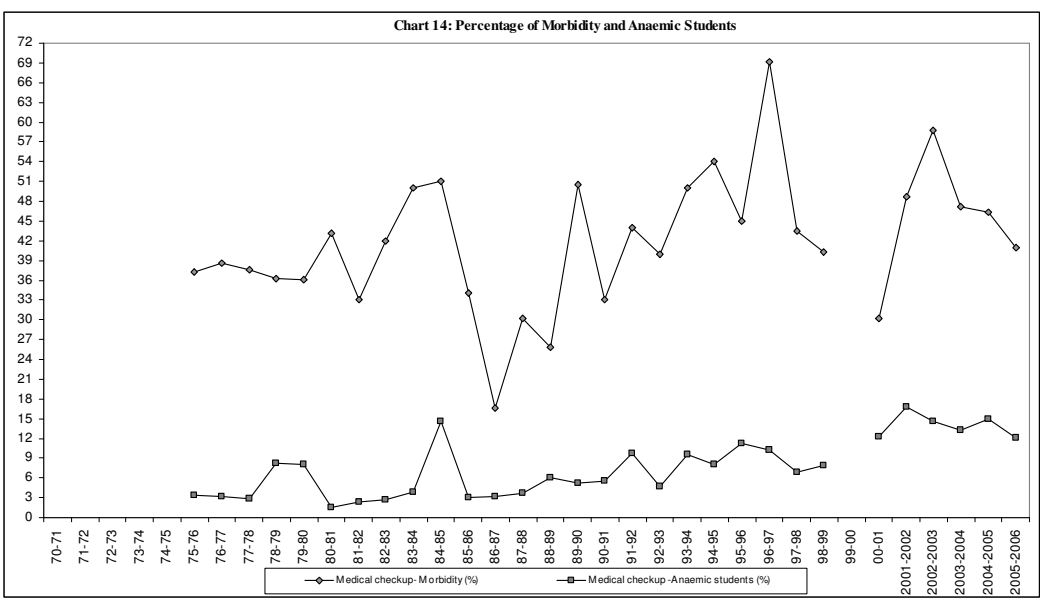


Chart 12b: Average Annual Salary of Non-teaching Staff in PMC Primary Schools
80000
76000
72000
68000
64000
60000
56000
52000
48000
44000
40000
36000
32000
28000
24000
20000
16000
12000
8000
4000
0
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
2002-2003
2003-2004
2004-2005
2005-2006
Non-Teaching Staff Ave. Annual Salary Calendar Year (Nominal)
Non-Teaching Staff Ave. Annual Salary Calendar Year at 1982 Prices

Chart 13: Expenditure per Student (1982 Prices) Actual and Fitted, Based on Enrolment per School, Average Real Salary of Teachers and New Schemes





4. A STUDY OF CHILDREN'S LANGUAGE ABILITIES

Varsha Sahasrabuddhe*

The first objective of this research project was to study how the numbers of the children enroled in the schools run by PMC have changed over time. The second objective was to evaluate the level of understanding of the students in these schools. It was decided at the outset that the study would primarily focus on evaluating the language and mathematical (arithmetical) abilities of the students, rather than those in respect of all the subjects taught in the schools. Children's abilities in these two subjects are, so to speak, the foundation of their overall educational abilities and performance. Therefore, these abilities were evaluated in a study conducted in accordance with the standard principles and methods of sample surveys. Out of these, the findings in respect of language abilities are presented in this chapter. The detailed explanation of the sample design and the sampling procedure for selection of the schools and the students in them, to whom the tests for assessing language and arithmetical abilities were to be administered, adopted for the present field study is given in Appendix C. Appendix C also reports the criteria followed for the selection of investigators, the training imparted to the selected investigators and the procedure laid down for the conduct of the tests, which were administered to the students.

Since Independence, various education commissions at the national level have examined the diverse issues having a bearing on the country's educational system and have suggested numerous reforms in primary education. Various schemes have been implemented and missions have been launched at the national and state levels for universalising primary education. From time to time, several important changes were made in the policies relating to primary education. These were supposed or expected to lead to an improvement in quality of primary education. Massive expenditure was incurred on teacher training. Various tests were administered to students on a large scale under many schemes; their results have also been published in various reports. Teachers and students were directed and made to work for longer hours. Despite all this, one regrets to admit to the reality that universalisation has not been accompanied by perceptible improvement in quality.

Importance of language development

Since Marathi is the medium of instruction in the schools where the present survey was carried out, mastery over Marathi becomes essential for the students to be able to understand other subjects. The difficulties faced by the students in mastering Marathi need to be studied extensively and minutely and then remedial measures need to be taken; only then would children understand other subjects well because if they do not know the language well in the first place, if their language abilities are not up to the mark, their understanding of all other subjects can be seriously hampered. And if this is not detected in time, one could end up getting or forming the impression that a child is basically ignorant of a given subject. If countless children are unable to read and write, correctly and fluently, the very orthography of the Marathi alphabets, obviously they would not understand difficult words or concepts in mathematics, science, history, geography, and so on, nor would they be able to read and write about them. Therefore, it was decided to undertake this survey, with a view to finding out the precise nature of difficulties that children face in the process of learning.

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It must be mentioned here that our task of administering the actual tests under this survey was facilitated by the fact that the Education Board of PMC wrote suitable letters to the schools selected for the survey.

Tests of Marathi: Nature and Design

For students who study in Marathi-medium schools, Marathi is important in many different ways in their school life. Language is, of course, important as a subject by itself, even as it is important as a medium for learning other subjects. Mastering the language is therefore essential for understanding other subjects. The prevailing pattern of our examinations entails, first, an understanding of the contents of textbooks and then their presentation in examination papers. Hence, it is important that students be able to read and understand the contents of textbooks in standard Marathi and write consistently in standard Marathi.1 The importance of language development is underscored considering the close connection that language development has with such things as imagination, thinking, expression, decision-making capacity, and so on.

Before the tests

The first challenge in this survey was to develop appropriate tests for Marathi. While devising them, the background of a majority of the students to whom the tests were meant to be administered was kept in mind. Most of these students are first-generation literates in their families. They do not see anybody reading or writing at home, nor do they get even to see any magazine, book or any other written matter or text. If they commit errors while reading or writing, there is nobody in their family who can correct them. It is highly probable that what they speak at home is not standard Marathi.[2] These factors were sympathetically kept in mind while devising the tests and determining the criteria for different levels of performance. At the same time, the mental state of these children, as also what they like at their age, was kept in mind; their span of attention was also taken into consideration. The manner of administering the test was kept flexible in order to hold the children's attention through the duration of the test.

Given the possibility of the responses of the children getting adversely affected by the fact that an unknown person was conducting the test, considerable thinking went into the prior steps to be taken and ways to be adopted for establishing rapport with the children. Various little but important things were thought of in advance and appropriate instructions were given to the investigators administering the tests-such as smiling at the children, chatting with them to put them at ease, patting them on the back to see whether their fear has abated, asking a child to draw a picture if he/she is tired, encouraging them by friendly remarks or exhortations like "you can do it", "please try", etc.

Pencils and erasers were supplied to the children. They were also given a cardboard pad to hold below the answer sheet, so that their handwriting would be legible.

Only boys and girls from Standard I to Standard IV were to be administered the test. The objective of the test was to see whether, at the end of Standard IV and on the threshold of Standard V, a student - who had entered school in Standard I and after passing through the intermediate

1. The textbooks used in the schools and the language used in writing in the schools always and everywhere in Maharashtra are in what is referred to here, for want of a better nomenclature, *standard* Marathi, often considerably at variance from the dialects spoken in the students' homes.

2. Indeed, we discovered that the mother tongue of a significant number of students from migrant families in the schools in the periphery of the city happened to other than Marathi. We were, however, not able to design our tests to address this problem.

standards had reached and completed Standard IV, - had, at the beginning of Standard V, developed the language ability expected at the end of Standard IV. Naturally, no test was given to students in Standard I. It was assumed that students going up from Standard I to Standard II had developed the language skills expected to be developed during Standard I-and tests were developed to evaluate whether or not those who had gone to Standard II in fact had those skills. These tests have been called, throughout this study, as 'Grade 1 tests'. Similarly, 'Grade 2 tests', 'Grade 3 tests' and 'Grade 4 tests' were developed for the students who had gone to Standards III, IV and V, respectively. The tests were administered from July to September, that is, at the beginning of the school year, in 2007. All the aspects of language development that were to be tested were incorporated in all these four tests.

If the children's responses were found to be not satisfactory in their own Grade (Standard) as explained above, it was considered necessary to give them the tests meant for the earlier or lower Grade (Standard) immediately. Otherwise, if that were to be done after the marking, it would have been necessary to call the children all over again and the process of administering the test would have become complicated and much more time would have been needed. As a result, the process of evaluation would also have been delayed. Considering all this, a method of testing was developed by which the performance level of the children's responses could be determined then and there, on the spot.

Four-colour response sheets

As just mentioned, it was essential in this test to see the responses and determine their performance level then and there, because that was necessary to decide whether or not to give the child the test for the lower Grade. For this, it was also necessary that the exact page for the test for each Grade should be quickly found. This could be done accurately and quickly by using different-coloured paper for the test sheets for each Grade. For written responses, the children were given a separate answer sheet.

Context: Aspects of language development, not textbook content

The objective of the tests was not to examine whether the children had understood the contents of their textbooks, whether of Marathi or any other subject; rather, it was to see what level the children had reached in regard to various aspects of language development and, also, to understand what difficulties, if any, the children face in the process of that development. Therefore, the tests were devised with a view to evaluating the following five aspects of language development:

* Listening and comprehension
* Verbal expression
* Reading with comprehension
* Dictation
* Independent writing

The questions were framed in such a way that it would be possible to see whether the students had developed the abilities which may be considered to be pre-requisite for language development, namely, the capacity of observation, multidirectional thinking and the ability to see cause and effect.

Level of difficulty of the tests

The main purpose behind this entire project was to carefully ascertain the difficulties being experienced by the students in the process of language learning and to suggest appropriate remedial measures accordingly. Therefore, in comparison with the vocabulary, the sentence constructions and the nature of the questions contained in the lessons in the textbooks, the level of difficulty of our tests was considerably lower.

That enabled us to locate accurately, and in rather minute detail, the difficulties which the students encounter and in which respects.

For example, for assessing the test level for Grade 4, while according to the prescribed syllabus for standard IV, the children were expected to be able to write words in standard Marathi with compound letters (not to say of course letters with all orthographic signs), not necessarily very commonly used in the children's families, but used in erudite or cultivated writing, the words used in the dictation test for Grade 4 were more commonly used and from colloquial parlance, avoiding more difficult orthographic signs such as ृ [ru], and compound words, relatively more difficult to pronounce and write. Similarly, the students in standard IV were expected to know many words from terminology (often new to the students and frequently including compound words with three letters) used in the subjects from their syllabus such as history, geography and science, which were not included in the test for Grade 3 administered in the present survey. [See Exhibits 1 and 2 in Devnagari script presented in Appendix A, for example.]

Main features of the tests for Marathi

The tests were designed after deep and detailed thinking with a view to making them as appropriate as possible in terms of the objectives of the tests, the ease of administering them, their suitability for determining the level and their reliability. The main features of the tests for Marathi were the following:

* Gradation of tests and questions
* Tests grounded in child psychology
* Not group-based, but individual tests
* Flexible and tension-free conduct of tests
* Gender-neutral content
* Objective and on-spot determination of the level of performance
* Consolidation of Grade-wise entries
* Set of materials.

*** Gradation of tests and questions**

The tests were gradational in nature, designed to test different levels of performance appropriate for each of the four Grades, with individual questions also having correspondingly ascending levels across tests for different Grades. As explained earlier, since students in Standard I are just on the threshold of their school education, they were not included in this survey. The tests had four Grades or levels: Grade 1 for students in Standard II, Grade 2 for students in Standard III, Grade 3 for students in Standard IV and Grade 4 for students in Standard V.

The tests were not in the usual '*answer the following questions*' format. Rather, every Grade had five main questions, ordered to test performance in a language learning ability possibly involving an ascending level of difficulty, namely, comprehension by listening, verbal expression, comprehension by reading, dictation writing and independent writing. From Grade 1 to Grade 4, corresponding questions under each of these heads had an ascending level of difficulty. As in the textbooks, the language of the questions in the tests was standard Marathi.

The tests were so designed and structured that if the students in Grades 2, 3 and 4 were found to be unable to answer the questions of their respective own Grade satisfactorily, they would be immediately asked the *corresponding* question from an immediately lower Grade, regarding the same aspect of language development, but with lower level of difficulty. If a student's response was not satisfactory even in the immediately lower Grade, he/she would be asked the corresponding question for the still lower Grade...and so on. And in this manner, the tests were so designed that the student's *actual* level of development could be determined.

The design of the tests permitted that if the students in Grades I, II and III answered the questions for their own Grades satisfactorily they could be asked questions meant for the respective higher Grades also; however, given the constraint of time, it was decided not to ask questions of higher Grade.

*** Tests grounded in child psychology**

In addition to the linguistic aspect, the children's age and their likes and dislikes were also kept in mind while framing the questions. The questions were synchronised with such activities such as looking at big, colourful pictures; looking at the action of a paper object being made; observing things and then responding; reading words or sentences written in big, bold letters; etc. The pictures, the actions, the objects, and the words, the sentences or the passages were chosen to be closely connected to the children's world of experiences: for example, a paper boat, a ball, needle and thread, a picture of a scene on a city road, a picture of a boy holding a kite, a picture of a girl holding a piece of sugar cane, description of a baby, etc.

Not only were clear instructions given in the response sheet about how the test administrator should speak and behave for helping a student in case he/she committed an error, but the test administrators had also been specifically trained for it. For instance:

* In the tests for all Grades, the fourth question was on dictation. For this question, the instructions to the test administrators read: "It would be quite in order to say each sentence very slowly and three times. If a child has not been able to write a particular word or letter correctly, the same may be uttered with an emphasis in the third reading."

* In the test for Grade 3, the fifth question required the students to write. Here, the instructions for the test administrators were as follows:

- Show how to make a paper boat and ask the children to write down all the steps shown;
- Make sure that all the children are able to see all the steps being taken while making the paper boat;
- Make it a point to say certain words while making the boat (such as, *square paper, folded, joined the corners, now this is a triangle like a cap, press here, now we open this, the boat is ready*, etc.)
- In case of the children who are not able to write anything at all, encourage them to write by asking them leading questions, and make a note accordingly.
- If necessary, repeat some of the actions and also ask: *What did we take first?... How was the paper? ...See, what did I do?... And now, what is it that we have made?...*etc.

*** Not group-based, but individual tests**

Generally, in such surveys, students are administered the tests in groups. But in this survey, only one student was administered the test at a time. So a rapport could be established with the student by talking to him/her first and thereafter beginning the test. Also, the questions could be asked according to each student's pace. This made the tests reliable and also made it possible to make notes of some supplementary points: such as whether the student read through fluently or stopping off and on; what sort of conversation helped those, who could not proceed in the beginning, to make the necessary effort subsequently; etc.

The individual nature of the test was highly supportive for its gradational nature. The test administrator could evaluate on-spot a student's level of performance and judge whether it was necessary to ask him/her questions from a lower Grade; if so, the lower-Grade questions were put to him/her then and there, and the responses were noted.

There was not much distance between the test administrator and the student, so the questions and the responses were easily and clearly audible to both of them. Therefore, the possibility of proper responses not forthcoming because of inaudibility was eliminated.

It took about 40 to 50 minutes to administer the test to one student.

Flexible and tension-free conduct of tests

While conducting the tests, the administrators were free to change the order of the questions, if necessary. Further, there was no strict time-limit for finishing either a particular question or the complete test. Hence, the children did not feel any tension or stress.

There could be a pause at any time during the test, when the children could be allowed to draw a picture for a change. This picture was not part of the test. Arrangements were made for supplying the material necessary for drawing the picture. In question 5 of the test for Grade 2, sentences were to be written about various objects. These included a toffee- which was given to the students of all levels.

All the material required for writing - such as a cardboard pad for support, a pencil, a sharpener, an eraser, etc, - was supplied to the children.

Smiling at the children, talking to them affectionately, patting them gently on the back or touching their cheeks, looking at them with affection-all these little gestures are important for eliciting reliable responses from children. They were used in a mature way while conducting the tests. The assurance and ease that were thereby conveyed to the children were very important for the children's responses to be free from tension; that, in turn, was important for the credibility of the test.

*** Gender-neutral content**

***** It was ensured that the content would not be dominated by references to either boys or girls alone. The names of girls as well as boys were advisedly used in the contents of various questions. Where the questions involved the use of pictures, it was made sure that they would not be only of boys but would include those of girls as well.

Objective and on-spot determination of the level of performance

The language test was designed so as to allow for varied responses from the students. It was not easy to maintain uniformity in the interpretation of such varied responses. But it was essential to do so in the interest of ensuring the reliability of the tests. Another aspect that was kept in mind while designing the tests was that the responses to questions in respect of reading and independent writing could reflect the differences student in the level of the students' command over the language. In view of this, precise criteria defining five levels of performance were given with each question, so that even if the test was conducted by different persons, the interpretation would be uniform and not divergent, and the students' level of performance was determined on the basis of the given, uniform criteria. For example:

Grade 1: Criteria for determining the level of performance in *reading*

0: The student is acquainted with less than 20 letters or alphabets (out of 52 Marathi alphabets).

1: The student only decoded letters in their basic form, without any orthographic signs.
2: The student read words without orthographic signs, understanding their meaning.
3: The student read and understood the meaning of words with the sign for *aa* [or $\bar{a}$].
4: The student read and understood the meaning of words with the signs for i and *ee* [or $\bar{i}$].

Grade 1: Criteria for determining the level of performance in writing

0: The student did not write anything.
1: The student wrote one or two words or incomplete sentences.
2: The student wrote one or two complete and consistent sentences.
3: The student wrote three or four complete and consistent sentences.
4: The student wrote five or more complete and consistent sentences.

*** Consolidation of Grade-wise entries**

On-spot determination of the level of the children's responses was important. In order that the test administrator should not be required to go for any detailed written explanation in this regard, even while carrying out the work with precision, an appropriate method was devised to enable him/her to record notings/entries in respect of each question.

A chart was prepared on the front page of the response sheet to facilitate easy notings in respect of all the students and thereby easy consolidation of the statistical information. The level of a student's performance was noted in such a way that if his/her response to a question (in his/her own Grade) on a particular aspect of language was unsatisfactory, and therefore he/she had to be asked a question at a lower Grade, then a glance at the consolidated chart would clearly indicate exactly which question of which Grade the student *could* eventually answer. The purpose behind this was to save the time and energy - expended in flipping through the pages of the response sheet and finding the right page - of the person who would later feed the statistical information into the computer.

Set of materials

Every person in the team conducting the test was given a set of materials. Keeping in mind that the written responses and therefore the reliability of the test could be affected by such reasons as, the children did not have properly sharpened pencils; they did not have sharpeners; they did not have a pad to hold under the paper for support, etc. This set of materials included pencils, erasers, sharpeners, pads, etc. For written responses, the children were given answer sheets.

The text for reading used in this test was printed in a larger font size than that in the textbooks of the children. This was done to obviate any effect on the responses involving reading for the reason that the text was not clearly visible or legible.

Different materials/objects were used as aids to facilitate the children's responses while conducting the tests. They comprised a lock, a needle and thread, a ball, a notebook, a piece of paper, toffee, coloured chalk, two big, coloured pictures; and paper for making a boat.

All the materials, namely, 24 answer sheets, six response sheets for each Grade, 24 toffees, etc, were counted and kept ready a day before the day of the test in the school.

Indeed, the very fact that tests for Marathi were developed with the aforesaid characteristics can

be said to be an important contribution made by this survey in the context of the learning and teaching of the Marathi language.

Validating and modifying the tests

After administering the tests on a pilot basis to students from all the four Grades in one school run by PMC, the tests for both the subjects - Marathi and mathematics - were modified in a number of necessary details. At this stage, the average time required for conducting the test for one student was also estimated. Including the time needed for establishing a rapport with the student, generally it took 40 to 50 minutes to administer the test to one student. It would have been possible to conduct tests for dictation and independent writing to groups of six students each, namely, each group from each Grade. But then, whenever warranted, individual students were to be given appropriate lower-Grade questions on the other aspects of language covered in the first three questions in the test papers. If the individual students were to be separately tested first for those three aspects and sent back to their classrooms and then if all the six students together were to be called back for dictation, much time would be lost in the students going back to the classroom and again re-assembling as also in sending somebody to call them back. Also, it was not possible to anticipate how many and which of the six students would need to be given a lower-Grade question, or whether none of them would need it. When it was found that a specific length of time would be necessary for one student, the total time needed was worked out without any compromise and it was decided to put the questions on all five aspects of language to individual students separately.

Findings from the survey

The picture that emerges from the tests conducted for evaluating the language abilities of boys and girls in Standards II to V is presented here with statistics. Grade-wise observations in regard to each of the five aspects of language ability, assessed in this study, namely, listening and comprehension, verbal expression, reading and comprehension, dictation and independent writing, are presented below. The percentage of students from each Grade who were found to have attained satisfactory levels in the corresponding aspect of language ability is presented in a tabular form. The points that emerge from the survey in regard to the overall language development and abilities of children are discussed in the next section.

1. Listening and comprehension

Table 1. Percentage of Students with Satisfactory Ability in Listening and Comprehension

Grade Standard	Percentage of students with satisfactory ability
(1)	(2)
Grade 1 Standard II	94.7
Grade 2 Standard III	59.11
Grade 3 Standard IV	40.09
Grade 4 Standard V	79.9

In Grades 2 and 3, the level of difficulty experienced by the students suddenly steeply increases, whereas in Grade 4, because of the practice which the students have had during the first three years of schooling, the level of language abilities seems to go up again.

Comments

In Grade 1, students who show an excellent performance in this aspect of language development are more than 90 per cent and in Grade 4, they are nearly 80 per cent. The percentage dips in Grades II and III. Actually, the ability of listening and comprehension is expected to improve in each Grade. Therefore, one would expect that the percentage of students achieving a satisfactory level in this field of language ability would keep steadily rising with each higher

Grade. The reasons for the lower percentage in Grades II and III compared to Grade I need to be explored.

Listening and comprehension is the foundation of language development; it needs to be strong in all Grades if the student is to develop the skills of conversation, reading and writing. In the process of mastering the standard language, the ability to listen to something said in the standard language and comprehend it is especially important. For this to happen, it is necessary to give the students, at the classroom level, various educational experiences such as listening and reproducing, listening to a passage and then answering questions on it, whether verbally or in writing, and analytical exercises on passages listened to. This is elaborated in the section, 'Towards remedial measures'.

2. Observation and verbal expression

Large - size A3 - coloured pictures were used for observation. Their contents were such as would be familiar to children.

Table 2. Percentage of Students with Satisfactory Ability in Observation and Verbal Expression

Grade Standard	Percentage of students with satisfactory ability
(1)	(2)
Grade 1 Standard II	98
Grade 2 Standard III	96
Grade 3 Standard IV	99
Grade 4 Standard V	90.7

Comments

The number of students with excellent capacity of observation and verbal expression is satisfactory in all the Grades. To cultivate and develop this capacity further, lessons based on observation of exhibits by the students must be consciously included in various ways in the daily timetable of lessons. If such lessons are purposefully used while explaining various concepts in the teaching of language as well as non-language subjects, a new direction of participatory teaching would open up and it would definitely improve the overall grasping and expression of the students. This is discussed at length in the section, 'Towards remedial measures'.

3. Reading and comprehension

Grade-wise explanation regarding content and percentage of students with satisfactory ability is given in Table 3, so that the level of the students' ability of reading and comprehension may be accurately understood.

Table 3. Percentage of students with satisfactory ability in Reading and comprehension

Grade Standard	Percentage of students with satisfactory ability	Explanation of Content
(1)	(2)	(3)
Grade 1 Standard II	61.8	a. Basic letters, words with orthographic signs for *aa* [$\bar{a}$], *i* and *ee* [$\bar{i}$] b. Sentences including words with orthographic signs for *u, oo* [$\bar{u}$] and *e*
Grade 2 Standard III	71.9	Sentences containing words with orthographic signs for *ai, o, au* and *am*[$\bar{a}$ṁ]
Grade 3 Standard IV	79.2	Sentences containing words with all orthographic signs, as also compound letters (at least 15 compound letters)
Grade 4 Standard V	86.6	A paragraph of ten continuous sentences containing words with all orthographic signs and compound letters

Comments

The numbers of students who are at a satisfactory level in reading is seen more or less rising upto Grade 3. As a matter of fact, according to the syllabus, students are expected to be able to read and write all orthographic signs and some compound letters by the end of Standard I. And this expectation is right. In reality, however, it transpires that children have to reach Standard IV or V before they can read these signs with ease.

In the process of mastering standard Marathi, the ease with which one can read and comprehend words, sentences and passages in standard Marathi is very important. Mastery in reading also helps in speaking as well writing in standard Marathi.

In the section 'Toward remedial measures', we discuss the changes which might be introduced in the classroom-level teaching of reading, keeping in mind the distinctive features of the Devanagari script as well as research about good reading.

4. Dictation

In Table 4, the sentences used in the test are given Grade-wise, so that the students' level may be accurately understood.

Table 4. Percentage of Students with Satisfactory Ability in Dictation

Grade Standard	Percentage of students with satisfactory ability
(1)	(2)
Grade 1 Standard II	41.55
Grade 2 Standard III	27.09
Grade 3 Standard IV	43.43
Grade 4 Standard V	62.37

For contents of sentences dictated see Exhibit 3 in Appendix A for Exhibits in Devnagari script.

Comments

Actually, given the simplicity of the content as given in Table 6, the number of children who could write according to the dictation should have been much higher.

The ability to reduce dictation to writing is closely connected with accurate independent writing. At the stage where a child begins to write independently, he/she vocalises a word [by saying it loudly and uttering it to himself or herself] and then writes it. Later on, this is done mentally. The ability to remember a word and the sequence of the sounds in that word is closely connected to accurately writing down what one hears. Conscious efforts are needed to ensure that this ability of remembering words and sequences of sounds is used and strengthened.

In Grade 1, students whose ability to listen and comprehend is excellent are more than 90 per cent. Also in Grade 1, those who are at a satisfactory level in reading are nearly 62 per cent. However, in this Grade, the proportion of those who can satisfactorily write down what they hear is only 41.55 per cent.

In Grade 2, students who are at a satisfactory level in listening and comprehension are nearly 60 per cent and those satisfactory in reading are 72 per cent. Still, only 27 per cent students in Grade 2 can satisfactorily write down what they hear.

In Grades 3 and 4, the proportion of students who responded to dictation satisfactorily is seen to go up steadily. Yet 57 per cent in Grade 3 and 38 per cent in Grade 4 have not been able to handle dictation satisfactorily. The conclusion from all these statistics is that in general, the writing skills and writing ability remain weak in all the Grades.

Although children's comprehension is satisfactory, the ability to write down what they hear is weak in all the Grades. Particularly, the picture in Grade II is truly dismal. What this picture does is to underscore the need to pay relatively more attention to the development of the children's writing within the overall context of their study of language.

Also clearly underscored is the need to adopt or use the best methods of teaching the script. This is elaborated in the section 'Towards remedial measures'.

5. Independent writing

Table 5. Percentage of students with satisfactory ability in Independent writing

Grade Standard	Percentage of students with satisfactory ability	What was expected by way of satisfactory writing
(1)	(2)	(3)
Grade 1 Standard II	48.31	Writing one sentence about what the student likes to eat.
Grade 2 Standard III	56.16	Looking at objects like red/long chalk, new/rectangular note-book, torn/ white paper, toffee: and write two to four sentences about what/how they are.
Grade 3 Standard IV	57.58	Writing two to four sentences after observing a paper boat being made and listening to the accompanying narration, or on one's own.
		Questions were put to those who could not write anything, in order to encourage and make them write.
Grade 4 Standard V	82.47	Writing three to five consistent sentences about either of two pictures shown in the response sheet. One picture showed a girl holding a piece of sugarcane, standing in a sugarcane farm. The other showed two boys flying kites together, one wearing a traditional attire generally worn by Hindus and the other that generally worn by Muslims.

N.B.: In all Grades, marks were given for sentence written in dialect also.

Comments

The ability to write consistent sentences in one's dialect or in standard Marathi seems to go up as the students go up to higher standards. Here, responses in dialect or in a mixed code of dialect-standard Marathi have been taken into consideration for determining the level of performance. It was decided to do so with a view to finding out whether the children's difficulty was with expression as such or with standard Marathi. After determining the level of performance, during the survey of language difficulties, we also noted how many students could write proper sentences in the standard language. The number of students who have the capacity of observation as well as expression but find it difficult to write in the standard language is considerably high. Therefore, it is essential to create awareness among teachers about how to teach writing in standard Marathi.

It can be seen from the students' writing that if they are to be able to write readably and fluently [with a flow], if they are to know about the proper use of pronouns, if their writing is to be enriched with the use of adjectives and adverbs, if their use of vocabulary is to be right, if their writing is to show glimpses of the linguistic distinctiveness of Marathi, if their writing is to reflect their imagination-then their teachers will have to go a long way in improving their teaching.

It can also be seen quite clearly that the teachers will have to specifically and consciously include in their teaching topics related to presentation, such as the use of punctuation marks and paragraphs at appropriate places.

6. Number of students who gave satisfactory and unsatisfactory responses

Table 6. Percentage of students who gave satisfactory responses

Grade Standard	No. of Students with Satisfactory Performance in All Language Abilities	Percentage of Students with Satisfactory Performance in All Language Abilities	No. of Students with Satisfactory Performance in One or More Language Abilities	Total Number of Students
(1)	(2)	(3)	(4)	(5)
Grade 1 Standard II	70	33.8	137	207
Grade 2 Standard III	33	16.2	170	203
Grade 3 Standard IV	43	21.7	155	198
Grade 4 Standard V	93	47.6	102	195

Comments

Although the contents of the questions in this test were easier compared to those in the textbooks, the number of students who need help for reaching a satisfactory level in one or more aspects of language development is notably large in all the Grades. There is detailed discussion of this in the section, 'Towards remedial measures'.

The level of difficulty being lower than that of the syllabus, it would be in order, to see the percentage of students, in all Grades, who attain Level 4 of performance in all questions in their respective Grade. This is regrettably low.

Table 7. Percentage of Students Attaining Level 4 of Performance in their Respective Grades, in all Five Aspects of Language Development

Grade 1	8.21
Grade 2	0.99
Grade 3	2.02
Grade 4	6.19

The Grade-wise number of students who had to be given questions of earlier (lower) Grades is as follows:

Table 8. Number of Students in Grade 4 (Standard V) Who had to be Given a Question of Lower Grades

Grade 4, Standard V		U: Unsatisfactory				S: Satisfactory	
Out of the total 194 students	U in Grade 4	In Grade 3		In Grade 2		In Grade 1	
		S	U	S	U	S	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Listening/Comprehension	39	17	22	15	7	5	2
Observation/Verbal expression	18	18	0	0	0	0	0
Reading	26	9	17	4	13	8	5
Dictation	73	7	66	16	50	17	33
Independent Writing	34	3	31	6	25	6	19

(in standard Marathi or dialect)

In Grade 4 (Standard V) the most unsatisfactory response seems to have been in respect of dictation. Out of the 194 students in Standard V, 73 could not write the sentences, including simple compound words from day to day usage of the students, shown for Grade 4 in Exhibit 3 in Appendix A for Exhibits in Devnagari script. Out of these 73 students from Standard V, 33 have not been able to write even the following simple sentences of Grade 1(Standard II), having simple words in day to day usage of the students and only with basic letters, words with orthographic signs for *aa* [$\bar{a}$], *i* and *ee* [$\bar{i}$], without any compound words, as shown for Grade 1 in Exhibit 3 in Appendix A for Exhibits in Devnagari script.

Looking at this ground level reality, it seems that 38 per cent of the students, who have been in Marathi school for four years, have not firmly grasped how exactly to correlate the sounds of Marathi with the Devanagari symbols for those sounds. This makes it clear that the methods adopted for the teaching of writing are not effective.

In independent writing, nearly 18 per cent of students in Grade 4, Standard V (34 out of 194; see Table 8 above) cannot write even four consistent sentences in the standard language, or even in their own dialect. The number of those unable to write sentences in the standard language in Grade 4, Standard V is more than 46 per cent (90 out of 194;SeeTable 15 below). That is to say, these figures show that in general, the level of the children's writing skills - whether in dictation or in independent writing - is continuously unsatisfactory in all the Grades. The picture does not change even when the condition of standard language is removed. This only leads to the conclusion that the present education system does not put enough emphasis on developing children's writing skills.

The ability to hear the sounds of standard Marathi accurately and then write them down using correct orthography can only be said to be a prelude to independent writing in Marathi, hence if efforts are made to improve the children's ability to take dictation, there is bound to be a positive impact on their overall written expression.

Some effective methods that can be adopted for this purpose are discussed in the section, 'Towards remedial measures'.

Table 9. Number of Students in Grade 3 (Standard IV) who had to be Given a Question of Lower Grades

Grade 3, Standard IV	U: Unsatisfactory			S: Satisfactory	
Out of the total 198 students	U in Grade 3	In Grade 2		In Grade 1	
		S	U	S	U
(1)	(2)	(3)	(4)	(5)	(6)
Listening/Comprehension	117	86	31	26	5
Observation/Verbal expression	01	01	0	0	0
Reading	41	13	28	11	17
Dictation	112	22	90	37	53
Independent Writing	84	38	46	10	36

(in standard Marathi or dialect)

In Grade 3, the most unsatisfactory response is in listening and comprehension and dictation.

The teaching method currently in vogue in our classrooms mainly entails talking by the teacher and listening and understanding by the students. In view of this, it is hardly necessary to separately bring out the importance of the ability to listen and comprehend. In our daily life also, the extent and importance of listening and understanding is very substantial. What could be done to develop the students' ability to listen to attentively is elaborated in the discussion of the remedial measures.

57 per cent students in Grade 3 (Standard IV) are at unsatisfactory level in dictation. They have not been able to write sentences, having words in day to day usage of the students with basic letters with orthographic signs *aa* [$\bar{a}$], *i, ee* [$\bar{i}$], *u, oo* [$\bar{u}$] , *e, ai, o, au* and *am* [aṅ]. [See sentences for Grade 3 in Exhibit 3 of Appendix A for the Exhibits.]

27 per cent students in Standard IV have not been able to write sentences of Grade 1 (Standard II), having simple words in day to day usage of the students and only with basic letters, words with orthographic signs for *aa* [$\bar{a}$], *i* and *ee* [$\bar{i}$], without any compound words. [See sentences for Grade 1 in Exhibit 3 of Appendix A for the Exhibits.]

As far as dictation is concerned, the observations in respect of Grade 4 are fully applicable here as well.

Table 10. Number of students who had to be given a question of lower Grades

Grade 2, Standard III	U: Unsatisfactory	S: Satisfactory	
Out of the total 203 students	U in Grade 2	In Grade 1	
		S	U
(1)	(2)	(3)	(4)
Listening/Comprehension	83	72	11
Observation/Verbal expression	08	08	0
Reading	57	30	27
Dictation	148	57	91
Independent Writing	89	31	58

(in standard Marathi or dialect)

In Grade 2, the most unsatisfactory response is in dictation, as 73 per cent of the students are at an unsatisfactory level of performance in this regard. These students from Grade 2 (Standard III) have not been able to write even sentences having words in day to day usage of the students with basic letters with orthographic signs *aa* [$\bar{a}$], *i, ee* [$\bar{i}$], *u, oo* [$\bar{u}$], *e*.

44 per cent of the students are at an unsatisfactory level even in the lower Grade. They have not been able to write even sentences of Grade 1 (Standard II), having simple words in day to day usage of the students and only with basic letters, words with orthographic signs for *aa* [$\bar{a}$], *i, ee* [$\bar{i}$], without any compound words, as shown for Grade 1 in Exhibit 3 in Appendix A for Exhibits in Devnagari script.

Next to dictation, unsatisfactory response is in independent writing and listening and comprehension. The observations on these points under Grades 3 and 4 are applicable here too.

Table 11. Number of students who were at unsatisfactory level in their own Grade

Grade 1, Standard II U: Unsatisfactory

Out of the total 207 students	U in Grade 2
(1)	(2)
Listening/Comprehension	11
Observation/Verbal expression	04
Reading	79
Dictation	121
Independent Writing	107

(in standard Marathi or dialect)

In grade 1, the most unsatisfactory response is in dictation, as 59 per cent students are at an unsatisfactory level in it. They have not been able to write even the sentences having simple words in day to day usage of the students and only with basic letters, words with orthographic signs for *aa* [ā], *i* and *ee* [ī], without any compound words, as shown for Grade 1 in Exhibit 3 in Appendix A for Exhibits in Devnagari script.

Next to dictation, the unsatisfactory response is in independent writing. 52 per cent students here have not been able to write even one sentence on their own, either in standard Marathi or in dialect. The proportion of those who could write *one* consistent sentence in the standard language is as low as 16 per cent.

In this Grade, the percentage of students who are unable to read is 38 per cent. Inability to read directly leads to inability to take dictation as also inability to write independently. Therefore, effective methods of teaching how to read are required to be adopted from the Grade prior to this, i.e., Standard I.

7. Important points emerging from the statistical data

1. The tests clearly showed that more than 90 percent of the children in all Grades clearly have an excellent capacity of observation as well as of talking about what they observe.
2. In listening and comprehension, the number of satisfactory responses from students in Standards III and IV is much less compared to that from students in Standards II and V.
3. The number of children giving satisfactory responses in reading with comprehension and independent writing seems to be increasing with each higher Grade.
4. In dictation, the low percentage of satisfactory responses makes it clear that intensive efforts for developing this ability are needed in all Grades, especially up to Grade 3 or Standard IV.
5. Considering that the level of difficulty of the contents of this test was much lower than that of the contents of the syllabus of the respective Standard, the statistical data underscore the need for using novel methods in a streamlined manner for developing the children's language abilities in dictation, reading and independent writing.
6. Students placed at satisfactory level of performance in Grade 2 (Standard III) and Grade 3 (Standard IV) are fewer in percentage than those in Grade 1 (Standard II) and Grade 4 (Standard V). It would be worthwhile to look deeply into the reasons for this :
   a. Are the students who reach Standard V, in a way, the better ones who remain after the weak ones drop out after Standard IV?

b. Because the number of the subjects to be studied by students goes up in Standard III, are their responses adversely affected?
c. Standard IV is considered to be an important stage of primary education, while Standard I is considered its foundation. Do the schools happen to appoint competent teachers for these two Standards because of this reason?
d. Do the teachers have any difficulty specifically in teaching the signs e, ai, o, au of Devanagari orthography, which were tested in Grade 2 (Standard III) for reading and in Grade 3 (Standard IV) for writing, in this survey?
e. Is adequate practice of dictation given in the classroom?
f. Do the students find it easier to listen to and understand dialogic content rather than descriptive content?

7. No marked difference is observed in the proportions of boys and girls giving satisfactory responses.
8. Taking into account all the children from all the four Grades, there was not a single school, in which 50 per cent or more of students gave satisfactory responses to all the questions. There were only two schools in which a majority of children from *three* Grades gave satisfactory responses to all the questions.
9. Taking into account students from all the Grades, very few students gave satisfactory responses to all the questions in their own respective Grades. There were only 16 schools in which such students could be found.

8. Further analysis of the details related to writing ability

After evaluating the language abilities of boys and girls from Standards II to V Grade-wise and ability-wise, the response sheet of each boy and girl was examined once again, with the objective of correlating their written responses with more details related to the ability of writing. The statistics and the findings that emerge from this probe are given below Grade-wise:

Table 12. Students with Difficulties in Reading and Writing: Grade 1, Standard II

Grade 1, Standard II	Total number of students: 207	
Criterion	Yes	No
Could write words of standard Marathi after listening to them	78	129
Made proper construction of sentences in standard Marathi, while writing	33	174
Made proper construction of sentences in one's dialect, while writing	24	183
Understood cause and effect	179	28
Read by separating letters or orthographic signs	44	121
Those not able to read at all		42
Wrote the orthographic signs *aa* [$\bar{a}$], *i, ee* [$\bar{i}$] wrongly or on wrong letters	57	100
Wrote mirror images of letters	08	151
Those not able to write at all		50

The data once again underscore the fact that the writing ability of boys and girls is weak and that abilities such as taking dictation and forming sentences in standard and/or dialectic Marathi are markedly undeveloped in the children. However, the situation seems to be satisfactory in respect of the children's comprehension. This means that the question is about enough writing practice. And it indicates the need to put due emphasis on writing.

Table 13. Students with Difficulties in Reading and Writing: Grade 2, Standard III

Grade 2, Standard II		Total number of students: 203	
Criterion		Yes	No
Has put overhead horizontal lines properly		143	60
There is sufficient space between words		124	79
Has put full stop properly		27	186
Made proper construction of sentences in one's dialect, while writing		61	142
Made proper construction of sentences in standard Marathi, while writing		87	116
Could listen and then write down words in standard Marathi		79	124
Displayed the ability of multi-directional thinking		166	37
Inclined to go into details		14	189
Understood cause and effect		173	30
Wrote letters in haphazard manner		30	153
	Those not able to write at all		20
Read by separating letters or orthographic signs		42	145
	Those not able to write at all		16
Wrote orthographic signs wrongly or on wrong letters		71	112
	Those not able to write at all		20

In this Grade too it again becomes clear that the students are weak in their writing ability. Such abilities as putting the full stop at the proper place, forming proper sentences in standard or/and dialectic Marathi, listening to words in standard Marathi and writing them down correctly, etc, do not seem to have developed among the children (up to the desired level). However, the children's performance appears to be satisfactory in understanding cause and effect and multi-directional thinking. This means that greater efforts need to be made for improving the children's writing abilities.

Table 14. Students with Difficulties in Reading and Writing: Grade 3, Standard IV

Grade III, Standard IV		Total number of students: 198	
Criterion		Yes	No
Has put overhead horizontal lines properly		135	63
There is sufficient space between words		75	123
Has put full stop properly		11	187
Made proper construction of sentences in one's dialect, while writing		91	107
Made proper construction of sentences in standard Marathi, while writing		87	116
Could write down verbal answers after listening to a passage		68	130
Could listen and then write down words in standard Marathi		73	125
Displayed the ability of multi-directional thinking		174	24
Inclined to go into details		15	183
Understood cause and effect		192	06
Wrote letters in haphazard manner		38	156
	Those not able to write at all		04
Read by separating letters or orthographic signs		63	129
	Those not able to write at all		06
Wrote orthographic signs wrongly or on wrong letters		122	72
	Those not able to write at all		04

It is clear from the data that just as in Standards II and III; here too the writing abilities of boys and girls are weak.

Table 15. Students with Difficulties in Reading and Writing: Grade 4, Standard V

Grade 4, Standard V Total number of students: 194

Criterion	Yes	No
Has put overhead horizontal lines properly	127	67
There is sufficient space between words	87	107
Has put full stop properly	35	159
Made proper construction of sentences in one's dialect, while writing	67	127
Made proper construction of sentences in standard Marathi, while writing	104	90
Could write down verbal answers given to heard text	89	105
Could listen and then write down words in standard Marathi	84	110
Displayed the ability of multi-directional thinking	60	134
Inclined to go into details	43	151
Understood cause and effect	145	49
Wrote letters in haphazard manner	14	180
Read by separating letters or orthographic signs	39	154
Wrote orthographic signs wrongly or on wrong letters	92	102

There is no question about the children's comprehension, but it is amply and starkly clear from the data that their writing abilities are decidedly weak even after they have reached Standard V. That is the picture right from Standard II to Standard V. This means that, at this stage of primary education, it is absolutely essential to work very hard on developing children's writing abilities.

Observations based on Tables 12 to 15

1. It transpires that a majority of the children has a good preliminary understanding of cause and effect. Exercises based on this are required to be included in the day-to-day teaching of all subjects.
2. The ability to observe as well as to think multi-directionally is seen to be generally satisfactory in all Grades. It is necessary to plan lessons with a view to strengthening this ability; it must not be allowed to diminish with the child's increasing age.
3. To encourage fluent reading, new research-based methods need to be adopted from Standard I itself. This is important for developing the ability to read with comprehension, as also for mastering the standard language.
4. It is found that the proportion of students who write mirror images of letters, or write the letters in a haphazard manner, is low, but the number of those who write wrong orthographic signs is very large. This picture needs to change. Children have to be able to use orthographic signs accurately. Innovative methods for teaching the orthographic signs are discussed in the section on remedial measures.
5. Practices such as using the overhead horizontal line, leaving sufficient space between two words, etc, must be insisted upon from the beginning, at all stages.

6. The proportion of children who cannot handle dictation of words and sentences in standard Marathi is high in all Grades. Lessons in dictation need to be held regularly every day. This is extremely important for overall mastery of standard Marathi.
7. Dialectic words or sentences should be accepted in both speaking and writing and, throughout the first year, the alternative forms for them used in standard Marathi should be constantly suggested to the students. This is essential for the students to be able to make the transition to standard Marathi.
8. It is necessary that the students gain clarity and a firm grasp of the correspondence between the sound that is heard and the written signs for it, and internalise that correspondence.
9. Even if students understand a passage in the standard language, they find it difficult to do any writing related to it. Hence, it is extremely necessary to reinforce their writing ability.
10. The basis of the ability to write is the ability to express one's thoughts through properly constructed sentences. It is of far-reaching importance to take the children to the level of sentences from the very time they learn the alphabets and orthography. This is elaborated in the section on remedial measures.
11. The practice of making every student write a sentence or two independently by oneself ought to begin in Standard I.
12. It is not enough for the students merely to do the exercises that follow the lessons in the textbook. Rather, it is necessary to inculcate in them the awareness that language is for expressing and presenting one's own thoughts, observations, views, etc; language lessons instilling and enhancing this awareness ought to go on continuously throughout the year.

9. What the survey reveals about children's language development

As the work of piecing together the data gathered in the survey and that of drawing conclusions from it advanced, we became increasingly disturbed. It clearly emerged from the data that most of our children possess excellent innate abilities required for good learning, but that we have miserably failed to equip them with the minimum language skills, required for the purpose. We were overtaken by a deep sense of disappointment due to this realisation.

The responses of some of the children were encouraging, but such children were few and far between. The responses of most children led to the stark realisation of how much we have failed as society in ensuring our children's language development. Six decades have passed since Independence; research has progressed in various fields; the number of children enroled in schools has gone up satisfactorily, but as society we have still not been able to fulfil the simple task of putting in place effective methods of teaching and learning in primary schools. This was poignantly underscored from the findings of this survey.

Various groups have done much work in Maharashtra on what exactly is required to be done in the classroom for promoting language development. These measures are not really out of reach or expensive; yet, unfortunately, the survey showed very clearly that our schools have no understanding about the essence of language development. While studying and analysing the responses of the children covered in the survey, we were constantly reminded of the children whom we had actually met in their schools during the survey.... And we kept thinking of the long way they have to go if they are to be able to read and write really well and use language in their life confidently, imaginatively, sensitively and thoughtfully. Rather than thinking about who is

responsible or guilty for this state of affairs, the overwhelming thought was: what exactly should be done to bring about a change in the situation?

The following challenges are underscored by the survey:

Content easy, yet response unsatisfactory

Testing whether or not the students have understood the contents of the lessons in their textbooks of Marathi or any other subject was not the objective of this survey. Rather, it was to see what level the students had attained in the different aspects of language development, as also to understand exactly what difficulties they face while: speaking; listening to the teacher and learning; learning to read; and writing. The contents of the tests devised for this survey were deliberately kept at a very easy level. For that reason, we had hoped for very good responses from the students of all the Standards in respect of all aspects of language development. However, this did not happen. Quite on the contrary, the number of children who gave satisfactory responses to all the questions turned out to be regrettably low.

The survey clearly brings out the difficulties that children face in our schooling system during the process of their language development. It is also clear that these difficulties are interlinked and together they slow down the pace of the children's language development. Only a handful of children attained the desirable level in all aspects of language development. In case of some children, the pace of language development is worryingly slow, while in case of some others this development is found not even to have begun. It is a matter of serious concern that such children are found even in Grade 4, that is, in Standard V. (See Table 8 above.)

Dictation and independent writing particularly unsatisfactory

Although the Grade-wise percentages differ, it is found that guidance is especially required about the methods that teachers should adopt for developing the children's abilities to take dictation and to write independently. (Refer to Tables 4 (and Exhibit 3 in Appendix A: Exhibits in Devnagari script) and 5 above.)

It is to be noted here that in independent writing, sentences written by the children in dialect or distorted forms of the correct writing, similar sounding though neither in standard Marathi or in dialect, have also been accepted. For example, see Exhibit 4 (Table 5 on p. 48) in Appendix A on Exhibits in Devnagari script. However, they have not been accepted in dictation.

Standard Marathi itself a challenge

The language in which all Marathi-medium textbooks are written is standard Marathi. Therefore, even within the limited context of school education, some minimal command over standard Marathi is essential for overall comprehension. The language of the test questions was also standard Marathi. After the survey was completed, as already mentioned, we went beyond the statistical information gathered and had a second look at the individual response sheet of each child and tried to understand precisely what difficulties the children had in listening to, comprehending, reading and writing standard Marathi.

Because of the efforts being made for universalising primary education, the number of children with mother-tongue different from standard Marathi in schools, has gone up appreciably. Considering this reality, responses - both verbal and written - that were not in standard Marathi were also accepted. This has resulted in the percentage of acceptable responses going up.

Had responses only in standard Marathi been accepted, the percentage of acceptable responses would have fallen still further.

The aforesaid second look at the children's response sheets also clearly brings out the extent to which their difficulties are related to comprehension and as distinct from those pertaining to standard Marathi as such. As the children move from the dialect spoken in their homes to standard Marathi, they face untold difficulties. Considering that the number of such children is quite large, there is a need to make major, concrete changes in the language-teaching methods used in the classroom. The imperative need is to effect some policy changes with the advice of experts and without giving in to any kind of pressure from any quarters, so that teachers can address this aspect competently in the classroom. What is also needed is a extensive and in-depth study as to exactly how, for how long and to what extent the children's dialect needs to be accepted in the initial stages, in order to make the children's transition towards the standard language easy. Side by side, what may be called 'bridge material/literature' that would help the children in this transition from dialect to standard language is also needed to be prepared in large measure. Policy changes regarding language teaching should be based on such studies. Only then would the pathways to the standard language open up for all.

Great difficulty in understanding difficult words in textbooks

As mentioned earlier, the number of children who find dictation difficult is worryingly large in all Grades. The possibility cannot be ruled out that children who responded unsatisfactorily in writing simple words in standard Marathi may not even have understood the meanings of the words, which they heard during the tests. But then if they cannot understand such simple words in standard Marathi, we can straightway conclude that they must of course find it difficult to understand the more difficult words in their textbooks. By way of illustrations, please see Exhibits 1 and 2 in Appendix A on Exhibits in Devnagari script.

Difficulty not in understanding what they hear, but in writing down what they understand

While assessing the responses to listening and comprehension, we have not deducted marks in case a student could not write down the answers but could answer verbally.

Out of the 194 students in Grade 4, Standard V, 105 could not write down the answers which they could give verbally; similarly, of the 198 students in Grade 3, Standard IV, 130 could not write down the answers that they could give verbally. This means that their difficulty lies in writing down even what they understand.

Responses to dictation worrying

As mentioned earlier, the contents of the tests in this survey were much easier than the vocabulary and sentence construction expected from the students of the respective Standards. Dictation too was no exception to this. Hence, when the responses are considered with reference to the words from the respective textbooks for Standards IV and V that the students were expected to have learnt at the time when the tests were conducted, the gravity of the situation is underscored. Refer to Exhibits 1 and 2 in Appendix A on Exhibits in Devnagari script for the sentences used for dictation in the test.

Worryingly low number of students able to construct and write simple consistent sentences in standard Marathi

As revealed by the survey, in independent writing, 53 per cent students in Grade 4 (Standard V) have been able to construct and write very simple sentences in standard Marathi. The figure

is 38 per cent in Grade 3 (Standard IV), 42 per cent in Grade 2 (Standard III) and as low as 16 per cent in Grade 1 (Standard II). (See Tables 12-15.)

Considering the expectations about writing from students in each Grade which the syllabus indicates, it would be clear how seriously the above percentages need to be pondered over. (See Table 5 above.)

It is psychologically beneficial to give some concrete, tangible object(s) to children of this age in order to motivate them to think. Therefore, instead of merely telling them to imagine something and write some four sentences about it, we made it a point to place some objects in front of the children. These motivating objects were chosen keeping in mind, in every Grade, the age and the likes and dislikes of the children. Further, the expected response was not a single stereotype; instead, the questions were so designed as to elicit varied thoughts and to bring out the diversity among the children. The children's writing was supported by using the following motivating objects:

1. Familiar things like paper, toffee, notebook, coloured chalk, etc.
2. The action of a paper boat being made and listening to the accompanying narration
3. Pictures of children flying kites and a girl with sugar cane in her hand.

Let us see here some examples of the sentences written by the children in response to these objects, which indicate of the diversity of the responses. The sentences have been corrected appropriately without changing their contents:

a. The paper is white.
b. That is a paper and it is torn.
c. The paper is rectangular.
d. This page is torn.
e. The paper is blank.
f. Paper is quadrilateral.
g. One boy has placed his hand over the other's shoulder.
h. The two of them are holding a kite from both the sides.
i. One of them is wearing a cap.
j. One boy says, "Let us fly a kite".

In order to bring out how much simpler this writing of the children is compared with the school syllabus, let us see some of the questions and the expected responses to them from the textbooks.

Table 16

1. History, Standard IV

Q. Write briefly: The consequence of the saints' work.

A. The saints' work/activities led to awareness among the people. Their respect for religion grew. People became self-confident. Shivaji utilized the saints' work for achieving independence/establishing an independent state.

2. Geography, Standard IV

Q. Write briefly: Annual velocity

A. The Earth rotates around the sun while rotating around itself. The Earth requires 365 days to complete one rotation around the sun. This period is called an year. Therefore, this velocity is referred to as Annual velocity.

In the prevailing educational system, written examination is used the most as the method for evaluating children's performance. The school-end public examination of Standard X is also not an exception to this. The ability to write also contributes a lot to an individual's empowerment in actual life later on.

Taking this ground reality into account, it is necessary to pay special attention to the children's inability to construct and write simple and consistent sentences in standard Marathi.

As stated earlier, in this survey, marks have not been deducted for children who could write sentences in their dialect. The number of children who could write in dialect or standard Marathi seems to go up with each Standard. The percentage of children who, after observing, could think and write down their thoughts in their dialect or standard Marathi is as follows:

Standard II: 28 per cent; Standard III: 73 per cent: Standard IV: 84 per cent; Standard V: 88 per cent.

It is appropriate here to see how many students had the will and the capacity for doing writing related to their experience or observation but who wrote in their dialect because they did not have sufficient command over standard Marathi. The data of such students, who wrote in their dialect, are given below:

Grade 1: 24 out of 57 students
Grade 2: 61 out of 148 students
Grade 3: 91 out of 166 students
Grade 4: 67 out of 171 students

In Standard V, the number of those who can write in the standard language goes up appreciably, but even that number is only 53 per cent (104 out of 194; see Table 15). It must be said that these students took over four years (Standard I to Standard IV) to be able to write consistent sentences in the standard language.

At the stage of Grade I (Standard II), such students were just about 16 per cent (Table 12), while those who can manage to write *one* sentence in dialect or standard language are as few as merely 28 per cent (not tabulated).

There is a great need to make remedial changes from the stage before this, namely Standard I itself, so that the students may be able to write consistent sentences.

The errors in the children's writing - in response to dictation or in independent writing - are classified as follows:

(The sentence or word in the children's mind is given in brackets. If the children have not used any punctuation mark, the sentence is given as it was.)

1. Ill-formed sentences, inability to put complex thought in proper words;
2. Breaking or joining words wrongly;
3. Writing a word without changing it to its oblique form before adding a suffix;
4. Wrong writing resulting in distortion of meaning;
5. Non-use of pronouns;
6. Difficulty in writing compound words (compound/conjunct letters);
   a. Inability to write compound words
   b. Writing wrong compound words
   c. Writing unnecessary compound words
   d. Nasalizing preceding letter instead of writing a cluster
7. Writing according to dialectic pronunciation instead of standard Marathi;
8. Writing a wrong consonant;
9. Placing an orthographic sign on a wrong letter;

10. Placing a wrong orthographic sign.

([See Exhibit 5 in Appendix A: Exhibits in Devnagari script.) Overall, it is seen that children take time up to Standard IV or V to master the concepts and skills of writing - and to be able to use them with ease - which, according to the prescribed syllabus, they are expected to master by the end of Standard I.

There is no standardised test in Marathi for testing writing inability

There has been much research in English on writing inability, on the basis of which various criteria have been established for identifying the presence of writing inability in children. Researchers have noted the following possibilities regarding the reasons for such inability:

1. Children do not remember the image of a letter that they have seen.
2. Even if they remember the image, they cannot actually reproduce it by hand.
3. Children's motor memory is faulty.
4. The muscles that are used for writing are weak.
5. The spatial awareness that is necessary for writing is not sufficiently developed.

It may be because of one or more of these possibilities that the writing of Marathi turns out to be as observed in some of the specimens this survey. For some such specimens, see Exhibit 6 in Appendix A: Exhibits in Devnagari script.

Considering the nature and number of errors in writing the consonants, orthographic signs and compound letters that came to the fore through this survey, research is needed to determine exactly what precisely should be considered as writing inability in Marathi.

When we see the statistics about whether - and if so how many - children have ended up making the error of interchanging various letters while writing Marathi, their number is negligible. At the same time, however, the number of those who have used orthographic signs wrongly, or used them on or with wrong letters, is notably high. There were 36 per cent such students in Grade 1 (Standard II), while in Grade 2 (Standard III) they were 39 per cent. This is exclusive of those who cannot write at all. If they are added, the numbers would go up to 76 per cent and 45 per cent, respectively.

There cannot be any objective norm to determine whether a particular letter is legible or not. The number of the students whose handwriting was not legible, and so a reader would find it difficult to read it, was not counted and therefore is not available. But there is clearly a need to pay attention to improving children's handwriting, so that it is at least legible. As an example, we can see the specimen of writing from the test, shown as Exhibit 7 in Appendix A: Exhibits in Devnagari script.

As a matter of fact, it can be said from observations made in school-visits and teachers' training programmes that a large number of teachers in primary schools have good handwriting. They also write well on the blackboard. Yet many of the students have bad handwriting and they are confused about exactly which orthographic signs to use and where. This means that we need to think seriously about the appropriateness and efficacy of our methods of teaching the script.

Keeping in mind the nature of the Devanagari script and on the basis of experiments and research on reading and writing, teachers should try to understand why and how new methods are to be used. These methods need to be included in the teacher training programmes at the state level, with a view to ensuring that all children cross the threshold of the script and master the minimum writing skills. The policy decisions required for this need to be taken, as also suitable rules made

by the government, for ensuring that educational diploma colleges are equipped to implement and promote these methods as also that they consciously include them in their syllabi.

Serious impact of broken reading on comprehension

As a matter of fact, according to the primary school syllabus, at the end of Standard I the students are expected to be able to read and write fluently texts containing all the letters, all the orthographic signs and some compound words.

If one is able to read fluently, one quickly understands the meaning of what one reads. But if one reads breaking up the letters and the orthographic signs, it creates obstacles in comprehending the meaning. For children who are able to read and understand the meaning, a pathway opens towards the wealth of the standard language. On the other hand, for those who read breaking up the letters and the orthographic signs, the pathway remains closed.

The percentage of children who read separating the letters and the orthographic signs deserves to be taken note of. Twenty seven per cent in Grade 1 (Standard II), 23 per cent in Grade 2 (Standard III), 33 per cent in Grade 3 (Standard IV) and 20 per cent in Grade 4 (Standard V) do this sort of 'broken' reading. If those in Grades 1 and 2 who cannot read at all are added to these numbers, the percentages for Grades 1 and 2 go up to 42 per cent and 29 per cent, respectively. Here too if we note in some detail what the children are expected to read in the first place, we would see the seriousness of the problem.(See Table 3).

Children's overall response unsatisfactory despite their having basic abilities

The contents of the test were so structured as to enable us to judge some basic abilities of the children by means of their responses under three heads of language ability, namely, oral expression, listening and comprehension and independent writing. The subject-matter was connected to the children's day-to-day experiences. The responses revealed that the children did have the innate abilities to observe, to do multi-directional thinking and to understand elementary cause and effect relations. Despite this, sadly, the percentage of children who have been able to come up to a satisfactory level of responses to all the questions in the test is very low.

Table 17. Percentage of students with satisfactory responses in all aspects of language

Grade Standard	Percentage of students with satisfactory Responses in all aspects of Language
(1)	(2)
Grade 1 Standard II	33.8
Grade 2 Standard III	16.2
Grade 3 Standard IV	21.7
Grade 4 Standard V	47.6

A five-level (zero to four) marking system was developed for these tests. How this was done has been elaborated in Appendix C.

Compared to the syllabus for the respective Standard, the content of the tests was very easy. Therefore, it was expected that a majority of the students would easily achieve level 4. Here it is useful to see how many students are, in fact, at the highest level, namely level 4, in all the five aspects of language development. It is a matter of great regret that this percentage is extremely low.

The percentage of the students who achieved level 4 in all the five aspects of language development in their own respective Grade is as follows:

Table 18. Percentage of the Students Achieving Level 4 in all the Five Aspects of Language Development in their Respective Grade

Grade 1	8.21
Grade 2	0.99
Grade 3	2.02
Grade 4	6.19

Certain matters at the time of conducting the test can affect children's responses and therefore the credibility of the test. These had been kept in mind and duly taken care of. The details are given in the Appendix C on the selection of the team for conducting the test and the execution of the test. Therefore, it is very unlikely that the conclusions that emerge are not credible.

10. Towards Remedial Measures

1. Developing listening ability

The importance of developing the ability to listen should not be lost sight of, because it is a daily necessity to listen to and then understand what one hears. Indeed, listening is the foundation of speaking, reading and writing-three important language abilities.

* From Standard I itself, children should get the opportunity to listen to different kinds of texts or discourse beyond the textbooks. This should have diversity as suggested below:

a **Stories:** Story books and books with coloured pictures published by Nehru Bala-Pustakalaya, Children's Book Trust and other publishers should be read in the classrooms. Stories can also be selected from children's supplements of newspapers. Such stories should be appropriate for the children's age and understanding. Comprehension develops if a story is read out after preparation in advance. 15 minutes should be reserved in the timetable for story-reading.

b. **Songs, poems:** Schools should have collections of children's poems by writers and poets like Raja Mangalwedhekar, Vinda Karandikar, Shanta Shelke, Mangesh Padgaonkar, Vasant Bapat, Anant Bhave and many others. Children love to hear poems and that helps a lot in inculcating language appreciation in children. Children should have the experience of listening to poems just for the sake of joy.

c. **Dialogues:** Teachers themselves can prepare dialogues between different persons. Through the means of listening to short dialogues and then answering questions on them, the teacher can develop among the children a habit of attentive listening.

d. **Jokes:** The teacher should constantly collect and compile jokes appropriate for the children's age. Children can also participate in this. Children are very eager to hear jokes.

e. **Letters:** It is easy to read out a letter or an invitation actually received. Sometimes, teachers and students can write letters to one another on post cards. These can also be read out in the class during the period for listening.

f. **Messages on chits:** If messages on specially prepared chits are read out to children, they are eager to do the actions as mentioned in the chits. They can do the right action only if they comprehend what is read out from the chits.

g. **Messages on posters/hoardings:** There are numerous posters and hoardings in the city. Teachers can take down the matter on such posters/hoardings and read it out in the class and then ask questions on it.

h. **Simplified news:** Children are interested in knowing what is happening around them. But they can find the language of the newspapers difficult. So news can be written up in simple words and then read out in the class.

The timetable in primary schools has thirteen periods every week for language. Out of these, one period every week must be set aside for such exercises for developing the children's listening ability. This period should have various activities such as listening only for joy; re-describing, either verbally or in writing, what is heard; answering questions, either verbally or in writing, on what is heard; preparing questions on what is heard; and so on.

* With a view to developing the ability to listen carefully, a game can be devised using pairs of similar-sounding words, of telling the meaning of these words. The children can then be asked to distinguish between the pairs, tell their meanings and use them in sentences. (See Exhibit 8 in Appendix A on Exhibits in Devnagari Script). There are many such pairs of words in Marathi. Teachers should prepare a list of them and play this game in the class frequently.

* Teachers should select some words and prepare a list. Every day, two or three students should read out two words each from this list and the others should write them down on their slates. This sort of a session of dictation can be held for ten minutes every day. All students should get the chance by rotation to dictate words to their classmates. This can also help in building up their overall confidence.

* The teacher should hold some sort of a shield - say a slate, a book, a paper, etc., - in front of his/her mouth and speak some words or sentences, so that the children cannot see the teacher's lip-movements. Then the students should be asked to recognise and identify the words or sentences spoken by the teacher. A dictation session can be conducted in this manner, once every fortnight, in Standard III and Standard IV classes.

2. Observation Lessons

Various kinds of objects, places, people and occasions can be observed around and within every school. A collection of pictures can also be used for an observation lesson. The teacher should imaginatively use all these for reinforcing the children's ability to observe. For instance, such things as an insect, a plant that has grown near the school gate, a leaf, a tree with or without leaves, the view from a window, the friend on the next seat, some quarrel, a game, a peon, the vendor outside the school, the teacher in the next class can be used for observation lessons. If the teacher himself/herself has the eye, he/she can see and come up with innumerable such opportunities.

Small groups can be formed for discussions or descriptions based on observation, which can be followed by a writing exercise in which everyone writes five to ten sentences on what is observed. Some questions can also be given to help or facilitate observation.

Just as things that are visible in front of us can be observed and then discussed, things that are not visible but can be imagined from or on the basis of the observation can also be discussed, talked about and written about. Children should get this opportunity too. This stimulates imagination and multi-dimensional thinking.

While describing something one has observed, one looks for appropriate words to use. If, through such exercises, one gets to prepare one's own sentences based on one's observations from the beginning, it helps in mastering sentence structure.

Teachers should think in advance about where they can provide opportunities for actual observation while teaching other subjects: for example, a real balance while teaching weights and measures; actual coins and notes while teaching currency; maps, pictures, photographs, etc. while

teaching history; photographs from reference books, one's own body movements while teaching science; waste x-ray films while teaching internal organs in the human body; etc.

One observation lesson must be planned every week.

3. Reading the alphabet and the orthographic signs with ease, speed and understanding

In any language, it is imperative to know the script well in order to be able to read speedily and with understanding as also to write accurately. From the point of view of a learner, there are five aspects of the Devanagari script that he/she has to learn. These are: consonants, stand-alone vowels, consonants together with vowels as represented by the orthographic signs, compound words (or compound/conjunct letters) without orthographic signs and compound words with orthographic signs.

If children are taught by the traditional method, some of them can master all the orthographic signs, but many of them find it difficult to read fluently and understand the meaning of what they read. In order to make it possible for all children to read with ease and understanding and enjoy reading, some different methods can be adopted for teaching the script.

* Letters of the alphabet should not be taught by identifying them with only one particular word. Also, letters should not be taught only by means of nouns. Rather; rather, all parts of speech should be used for identifying any particular letter:
* For instance, while teaching the letter k, the teacher should mention various words, which include the alphabet k, either in the beginning or in the middle or at the end of the word, without or with different orthographic signs. (See Exhibit 9 in Appendix A: Exhibits in Devnagari script). Thus, while learning alphabets, the children must visualise from the beginning itself that an alphabet can come at the beginning of a word, in the middle of it anywhere or at the end of it, and with or without the orthographic signs.

..., In this way, while learning a letter, the children would, as they should, become aware that that letter can be found in any number of words and that too, at the beginning, in the middle or at the end of a word. If this happens, the monotony of the "a for apple, b for boy" approach, which also connects every letter only with a noun and consequently poses difficulties in reading, is removed. As a result, the child can correlate the shape of a letter and the sound that it represents or symbolises.

* In an inclusive manner, the teacher should take various words in the children's own vocabulary for teaching them the letters of the alphabet. Here, words from the children's dialect should be consciously included. For example, if, for the letter w the children mention words from their dialect which include that letter, like *'walla'* (the dialectic equivalent of the standard Marathi word '*olā*', both meaning wet), they should be accepted. The children should also be told about the respective equivalents in standard Marathi, but accepting dialectic words is vital for the sound-letter correlation to be established in the children's minds.

* While teaching the orthographic signs, their *names*, like k*ā*n*ā* for *ā*, *welāntī* for i, *mātrā* for e, etc., should not be used initially. Rather, the teacher should first try to establish the relation between each orthographic sign and its pronunciation in the students' minds. For this, each stand-alone vowel and its orthographic sign for combining it with consonants should be taught *together:* for example, ... and ...,

...and..., ...and....etc. Children understand it when told that *ā* ...comes by itself, while the orthographic sign for it, namely, ... comes combined with some other letter; i ...comes by itself, while the orthographic sign for it ... comes combined with some other letter; and so on. In each case, both the signs - say *ā* ...and the orthographic sign for it... - should be taught *only* by means of their pronunciation, namely: ... (*aa* (*ā*)). As said earlier, the *names* of these orthographic signs when they combine with other letters (consonants), (namely, *kānā*, *welāntī*, *mātrā*, etc.) should not be told at this stage. That is to say, the teacher should not say 'words with *kānā* ... or '*words with ā'*, but say ''words with' or '*words with* sign for (*kānā*)...' and so on. This firmly establishes the correlation between the sign and its pronunciation in the children's minds. As a result, they do not read by breaking the words, but in an uninterrupted fashion. This helps in understanding, even as the speed and ease of reading go up. (See Exhibit 10 in Appendix A Exhibits in Devnagari script for how this improves the reading and understanding of the children.)

Once some letters and the sign for ? have been taught, the children should immediately be taken to the level of sentences. Similarly, with each subsequent orthographic sign, short sentences consisting of words having these signs should be introduced. This increases the children's self-confidence and also helps sustain their interest in reading. (See Exhibit 11 in Appendix A: Exhibits in Devnagari script).

* Children should be given badges bearing their names written in bold letters. The teacher can use the letters from such badges while teaching a new letter. When the children look at one another's names constantly, they start recognising the words *easily*.

* *While teaching compound words too, the teacher* can begin with the compound words in the children's names and surnames. Also, compound words should be spotted in the words for various things and objects all around, places, routine actions, adjectives, etc. and they should be used in teaching compound words.

4. Teaching to write

From the point of view of the children learning to write, there are three types of writing copying something written, taking dictation and independent writing.

Independent writing means the independent expression of one's views, observation, thoughts, feelings and ideas. That is the real core objective of learning to write. Copying and dictation are tools that help in achieving this objective. In fact, however, children appear to have mastered copying, but not dictation or independent writing.

For this, once the children have learnt a few letters of the alphabet and one or two orthographic signs, the teacher should immediately give them exercises in reading as well as copying and dictation of words and sentences containing those letters and orthographic signs. Apart from nouns, such words and sentences should also include verbs, adverbs and adjectives.

This has been clarified with examples earlier in the discussion on reading.

Right from the beginning, children should get frequent opportunity to speak and write their own short sentences. Merely asking them to "write answers to the questions" at the end of every lesson in the textbook is not enough for mastering writing.

Children's writing reflects their observations, vision, ideas and thoughts. It is important to respect them. For example, see the following sentences:

- I saw a cow. It was constantly shaking its tail. I think, mosquitoes must be biting it.
- I like my grandmother because she mixes rice and curd for me.
- Yesterday, I felt nauseated. I vomited. Then I stayed in bed throughout the day. ...I did not cry while taking the medicine. It was very bitter.

(See Exhibit 12 in Appendix A: Exhibits in Devnagari script for the original Marathi sentences written by the children.)

Exercises in the nature of 'completing the sentence ...' help in the process of mastering the sentence structure. The teacher begins a sentence and the children are supposed to complete it. This encourages multi-dimensional thinking and the children can think about various sentences. For example, if you give the words, "Yesterday, he..." the children '...', they write or come out with several alternative sentences such as:

Yesterday, he fell down. Yesterday, he did not come to the school. Yesterday, he quarreled with me. Yesterday, he was reading a book. Yesterday, he went to the market with his mother to buy a pair of shoes. Etc.

(See Exhibit 13 in Appendix A: Exhibits in Devnagari script for the original Marathi sentences written by the children.)

In order to take the children from their dialect to the standard language, some simple methods should be followed regularly. The teacher should make lists of the dialectic words and constructions that occur in the children's writing and write their equivalents in standard Marathi next to them. Such lists should be displayed in the classrooms. If the children write in dialect, the teacher should ask them to look up for themselves the standard equivalents in the lists. Over time, as the children get used to the standard Marathi equivalents, the lists are not needed.

It is very important to set aside at least one out of the 13 periods per week for Marathi for independent writing in this manner, regularly over the whole year.

The teacher should insist that the children write the overhead horizontal line over the word straight and properly, keep sufficient space between two words, as also use punctuation marks like the full stop, the comma, and others, properly.

Given the three-level - or three-layer - nature of the Devanagari script, in which the basic letters/alphabets are in the middle and certain orthographic signs are above them and certain others and some compound letters are below them, initially, say till Standard II, the children should use the 'double-line', 'triple-line' or even 'four-line' notebooks available in the market. This is very convenient and useful; it helps greatly in children's handwriting becoming legible and clear as also in reinforcing their understanding of the orthographic signs.

The various measures suggested above are based on actual work done with children in primary schools at different places. We believe the discussion would help teachers in devising further appropriate remedial measures.

Appendix A: Exhibits in Devnagari script

[Exhibit 1- Sample of words from the syllabus for Std. V, expected to be learnt by the students by September and those used in the test on dictation for Grade IV

तक्ता क्र. 1	
स्तर 4 **श्रुतलेखनासाठी चाचणीतील वाक्यांत वापरलेले शब्द**	**पाचवीच्या पाठ्यपुस्तकातील सप्टेंबरपर्यंतच्या शब्दसंग्रहातील 75 नमुना–शब्द** (ज्यावेळी विद्यार्थ्यांची चाचणी घेतली त्यावेळी त्यांना शाळेत अभ्यासक्रमानुसार हे शब्द लिहिता येणे अपेक्षित होते.)
त्यांच्या लग्नात बँड वाजवला.	अवस्था रात्रिंचर शास्त्रीय सार्वजनिक कर्तव्य ध्वनिप्रदूषण स्वच्छ ग्राहक दृष्टीने रस्त्याने न्यूनगंड वर्गबंधू सूर्यनमस्कार
माझ्या दप्तरात वह्या, पुस्तकं आणि पेन्सिली आहेत. आम्ही चिक्कू आणि संत्री आणली. सर्वांनी उद्या कार्यक्रमाला या.	स्वाक्षऱ्या महत्त्वाचा व्यक्तीच्या हस्ताक्षर उद्योगी उद्देशून रसग्रहणासहित अभिप्राय व्याघ्रप्रकल्प बाह्य पश्चात्ताप मूर्तिकार संस्कार वाऱ्याबरोबर घडवण्यास आश्चर्य अधोरेखित शिक्षा आत्मविश्वास प्रत्युत्तर वयोवृद्ध विद्यार्थिनी वृक्षदिंडी पर्यावरण काबाडकष्ट वनस्पती जगदीशचंद्र विश्रांती जन्माला आयुष्य व्यवहार सिद्ध हिंदुस्थानात मृत्यू सार्थ उच्चशिक्षण साहाय्याने हृदयातील विद्वानांनी सर्वत्र लक्ष्य व्याख्याने उक्ती कीर्ती पदार्थविज्ञान स्वस्थपणे स्त्रीलिंग पुल्लिंग संशोधन थट्टा मुख्याध्यापक झेब्रा क्रॉसिंग रॅकेट कॉलर आवश्यक अशक्य वसतिस्थान दुःख सर्वांच्या विद्यार्थिदशा आंतरिक गुण

Exhibit 2: Sample of words from the syllabus for Std. IV, expected to be learnt by the students by September and those used in the test on dictation for Grade III

तक्ता क्र 2	
स्तर 3 श्रुतलेखनासाठी चाचणीत वापरलेले शब्द	चौथीच्या पाठ्यपुस्तकातील सप्टेंबरपर्यंतच्या शब्दसंग्रहातील नमुना शब्द (ज्यावेळी विद्यार्थ्यांची चाचणी घेतली त्यावेळी त्यांना शाळेत अभ्यासक्रमानुसार इतिहास, भूगोल, विज्ञान या विषयातील हे शब्द लिहिता येणे अपेक्षित होते.)
कैलासकडे बैल आहे. पोहायला कोण येणार? गौरी हौदापाशी खेळायला गेली. नंदाला जांभळ्या रंगाच्या बांगड्या आणल्या.	स्वराज्य रायरेश्वर परिस्थिती त्यांच्याविरुद्ध हस्तगत उच्चारला कार्य ध्येयाने बेचैन फौजेपुढे उचंबळून मातोश्रीचे चित्त तेजस्वी घौडदौड मार्ग नैऋत्येला देशोधडीला पत्करणे किल्लेदार लक्ष्मी दौलताबाद घृष्णेश्वर व्यवस्था पृथ्वी उष्णता ग्रह उपग्रह सूर्यमाला लंबवर्तुळाकार अर्धा छायाचित्र महाराष्ट्र कृत्रिम दैनिक शिलावरण भूपृष्ठ व्यापलेला पॅसिफिक आर्क्टिक पृष्ठभाग शीर्षक विदर्भ केंद्रशासित चौरस किलोमीटर क्षेत्रफळ स्थान लोकसंख्या प्रशासकीय वैशिष्ट्ये पश्चिम सह्याद्री वायव्येस वनश्री प्रसिद्ध कृष्णा किनारपट्टी सांस्कृतिक व्यवसाय समृद्ध जिल्ह्यात समुद्र क्षार कार्य निर्मिती विष्टेवाटे तंतुमय बीजप्रसार वर्गीकरण अमर्याद

Exhibit 3: Grade-wise content of sentences dictated

Grade / Std. Percentage of Satisfactory Responses

Content of sentences dictated

तक्ता क्र 7		
	समाधानकारक	श्रुतलेखनासाठी दिलेल्या वाक्यांचा आशय
स्तर 1 इयत्ता 2री	41.55 %	सरळ चल. कपाट उघड. मला नवा डबा हवा. ताई शिडीवर चढली. भाकरी थापली आणि भाजली.
स्तर 2 इयत्ता 3री	27.09 %	गूळ घालून खूप लाडू केले. तुझे जुने बूट इथे ठेव. सुनीताला नवे पेन हवे आहे.
स्तर 3 इयत्ता 4थी	43.43 %	कैलासकडे बैल आहे. पोहायला कोण येणार? गौरी हौदापाशी खेळायला गेली. नंदाला जांभळ्या रंगाच्या बांगड्या आणल्या.
स्तर 4 इयत्ता 5वी	62.37 %	त्यांच्या लग्नात बँड वाजवला. माझ्या दप्तरात वह्या, पुस्तकं आणि पेन्सिली आहेत. आम्ही चिक्कू आणि संत्री आणली. सर्वांनी उद्या कार्यक्रमाला या.

Exhibit 4: Variants of Students' Writing Accepted in Independent Writing but Not in Dictation

Words or sentences expected in the test — Various responses of the children

तक्ता क्र 16	
चाचणीतील अपेक्षित शब्द वा वाक्ये	**मुलांचे विविध प्रतिसाद**
दप्तरात	ददसरात, द्रपत्रात, द्रपतार, दपतरात, दपतारात, दपरात, दकतरात, दत्तरात, दस्पतरात, दबरात, दबतरात, दप्तारात, दप्यातारत, दब्तरात, डपतरात.
पोहायला	पेहाला, पैहली, पोहला, पोवायला, पेहायल, पेहायला, पोयल, पोहयाला, पोहाईल, फवायला, पुहायला, पुहयुला, पोखायला, पाहायला, पोयाला, पाहाला
थापली	तपली, धापली, कापली, थाबली, तामली, तापले, कापळी, ताबळी, ठापली, थोपली, थापला, टुपली, टापली, यापडी, कपली
मा खडो रगवत	मी खडूने रंगवते.
नदाला जाबळ बगळी अनली	नंदाला जांभळ्या रंगाच्या बांगड्या आणल्या.
आई मुलाला शाळा उशीर होते	शाळेला उशीर होईल म्हणून आई मुलाला उठवत आहे.
मुली हातात ऊस दरली आहे	मुलीने हातात ऊस घरला आहे.

Exhibit 5: Classification of Students Errors in Dictation or Independent Writing

- मुलांच्या श्रुतलेखनात व स्वतंत्र लेखनात ज्या चुका आढळल्या त्यांची वर्गवारी पुढीलप्रमाणे–

(मुलांच्या मनातील वाक्य वा शब्द कंसात दिला आहे. मुलांनी विरामचिन्ह वापरले नसल्यास तो मजकूर तसाच दिला आहे.)

1. **अयोग्य वाक्यरचना करणे , गुंतागुंतीचा आशय योग्य शब्दात मांडता न येणे.**

   उदाहरणार्थ – बस चूक आई गाई करा (बस चुकेल म्हणून आई घाई करत होती.)

   – एक कागद चावकन दामटला चावकान ताजामदा हात घटला.

   (एक चौकोनी कागद घेतला. तो दुमडला. त्याच्यामधे हात घातला.)

2. **शब्द चुकीच्या जागी तोडणे किंवा जोडणे.**

   उदाहरणार्थ – हाव दापशी (हौदापाशी),

   त्यांच्यालगणात ब्यां टबाजवला. (त्यांच्या लग्नात बॅंड वाजवला.)

3. **सामान्यरूप न करता वाक्य लिहिणे.**

   उदाहरणार्थ – कपडेचा रंग, बटाटेची भाजी

4. **चुकीच्या लेखनामुळे अर्थविपर्यास.**

उदाहरणार्थ – धूळ घालून खूप लाडू केले. (गूळ घालून खूप लाडू केले.)

5. **सर्वनामांच्या वापराचा अभाव.**

उदाहरणार्थ – एका मुलीच्या हातात ऊस आहे एका मुलीच्या मागे शेत आहे एका मुलीचे कपडे पिवळे आणि निळा ड्रेस घातला आहे. (....तिच्या मागे....तिचे कपडे....)

6. **जोडाक्षरलेखनात अडचण**

जोडाक्षरलेखन **न येणे**. उदाहरणार्थ – दपतरात (दप्तरात)

जोडाक्षरलेखन **चुकीचे करणे**. उदाहरणार्थ – र्कयक्रमात (कार्यक्रमात)

अनावश्यक जोडाक्षर लिहिणे. उदाहरणार्थ –बट्याट्याची (बटाट्याची)

जोडाक्षराऐवजी **आधीच्या अक्षरावर अनुस्वार** देणे. उदाहरणार्थ –चिंकू (चिक्कू)

7. **प्रमाण मराठीच्या जागी बोली उच्चारांनुसार लेखन करणे**

उदाहरणार्थ –अरदा (अर्धा) , गेतले (घेतला), जाली (झाली), सारके (सारखे)

पहिले कागत घेतले (पहिल्यांदा कागद घेतला.)

मंग गागदाला मिदडले. (मग कागद दुमडला.)

मंग ऐका बाजीला मिदडले (मग एका बाजूला दुमडले.)

मंग झहाज तयार झाला. (मग जहाज तयार झाले.)

8. **योग्य व्यंजनाऐवजी निराळे व्यंजन लिहिणे.**

उदाहरणार्थ – कपात उकर (कपाट उघड.) , धुट (बूट) , तापले (थापली) , गूर (गूळ)

9. **बाराखडीचिन्ह चुकीच्या अक्षरावर देणे.**

उदाहरणार्थ – नेव (नवे), लाला (लाल),

10. **चुकीचे बाराखडीचिन्ह देणे.**

उदाहरणार्थ – गुळी गुड आहे (गोळी गोड आहे.),

भाकरे तापले आने भाजले (भाकरी थापली आणि भाजली),

तोजू जूने बेट ईते ठेव (तुझे जुने बूट इथे ठेव),

खेप लाडू किले (खूप लाडू केले)

Exhibit 6: Some Specimens of Unusual Writing

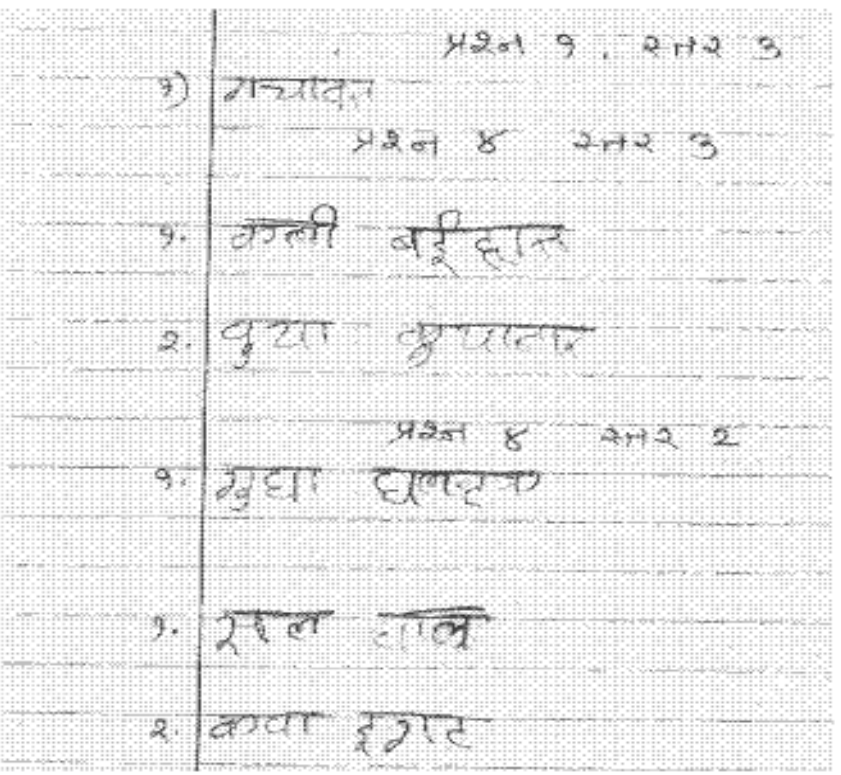

Exhibit 7: Some Specimens of Illegible Writing

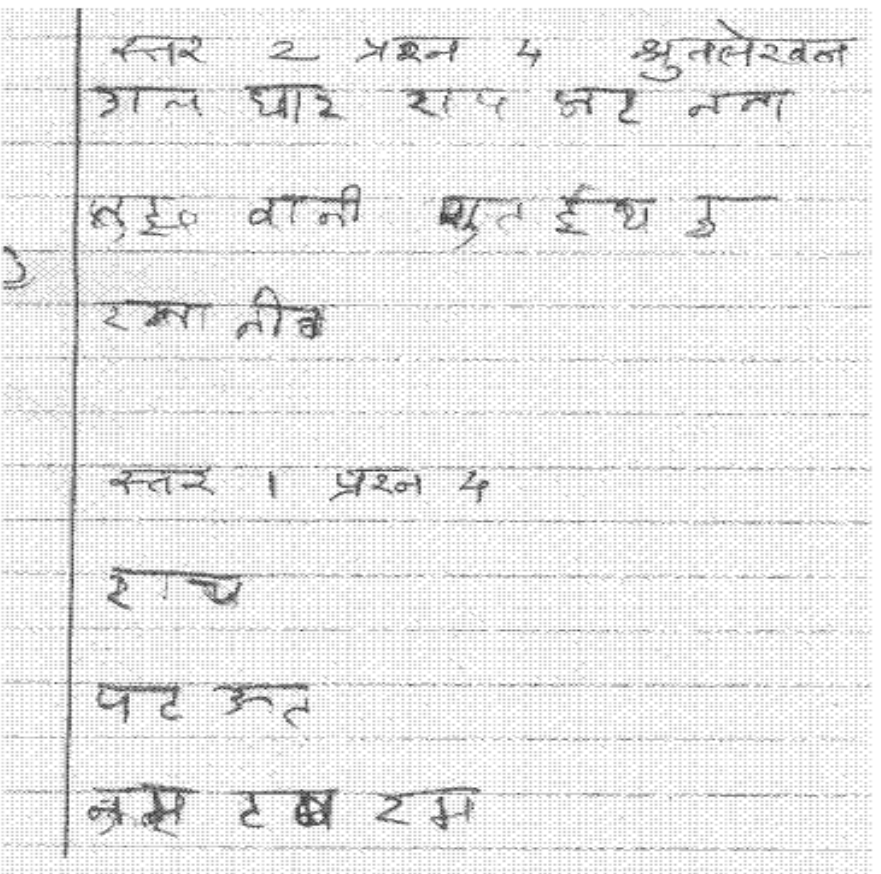

Exhibit 8: Pairs of similar sounding words

- बारकाईने व लक्षपूर्वक ऐकण्याची क्षमता विकसित व्हावी यासाठी उच्चारात साम्य असलेले शब्द ऐकून त्यांचा अर्थ सांगण्याचा, ते वाक्यात वापरण्याचा खेळ खेळता येतो. उदा. बास आणि पास, बसा आणि पसा; पार आणि फार; गोल आणि खोल; बारा आणि भारा; काख आणि खाक; पूस आणि फूस; रागव आणि राघव इत्यादी. असे कितीतरी शब्द मराठीत आहेत. त्यांची यादी बनवून शिक्षकांनी हा खेळ वरचेवर वर्गात घ्यावा.

Exhibit 9: Examples of different words to teach k:

उदा. क शिकवताना – काम, मका, सावकाश, कसला, करताना, ताक, वाकला, पकडली, लोक, किलवर, झकपक, टुकटुक, बोकोबा इत्यादी.

अक्षर अनेक शब्दांमध्ये येते, ते शब्दाच्या सुरुवातीला, मध्ये किंवा शेवटीही येते ही दृष्टी मुलाला अक्षर शिकताना यायला हवी. क कमळाचा, स समईचा अशा पद्धतीने, मुळाक्षर–तक्त्यामधील 'नाम' वर्गातल्या एकाच शब्दाशी सांगड घातल्याने येणाऱ्या साचेबंदपणामुळे वाचनात निर्माण होणारा अडसर, त्या अक्षरासाठी अनेक शब्द शोधण्यामुळे निघून जातो आणि अक्षराच्या अमूर्त आकाराशी त्याच्या आवाजाचे दृढ नाते मुलाच्या मनात तयार होते.

Exhibit 10: Proper teaching of orthographic signs facilitates reading with comprehension

- बाराखडीचिन्हे शिकवताना सुरुवातीला काना, वेलांटी, मात्रा इत्यादी शब्द न वापरता त्यांच्या उच्चारांशी शिकणाऱ्याच्या मनात पक्की सांगड बसवणे व त्यानंतर चिन्हांची ही नावे सांगणे. आ ा , इ ि , ई ी , उ ु .... अशा प्रकारे स्वतंत्रपणे येणारे स्वरचिन्ह आणि मुळाक्षराबरोबर जोडून येणारे चिन्ह एकदम शिकवावे. आ एकटा येतो, ा कोणत्या तरी अक्षरासोबत येतो; इ एकटी येते, ि कोणत्या तरी अक्षरासोबत येते... हे स्पष्टीकरण मुलांना समजते. आ ा ही दोन्ही चिन्हे आ उच्चार सांगूनच शिकवावी. इ ि ही दोन्ही चिन्हे इ उच्चार सांगूनच शिकवावी. काना, वेलांटी ही नावे सांगू नयेत.

  'कान्याचे शब्द' असे न म्हणता ' ा चे शब्द' असे म्हणावे, मात्रेचे शब्द असे न म्हणता ' ◌ं चे शब्द' असे म्हणावे. चिन्हांच्या उच्चाराशी लिपिचिन्हांची पक्की सांगड बसल्याने वाचताना मुले 'क कमळाचा ...क ला काना का, ल लसणाचा ... का ल..... म मक्याचा..म ला वेलांटी मी.....' असे तुटक न वाचता, 'क ा का.....ल ...काल .... म ी मी.....' असे वाचू लागतात. वाचलेल्याचा अर्थ समजण्यासाठी त्याची मदत होते आणि वाचनाचा वेग वाढतो आणि वाचनात सहजता येते.

Exhibit 11: Illustrations of Words and Sentences with Vowel ā

उदाहरणार्थ – झालेली अक्षरे : स व म र क प च ल भ आ झालेली बाराखडीचिन्हे: ा

शब्द: भाचा वास मार काच मावला लावला चार लचकला

वाक्ये: वर चल. लवकर सरक. पाक कर.

काल आपला राममामा आला. कसला वास आला?

Exhibit 12: Selected examples of sentences written by the children

–मला एक गाय दिसली. ती सारखी शेपूट हलवत होती. मला वाटतं, तिला डास चावत असतील..

–आजी मला आवडते कारण ती मला दहीभात कालवून देते....

–काल मला मळमळलं. उलटी झाली. मग मी दिवसभर गादीतच होते...औषध पिताना रडले नाही...खूप कडू होतं.....

Exhibit 13: Selected examples of sentences as completed by the children

काल तो पडला, काल तो शाळेत आला नव्हता, काल तो माझ्याशी भांडला, काल तो पुस्तक वाचत होता, काल तो नवीन बूट आणायला आईबरोबर बाजारात गेला.... इत्यादी.

5. CHILDREN'S ACHIEVEMENT IN ELEMENTARY MATHEMATICS

Nilesh Nimkar*

SECTION 1 - OBJECTIVES AND METHODS OF THE STUDY

Mathematics has been included in the school syllabus right from the beginning (namely, from Grade 1). Mathematics gives a person the skills to think logically at an abstract level. An important objective of the mathematics curriculum is to develop these skills of abstract thinking, along with an understanding of practical arithmetic.

Nature of mathematics education at the primary level

The mathematics curriculum for primary school, (i.e., till Grade 4) set by the Maharashtra government is divided into the following five *fields:*

1. Number concept
2. Operations on numbers (addition, subtraction, multiplication and division)
3. Measurement
4. Fractions
5. Geometry

The curriculum gives progressively more complex abilities in all these five fields that the students are expected to master till Grade 4. These abilities indicate exactly what the children ought to master in each field in each Grade. For instance, the ten abilities given in the curriculum for Grade 4 under the field *fractions* are as follows:

4.4.1 To arrange, in ascending or descending order, three or four vulgar (simple) fractional numbers with the same denominator or the same numerator.

4.4.2 To add or subtract fractional numbers with the same denominator (like fraction)

4.4.3 To solve problem based on everyday experience involving comparison/ addition/ subtraction of fractional numbers with the same denominator

4.4.4 To identify, with the help of line sections or diagrams, fractions equivalent to a given fraction

4.4.5 To be able to convert an improper fraction (where the numerator is of higher value than the denominator) into a mixed fraction showing an integer and a proper fraction, and conversely a mixed fraction into an improper fraction

4.4.6 To tell, in any given number, the place value of each digit up to three decimal places (digits from the decimal point)

4.4.7 To identify equivalent decimal fraction of a number having up to three decimal places (digits after the decimal point)

4.4.8 To convert into decimal fractions vulgar (simple) fractions with denominators 10, 100 and 1000

4.4.9 To convert decimal fractions into vulgar (simple) fractions_or into mixed fractions_showing an integer and a proper fractions; and to write or reduce fractions to their lowest form or simplest form

4.4.10 To understand and properly place the decimal point while writing down any number in decimal system.

(Note: In the above serial numbers, the first number indicates the field; the second, the Grade and the third, the particular ability.)

Since it was not possible in the present study to test all the abilities under all the five fields, it was decided to confine the present test to the main abilities under the first four fields, mainly since they are closely connected with practical day-to-day arithmetic. The field of geometry was

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omitted. This does not mean that the field of geometry is less important or inferior. All the fields are equally important for learning further mathematics. However, within the given limitations, our effort has been to cover the maximum portion from the full curriculum.

All the fields in the curriculum are not given equal emphasis from Grade 1 to Grade 4. For instance, in Grades 1 and 2, *number concept* and *operations on numbers* have more emphasis and *measurement*, *fractions*, and *geometry* have comparatively less emphasis. In Grade 4, on the other hand, the first four fields (*number concept, operations on numbers, measurement, fractions*) have more emphasis. Geometry is merely introduced in Grades 3 and 4. That is why *geometry* was omitted from the present test.

Table 1 shows the number of abilities, Grade-wise and field-wise. How the emphasis on the various fields changes from Grade to Grade will be readily apparent from the numbers of abilities expected in each Grade.

Table 1. The number of abilities, Grade-wise and field-wise

Grade/ Field	Number Concept	Operations on numbers	Measurement	Fractions	Geometry
(1)	(2)	(3)	(4)	(5)	(6)
1	9 abilities	8 abilities	4 abilities	----	1 ability
2	4 abilities	15 abilities	5 abilities	---	2 abilities
3	6 abilities	14 abilities	16 abilities	4 abilities	2 abilities
4	8 abilities	13 abilities	17 abilities	10 abilities	4 abilities

The present test was prepared for four Grades, which were broadly based on the syllabi for Grade 1 to Grade 4, respectively. The structure (of the test), comprising the four Grades and the levels of performance envisaged for each Grade, which was devised and used for the test of language, has been retained for the test of mathematics also. Table 2 shows the fields that were chosen for the test in each Grade.

Table 2. Fields Chosen for the Test in Each Grade

Grade	Fields	Grade	Fields
(1)	(2)	(3)	(4)
Grade 1	Number concept Operations on numbers	Grade 2	Number concept Operations on numbers Measurement
Grade 3	Number concept Operations on numbers Measurement Fractions	Grade 4	Number concept Operations on numbers Measurement Fractions

Grade 1 test was given to students from Grade 2, Grade 2 test to those from Grade 3, Grade 3 test to those from Grade 4 and Grade 4 test to those from Grade 5. The tests were conducted at the beginning of the academic year, i.e., from July to September in 2007. Table 3 shows the topics and the sub-topics selected for the test.

Table 3. Topics and Sub-Topics Selected for the Tests

	Topic	Sub-topic Gr 1	Sub-topic Gr 2	Sub-topic Gr 3	Sub-topic Gr 4
(1)	(2)	(3)	(4)	(5)	(6)
Number Concept	Introduction of Numbers	1 to 20 Numbers	1 to 99 Numbers	Three digit Numbers	Four digit Numbers
	Place Values	Tens and Units (numbers up to 20)	Tens and Units (Numbers up to 99)	Place Values in three digit numbers	Place Values in Four digit numbers
	Conventions of Mathematics	Ascending and Descending Order	...	Conventions relating to Signs	...
Operations on numbers	Addition	Addition of numbers up to 20	Addition of two-digits numbers with carry-over and without	Addition of three-digits numbers with carry-over and without	Addition of four-digits numbers with carry-over
		Solving word problems with oral calculations	Word problems on addition with oral calculations	...	...
	Subtraction	Subtraction of number up to 20	Subtraction of two-digits numbers with carry-over or without	Subtraction of three-digits numbers with carry-over	Subtraction of four-digits with carry-over
		Word problems with oral calculations	Word problems on subtraction with oral calculations	...	...
	Multiplication	...	Multiplicationproblems where answer is less than or equal to 20	Multiplicationof two-digit and three-digits numbers by one digit	Multiplicationof two-digits and three-digits numbers by two-digits
				Exercises of practical word problems related to multiplication	Exercises of practical word problems related to operations of multiplication and subtraction
	Division	...	...	Division of two-digits and three-digits numbers by one digit	Division of two-digits and three-digits numbers by two digits

(Contd.)

Table 3. (Concld.)

	Topic	Sub-topic Gr 1	Sub-topic Gr 2	Sub-topic Gr 3	Sub-topic Gr 4
(1)	(2)	(3)	(4)	(5)	(6)
		...	...	...	Exercises of practical word problems related to division
Measurement	Notes and coins	...	Exercises of practical transactions of Rupees and coins up to Ten Rupees	Exercises of practical transactions of Rupees and coins up to one Thousand Rupees Exercises of Practical Transactions with weights and measures up to 500 grams	
Fraction				Activities and tests involving concept of 'Half'	1. Activities and tests involving concept of fractions-one, half, quarter 2. To write down the fraction indicated by the coloured part of a given figure To draw a figure showing the given fraction
	Total Units	6	8	11	11

Note: The sub-topic Notes and coins is not directly related to measurement. However, the sub-topic is included in the field of measurement in the curriculum. Hence, the sub-topic is shown under the field of measurement in this table.

Barring the word-problems in Grades 2, 3 and 4, for other sub-topics the children were asked four supplementary questions each. The levels of the students' achievement in each sub-topic were determined as follows:

0 Could not answer any supplementary question.
1 Could answer one supplementary question.
2 Could answer two supplementary questions.
3 Could answer three supplementary questions.
4 Could answer all the four supplementary questions.

Separate criteria were set for determining the levels of the students' performance in the word-problems in Grades 2, 3 and 4. In these problems, the levels were determined with regard to the sums that involved only one of the operations, namely, *addition, subtraction, multiplication* or *division,* as follows:

0 Could not choose the right operation even when the problem was read out.
1 Chose the right operation when the problem was read out, but the answer was wrong.
2 Could not choose the right operation on reading by himself/herself, but when the teacher read out the problem, chose the

right operation and got the right answer.

3 Read the problem by himself/herself, chose the right operation, but the calculation was wrong and so the answer was wrong.

4 Read for himself/herself, chose the right operation and got the right answer.

In respect of problems involving both *multiplication* and *subtraction* (Grade 4), the levels of performance were determined as follows:

0 Both operations chosen wrongly, or could not identify the operations at all.

1 One operation was correctly identified.

2 Both operations were correctly identified, but calculations in both were wrong.

3 Both operations were correctly identified, but one calculation was wrong.

4 Both operations were correctly identified and answer was right.

It was decided to regard level 3 or 4 to be *acceptable level* for each sub-topic. Achievement level of 0 or 1was considered as unsatisfactory. For students with the level of achievement at 0 or 1, it was decided to give them the question(s) of the lower Grade under the same topic. But this was not possible in the case of each topic, because some topics are introduced into the curriculum only in Grades 2, 3 or 4. Table 4 shows the question-wise lower Grades that a student could go back to:

Table 4. Topics that could be taken back three Grades

Topics which could be taken back up to 3 levels	Topics which could be taken back up to 2 levels	Topics which could be taken back up to 1 level	Topics which could not be taken back to previous level
(1)	(2)	(3)	(4)
1) Introduction of numbers	1) Multiplication procedure	1) Division procedure	1) Word problems involving multiplication (only up to the 3rd level)
2) Place Values	(level 4 to level 2)	2) Measurement	2) Word problems involving division
3) Addition 4) Subtraction (level 4 to level 1)		3) Fraction 1 (level 4 to 3) 4) Notes and coins (level 3 to level 2) 5) Word problems involving addition 6) Word problems involving subtraction (level 2 to level 1)	3) Word problems in involving both multiplication and division 4) Fraction - 2 (only level 4) 5) Conventions of mathematics (one question on level 3 and one question on level 1)

Nature of mathematics education in primary education

Three aspects have to be considered for developing an understanding of mathematics among children. These are: 1) Introduction to the conventions in mathematics; 2) Procedural understanding; 3) Conceptual understanding. It would be appropriate to briefly discuss these three aspects here.

Introduction to the *conventions* of mathematics: Mathematics has many conventions. For example, in any number, units are at the extreme right position and tens, hundreds and so on are progressively on the left. Ascending or descending order is always written from left to right. On the number line, the numbers to the right of 0 are positive numbers and those to the left are negative numbers. All these are *conventions*. If a dictator issues an order that the units place has to

be to the extreme left, this would create great confusion. However, the mathematical concepts would remain the same. The conventions in mathematics have not been decided by any single individual at any particular time. They have evolved over a period of time. If these conventions are not the same everywhere, there will be confusion in the exchange of information. Therefore, it is necessary to teach students about these conventions along with the concept. These conventions are more to be remembered than understood.

Understanding Procedures in Mathematics: While solving mathematical problems in an abstract way, one needs to know procedures. For example, in addition, subtraction and multiplication, one has to start performing the required operation from units place and then proceed leftward step by step. While performing division, the operation starts from highest, leftmost position, moving sequentially right wards to units place. Understanding these procedures properly is the prime aim of math education at primary school level. It must be noted that there is a difference between obtaining expertise in these procedures by practicing them mechanically and developing conceptual understanding about them. In the first case, a slight change in the procedure makes the students uncomfortable. It becomes impossible for them to solve the given problem by using a different approach.

Let us take an example. While performing *subtraction* students are generally conversant with the technique of starting subtraction from units place, then moving to tens' place. If asked to solve 35-13, they find the correct answer by subtracting units first and then tens. However, they would fail to understand a vegetable seller's approach of solving then same problem: start at 35 subtract 10 to get 25; then deduct 3 from 25, to get 22 as the correct answer. Students should know that there are a number of ways of solving any problem. There is no one 'correct' method. In fact, students would develop a proper sense of procedures if they solve a given problem by using multiple approaches.

Understanding *concepts* in mathematics: Most of the primary schools concentrate on the two features of math described above. The third important feature, i.e., developing conceptual and logical understanding in Math is generally neglected. If the basic concepts are not clear, there is not much use of knowing conventions and techniques. However, we do not pay much attention to this fact. Our examination pattern is also such, that knowing the technique of solving problem serves the purpose of passing the examination. It is possible that the true about primary education in India alone. Research scientist Dr. Liping Ma [1999] has made a comparative study of the conceptual understanding of math among primary school teachers in US and China. She found that primary teachers from US did not have a sound understanding of math concepts themselves! Chinese teachers proved to be much better in this aspect.

Hence, even if one knows the *procedure*, it does not necessarily follow that one is clear about the underlying *concept*. Being clear about concepts, developing the ability to think logically, understanding procedures and getting a clear understanding of conventions-if a person masters all these aspects, *then* one can call him or her a good mathematics teacher.

In the present test, questions on all these three aspects have been asked. Their proportion in each Grade is given below:

Table 5 Proportion in Each Grade

	Concept	Method	Conventions	Total Questions
(1)	(2)	(3)	(4)	(5)
Grade 1	3 questions	2 questions	1 questions	6
Grade 2	5 questions	3 questions	.....	8
Grade 3	6 questions	4 questions	1 questions	11
Grade 4	7 questions	4 questions	.....	11

The classification in this Table is extremely broad or general. While asking or framing questions in mathematics, it is not possible to precisely demarcate or separate the questions for testing a person's understanding of *concept, convention* and *method.* However, the above classification has been done considering which aspect has a greater emphasis. On the whole, in the test, a greater emphasis is placed on testing conceptual understanding.

While designing the test, written questions, oral questions and questions based on an activity were all used. The entire test was aimed at individual students. There was no fixed time-limit for completing it. The children were free to solve the problems as they pleased. The investigators who were administering the test were trained to help the students in case they faced any difficulties. As a matter of policy, it was decided not to give marks for individual questions. Rather, a topic-wise analysis would be more useful than aggregated marks.

SECTION 2 - GRADE-WISE ANALYSIS

In this section, we shall see the levels of students' performance in each Grade, as also how they performed when they had go to lower Grades from Grades 3 and 4.

Grade 1

In Grade 1, questions were asked on six topics. They are listed in Table 6, together with the respective percentage of students attaining satisfactory level of performance.

Table 6. Respective Percentage of Students Attaining Satisfactory Level of Performance

Topic	Percentage of Students with Satisfactory Level
(1)	(2)
Number Concept 1 to 20	95.81
Addition (of numbers 1 to 20)	75.92
Subtraction (in Numbers 1 to 20)	48.60
Word problems	46.60
Problems about place value	40.31
Conventions of mathematics	21.47

In Grade 1, the students' progress in the topics *number concept* and *addition* was found to be excellent and good, respectively. Of course, it has to be remembered that these topics based on the Grade 1 curriculum have been tested at the beginning of Grade 2. In the topics *number concept* and *addition,* the level of students' progress is close to the objective of "mastery for 80% of students in 80% topics" set by the government. However, there is much deficiency in the students' progress in the topics *subtraction, word problems* and *conventions of mathematics.* Barring *number concept* and *addition,* in all other topics the percentage of Grade 1 students attaining the (expected) mastery is even less than 50%; in the topic *conventions of mathematics,* it is merely 21.47%. In this topic, questions were asked on the very simple conventions regarding ascending and descending order. In conventions, it is information or awareness that is more important than understanding. During the survey, it was observed that students did not even know the words "ascending" and "descending".

On the whole, the divergence between the students' mastery over *number concept* and

addition on the one hand and all the other topics on the other may possibly be due to the teaching plan during given academic year. It would be necessary to find out how much time is earmarked for *addition* and *number concept* and how much to the other topics. Besides, the method adopted for teaching topics such as *subtraction, place value,* etc., may also be a reason for the low result in those topics.

It emerged from the survey that 43.46% students were at level zero in the topic *subtraction.* These students did not solve even one of the four sums on *subtraction* correctly. Actually, the students are expected to become familiar with the concept of *subtraction* by the middle of Grade 1. Given the fact that the test was given to the students in Grade 2, having such a large proportion of students at the zero level is definitely a cause for great worry.

Grade 2

In Grade 2, questions were asked on eight topics. Table 7 shows these topics, as well as the respective percentage of students who attained the acceptable level of performance of 75% or more marks. As many as 87.95% students showed acceptable mastery in the topic *notes and coins,* while for *subtraction procedure,* it was as low as 16.75%.

Table 7. Respective Percentage of Students who Attained the Acceptable Level of Performance

Topic	Percentage of Students with Acceptable Level
(1)	(2)
Notes and Coins	87.95
Number Concept	65.44
Word problems (Subtraction)	63.87
	63.87
Multiplication procedure	59.68
Word problems (Addition)	33.50
Addition procedure	31.93
Place Value	16.75
Subtraction procedure	

Here the students were asked to get various amounts using coins and notes up to Rs 10. All the amounts were below Rs 10. Nearly 88 per cent (87.95%) of the students have attained acceptable mastery in this topic. The main reason for this could be that this topic is connected to the students' day-to-day life. They probably get to handle 10-rupee notes and 1, 2 and 5-rupee coins quite a lot. It is because of this experience that they acquire good knowledge of notes and coins. In Grade 3, they were asked to get various amounts by using notes up to Rs 1000. There, only 19.79% of the students showed acceptable mastery. The possibility of the students getting to handle 100, 500 and 1000-rupee notes is much less. Hence, it was observed that the students could easily carry out transactions involving handling of notes up to Rs 10. But they could not use the same concepts and skills in the context of larger currency notes. The knowledge that students gain from experience is connected to a particular context. The normal expectation is that by means of formal school education this experience-based knowledge would get generalised. The present survey showed that the students had excellent experience-based knowledge of notes and coins and transactions based on them, but the expected extension and generalisation of the experience-based knowledge had not taken place.

Topics like *place value, word problems and basic mathematical procedures* can be easily taught by using teaching aids like coins and notes. It is necessary to make use of such materials when the students are actually using them in their daily activities. In this context, it would be useful to demonstrate during teacher training programmes how this is to be done.

The number of students in Grade 2 attaining acceptable mastery in *addition, subtraction* and *place value* (33.50%, 16.7% and 31.93%, respectively) is a cause for concern.

In Grade 1, about 76% students have attained acceptable mastery in *addition*. But in Grade 2, this figure drops to 33.50%. The sums on *addition* set for Grade 2 included those on addition with carry-over. On the whole, very few students showed acceptable mastery in addition of two-digit numbers. Thus, the survey clearly brought out that the students have not learnt the procedure for addition of two-digit numbers in the expected Grade.

In Grade 2, the students' understanding was found to be the weakest in the topic *subtraction* procedure. In Grade 2, the problems on this topic included those with *subtraction* with carry-over. Only 16.75% students showed acceptable mastery in this topic. This number is extremely low and thus there is a clear need to urgently attend to the topic of subtraction with carry-over.

In Grade 1, 48.69% students have attained acceptable mastery in *subtraction* procedure. The figure falls to 16.75% in Grade 2. Basically, *subtraction procedure* is observed to be a weak topic in Grade 1 itself. When it is expanded to include subtraction with carry-over, the percentage of students attaining acceptable mastery in Grade 2 falls drastically, to one-third of what it was in Grade 1.

In Grade 2, the students were given *word problems* involving *addition* and *subtraction*. But, the word problems were so designed that in order to be able to solve them, it was necessary for them to know only the procedure for the addition of a two-digit and a one-digit number, as also subtraction of a one-digit number from a two-digit number. That is, if the students understood the word problem and interpreted it correctly, it would be possible for them to solve it even if they knew only the procedures learnt in Grade 1. As Table 8 shows, the percentage of students attaining acceptable mastery in this topic was much higher than that in the topic *procedure*.

Table 8. Percentage of Students Attaining Acceptable Mastery

Topic	Addition	Subtraction
(1)	(2)	(3)
Procedure	33.50%	16.75%
Word problems	59.68%	63.87%

The transactions forming part of the *word problems* were known to the students from daily routine. Winning marbles in a game or selling tomatoes were some of the things that were used in these problems. The knowledge gained from day to day experience may be one of the reasons why the percentage of students attaining acceptable mastery in this aspect of maths is good.

The students were weaker in Grade 2 compared to Grade 1 in the topic, *number concept*. Here the problems involved recognising two-digit numbers and recognising preceding and following numbers. The percentage of students attaining acceptable mastery in this aspect was found to come down from 91.81 in Grade 1 to 65.44 in Grade 2. The reason for this could be the particular way in which two-digit numbers are written and read in Marathi; they are written left to right, but read right to left. For instance, the number 42 is written as 42, i.e., 4 first and 2 afterwards, but read as *be-chalis* ('two-and-forty'), i.e., 2 first and 40 afterwards. Here, *be* means 2 and 40 is the *place value* of 4. Further, the pronunciation of the number in the unit place in any two-digit number differs from number to number. For example, in case of 2 in the unit place, there are five different pronunciations- *be* as in *bechalis* (forty-two) and b$\bar{a}$ (*baa*) for 12, 22, 52 and 62 respectively; *bat* as in *battees* for 32; *ba* as in *bahattar* for 72 and *by$\bar{a}$* as in *by$\bar{a}$-ainshi* and *by$\bar{a}$nnav* for 82 and 92, respectively. That is why students find it difficult to remember the Marathi names of two-digit numbers. This is, of course, a special feature of all North Indian languages. Hence, students learning in (or through) these

languages have to be given special practice to *remember* numbers till 100. Teachers should know the technique for giving such practice. Also, rather than teaching all the numbers up to 100 all at once, if they are taught step by step through the year, the stress felt by the students could be reduced.

The students were found to be weak in the topic, *place value* in both Grade 1 and Grade 2. Only 40.31% and 31.93% students, respectively, have been able to attain acceptable mastery in it. The *place name* and *place value* are two concepts that are extremely important for developing an understanding of numbers. It is also essential to get these concepts right in order to understand the procedures of the basic operations of *addition, subtraction, multiplication* and *division.* However, it is a universal experience that these concepts are not given due emphasis in schools. Adults do not find it too difficult to handle these concepts because of adequate practice and frequent use of numbers. Students find it complicated to learn them at their age. While teaching these concepts, it is necessary to use concrete objects initially and then gradually make the students think at an abstract level. As mentioned earlier, in the present survey, it has been found that students could easily handle transactions involving notes and coins up to Rs 10. For these students, using the 1-rupee coin as a symbol for unit and the 10-rupee note and the 100-rupee notes as the symbols for tens and hundreds, respectively, would prove to be effective. If the mutual relation between these symbols is explained while teaching, it would be easy to make the concept of *place value* clear.

Grade 3

In Grade 3, questions were asked on 11 topics. Table 9 lists the topics as well as the respective percentages of students attaining the acceptable level of 75% or more marks in each of them.

Table 9. Respective Percentages of Students Attaining the Acceptable Level

Topic	Percentage of Students at Acceptable Level
(1)	(2)
Addition Procedure	72.92
Some mathematical conventions	65.63
Fractions	44.79
Number concept	43.23
Division Procedure	39.06
Subtraction Procedure	34.90
Place value	25.52
Multiplication Procedure	22.92
Word problem (multiplication)	21.35
Measurement	19.79
Notes, coins	19.79

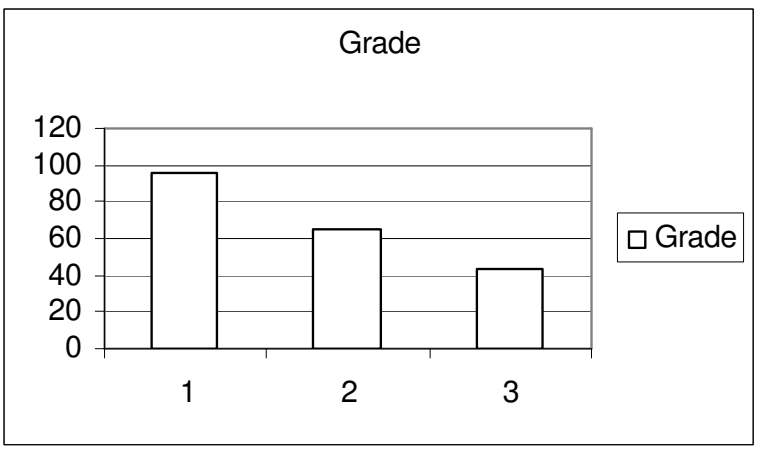
In Grade 3, in the two topics, namely, *addition procedure* and *some conventions useful in mathematics,* the percentage of students attaining acceptable level is higher compared to that in other topics. If the topic *addition procedure* is compared between Grades 2 and 3, there is a noticeable improvement from Grade 2 to Grade 3 in the percentages of students attaining acceptable level (Grade 2: 33.50%; Grade 3: 72.92%); this is a matter of much satisfaction.

In Grade 3, under the topic-*conventions*, questions were asked about the use of the signs <, =, >. The progress shown by the students here looks better compared to that in other topics. However, considering the easiness of this topic, the percentage of students with acceptable level should have been even higher.

In the topic-*fractions*, 44.79% of the students have attained acceptable level. Here, the only thing that was tested was whether the students had understood the concept of half. Writing or reading of fractions was not expected here. The whole test was conducted by using cardboard pieces. Even so, the number of students with acceptable level is rather low. It is obvious that these students would face difficulties while learning fractions in higher Grades.

Under the topic-*number concept*, the percentage of students with acceptable level was 43.23.

Graph 1. Grade-wise Performance of Students in the Topic *Number Concept*



It becomes clear from Graph 1 that as the scope of the topic *number concept* increases, the percentage of students reaching acceptable level decreases. In Grade 3, questions were asked on 3-digit numbers and the complexity of the questions was gradually increased.

Table 10. Grade-wise Questions on Number Concept

Questions in Grade 1	Questions in Grade 2	Questions in Grade 3
(1)	(2)	(3)
Read the number on the card and take out as many badges.	*On the card, circle the number that is the first after 46.*	*Out of the numbers on the card, look for the number that is more than 300 and less than 400.*

Table 10 shows how the complexity was increased. Under the topic number concept, it is not enough to be able to read and write numbers; it is also expected that one would be able to recognise lower and higher numbers, their sequence, etc. It emerged from the survey that even if the students could recognise the numbers, they had problems in sequencing and comparing them.

In Grade 3, the number of students showing acceptable performance in five out of the total 11 topics was as low as less than 30%. A principal reason for this may be the method of teaching mathematics. An in-depth study of how teachers teach these topics is needed. Guidance on topics-in which the students were found to be weak, needs to be provided in teacher training programmes.

Grade 4

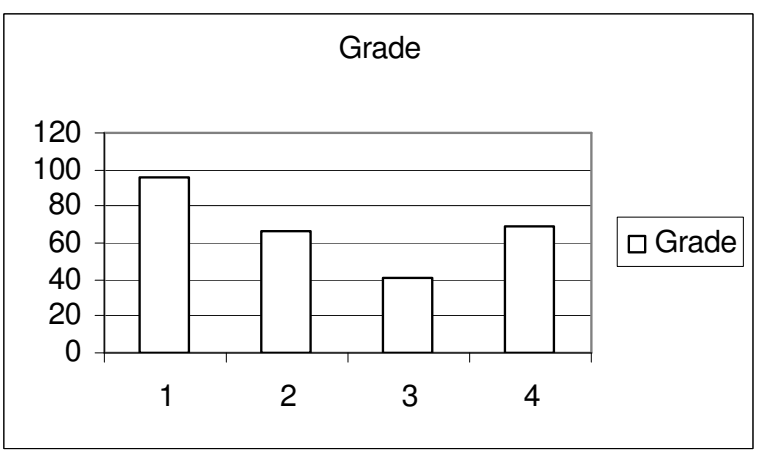
In Grade 4, questions were asked on 11 topics. Table 11 shows the topics, as well as the respective percentage of students with the acceptable level of 75% or more marks.

Table 11. Grade 4-Topics and Corresponding Percentage of Students Attaining Acceptable Level

Topic	Percentage of Students attaining Acceptable Level
(1)	(2)
Addition	79.58
Number concept	65.97
Word-problem (mixed)	40.84
Subtraction	28.27
Multiplication	24.61
Measurement	19.37
Division	19.37
Fractions-2	16.23
Word-problem (division)	15.18
Fractions-1	10.47
Place value	05.24

In Grade 4, the questions asked under the topic *number concept* were less complex. They were about 4-digit numbers and in the nature of reading the numbers, hearing the numbers and writing them down, etc. But in this Grade questions were not asked regarding the sequence or comparison of numbers. Therefore, in this Grade, the number of students reaching acceptable level in *number concept* was comparatively higher, as seen in Graph 2.

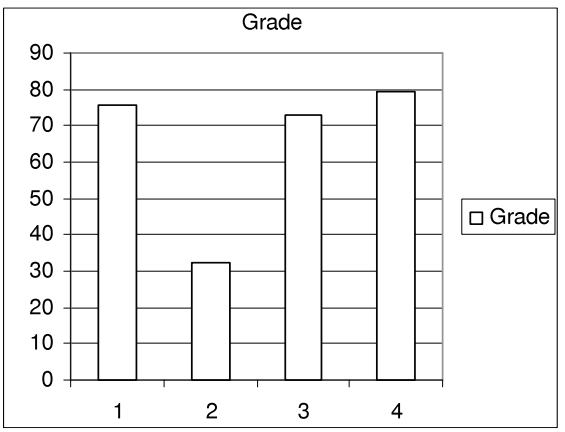
Graph 2 Grade-wise Performance of Students in the Topic, *Number Concept*



In Grade 4, under the topic *addition*, 79.58% students have attained acceptable level. In this Grade, the additions problems involved 4-digit numbers, with carry-over. A majority of students seem to have understood the *procedure* for such *additions*, because they learn addition since Grade 1 and in Grades 3 and 4 they do not learn any new concept about *addition.* Hence, in this Grade, students solve *addition* problems with the help of the concepts that they have already learnt. Because they have had such long practice over the years, the number of students who have understood *addition* of 4-digit numbers appears higher in Grade 4 compared with those in other topics.

Graph 3 shows Grade-wise percentage of students with acceptable performance in the topic, *addition.*

Graph 3. Grade-wise Performance of Students in the Topic *Addition*



In Grade 2, the percentage of students showing acceptable performance in the topic addition is seen to drop steeply. The main reason for this is that, at this stage, students have to understand the concept of *addition* with carry-over for the first time. Gradually, over the subsequent two years, through continued practice, the students are seen to grasp it clearly and firmly. However, this is at a much later stage in terms of their age than the age at which they are expected to understand it. This could also well be due to the method of teaching *addition* with carry-over. We shall see in detail later what difficulties students' face in solving *addition* problems with carry-over.

In Grade 4, the percentage of students showing acceptable performance in the topics *addition* and *number concept* was much higher than in other topics. We have presented a detailed analysis about *number concept* above, under Grade 3.

In Grade 4, in *mixed word-problems,* sums were set *on multiplication* and *subtraction.* Here 40.84% students have shown acceptable performance.

In Grade 4, in 8 out of the 11 topics, the number of students showing acceptable performance is less than even 30%.

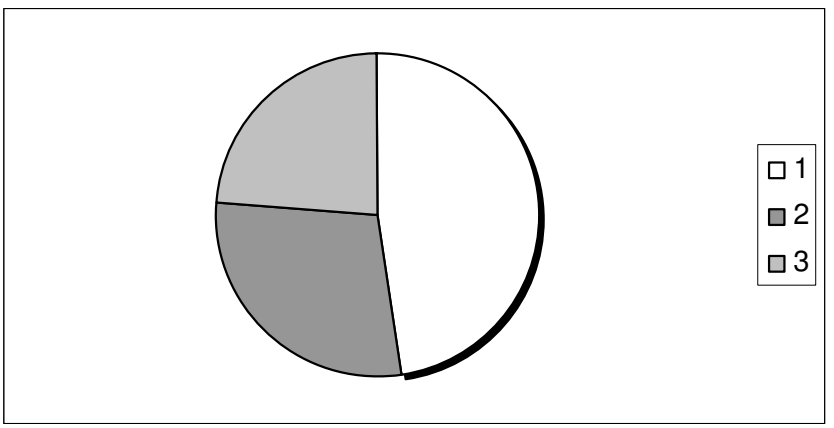
How far back did the students have to go?

In this study, if a student's performance in a given topic was found unsatisfactory, (level 0 or 1), he/she was asked to solve a question in the same topic from the test of a lower Grade. In the fields *number concept* and *operations on numbers,* questions on the topics *number concept, place value, addition* and *subtraction* had been asked in all the Grades. Therefore, in all these four topics, it was possible for a student with unsatisfactory performance to go back from Grade 4 downwards, even to Grade 1. Even after reaching Grade 1, it was possible that the performance might be unsatisfactory. This system or arrangement had been structured thus with a view to finding out whether a student at least had the necessary prior knowledge once it was found that he/she did not know a topic. Now let us analyse our observations in this regard in Grades 3 and 4.

A. Students who had to go back in the topic *number concept*

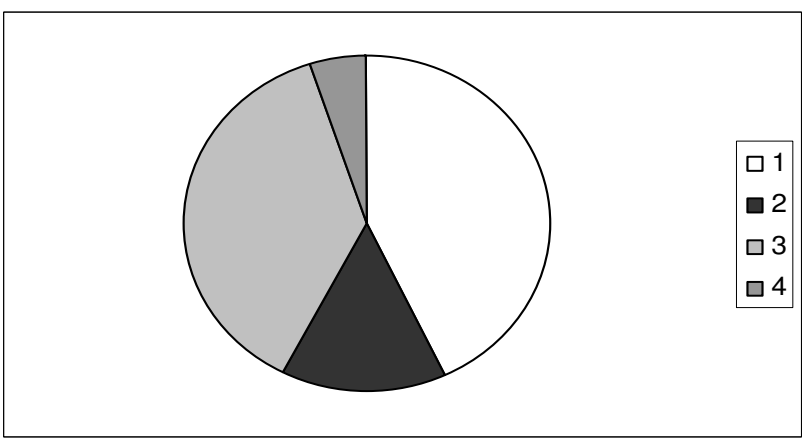
Out of the total 191 students in Grade 4, 21, i.e., about 11%, had to go back to lower Grades in this topic. Diagram 1 shows exactly how far back they had to go.

Figure 1



Out of the total 191 students, 5 had to go back till Grade 1, which means that even after reaching Grade 5, their understanding of *number concept* was only of Grade 1 level. It is necessary to investigate whether these students have any learning disability. Out of the total 192 students in Grade 3, 34 (about 18%) had to go back to lower Grades in this topic. Figure 2 shows exactly how far they had to go back.

Figure 2

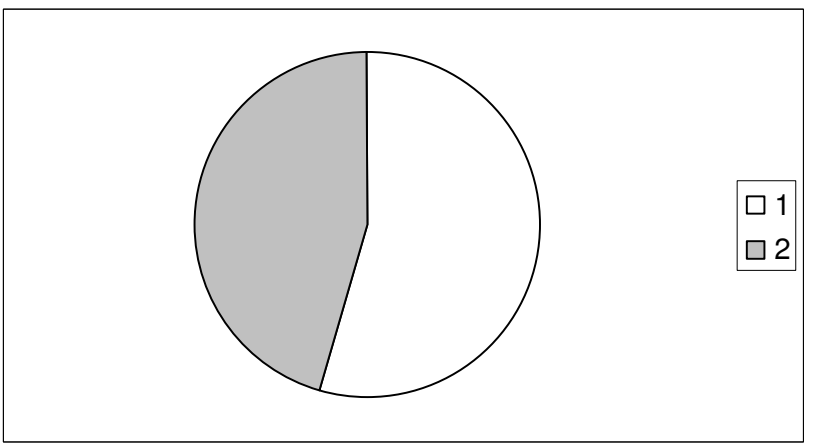


It was a matter of satisfaction that the number of students in Grades 3 and 4 who had to go back in the topic *number concept* was not very large.

B. Students who had to go back in the topic *place value*

Out of the total 191 students in Grade 4, 109 had to go back to lower Grades in this topic. Figure 3 shows how far back they had to go.

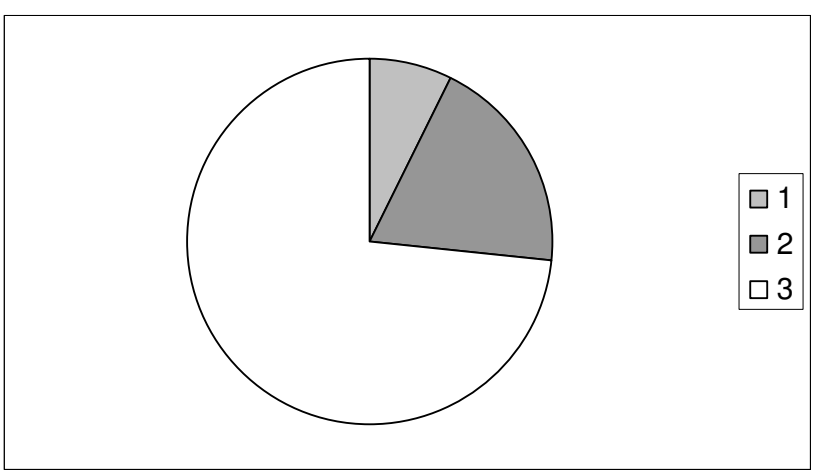
Figure 3



In Grade 4, the performance of 57% students was found to be unsatisfactory in *place value*. Further, in this Grade, questions were set on the *place value* of digits to the right of the decimal point. It is possible that so many students had to go back to lower levels because they could not solve these particular questions. In fact, it was found that five students out of 191 students could not answer the question on place value at the very elementary level.

In Grade 3, out of the total 192 students, 92 (about 48%) had to go back to lower Grades in this topic. Figure 4 shows how far back they had to go.

Figure 4

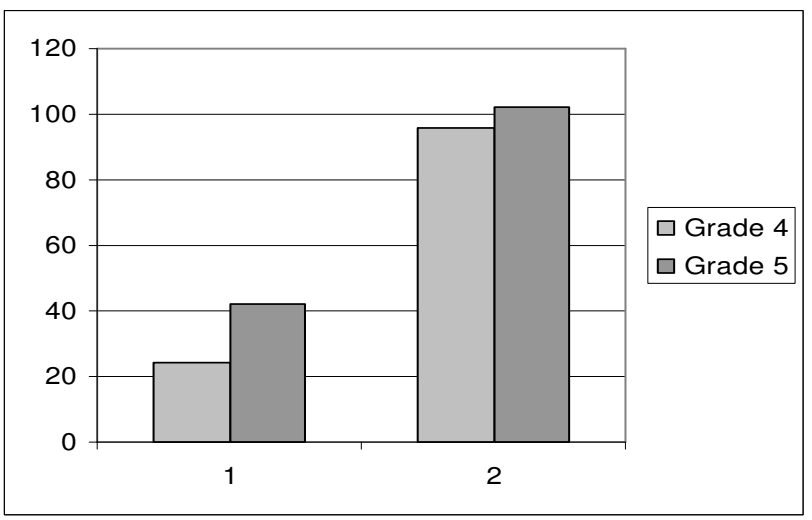


In Grade 3, out of the students who had to go back, 68% had to go back till Grade 1. The number of students in Grades 3 and 4 who had to go back in the topic *place value* is quite large.

It is a matter of concern that a basic concept like *place value* is not clear to the students. For an overall understanding of numbers to develop, it is important to have a clear idea of place value. This is also important if the students are to avoid many of the mistakes which they commit while doing basic operations. This problem can be easily overcome if sufficient time is given and an appropriate teaching method is adopted in the earlier Grades. This is analysed and discussed in detail in Appendix B.

C. Students who had to go back in the topics *addition* and *subtraction* Among the basic operations, questions on addition and subtraction were asked in all the four Grades. Let us now see how far the students had to go back to lower Grades in the questions on the *procedure of addition* and *subtraction.*

Graph 4



Comparing *addition* and *subtraction,* the number of students having had to go back in case of subtraction seems to be larger. This indicates that much work needs to be done on the method of teaching *subtraction.*

It also emerges that out of the students who had to go back in *subtraction,* about 19% students in Grade 4 and about 25% in Grade 3 have not understood the *procedure* of *subtraction* expected to be mastered at Grade 1.

Apart from the general teaching of the method of *addition* and *subtraction,* an important factor is the time that the students get for practising the *method* of *subtraction.* In order to reinforce the understanding of the *method* of *subtraction,* it is necessary to give the students progressively complex sums for solving. Let us understand this with an example:

Table 12. Problems of Subtraction in Gradually Complex Steps

8 - 2	Convenient method: counting backwards from 8
8 -6	Convenient method: Counting forward from 6
15 15 -4 -8	Subtracting a 1-digit number from a 2-digit number
15 27 -11 -15	2-digit number minus 2-digit number, without carry-over
21 -12	2-digit number minus 2-digit number, with carry-over

All the above problems involve gradually complex steps of the *procedure* of *subtraction.* In subtraction of 3-digit numbers, it is possible to set up even more steps. After the students get sufficient practice of solving problems of one step, they should be given the next step. In this manner, the understanding of the *procedure* of *subtraction* can be made easy. In the same way, while teaching the respective procedure of other basic operations, appropriate steps may be set up. This kind of planning helps in a big way in the process of developing the students' overall understanding of procedure.

From the above analysis, it can be seen that in topics such as place value and subtraction, a large number of students who were in Grade 5 (and attempting the test for Grade 4) had to go back to the test for Grade 1. Out of these, some students could not show acceptable performance even at the level of Grade 1. If a remedial programme of teaching of mathematics is to be planned for Grade 5 students, these statistics make it clear where it will have to begin. Once students reach Grade 5, the pace of their learning is faster due to their age. Therefore, it is quite possible to make up for the gaps with the help of a little but precise guidance. For this, an intensive and well-planned programme has to be devised in Grade 5 and implemented; its efficacy can then be subject of a further study.

It emerged from the survey that students use the knowledge that they gain from experience for solving sums at the practical level. However, by and large, they fall short in generalising this experiential knowledge to thinking at the abstract level. Understanding mathematical procedure is an important aspect of learning mathematics. Students learn the method of addition over four years till Grade 4 and therefore their understanding of it was found to be good at the end of the fourth years. But their understanding of the procedures for subtraction, multiplication and division was found to be inadequate.

It is obvious that the students' performance was low wherever conceptual clarity was needed. For instance, in the topic *place value,* the level of understanding understanding was found to be low among students of all grades.

The method adopted for teaching any subject directly affects students' performance. Much research has been done in mathematics education as to how to teach a given topic. We believe that if this research is effectively used in teacher training programmes, the students' performance would definitely improve.

SECTION 3: TOPIC-WISE ANALYSIS

In this section, we shall see the levels of students' performance on different topics from Grades 1 to 4. We shall also see exactly what kinds of errors the students made and what might be the reasons for those errors. Such an analysis of errors may help in devising measures to enable the students to avoid those errors. Considerable research has been done at the global level on the question of mathematics teaching. This research can also be drawn upon in searching for remedying the situation. The expected level of ability laid down for a given topic in any Grade by the Maharashtra Government and the students' actual achievement observed are also analysed and correlated in the discussion below.

Knowledge of numbers/number concept

Knowledge of numbers is an important and basic field in the study of arithmetic. Two topics under this field - *number concept* and *place value* - had been included in this survey. According to the Maharashtra Government's curriculum, the expectations from the students under the field *number concept* from Grade 1 to Grade 4 are as follows:

Table 13. Grade-wise Expectations in the Curriculum about Number Concept

Grade 1	Grade 2	Grade 3	Grade 4
(1)	(2)	(3)	(4)
1 Reading numbers 1 to 100	1 Reading/writing numbers 1 to 100	1 Introduction to 3-digit numbers	1 Introduction to 4-digit numbers
2 Writing numbers 1 to 100	2 Writing numbers in words	2 ..... of 3-digit numbers	2 Introduction to 5-digit numbers
3. Comparison of numbers 1 to 9	3. Comparison of numbers	3. Place value of 3-digit numbers	3. Comparison of fractions with the same denominator
	4 Even and odd Numbers	4 Introduction to fractions	4 Introduction to mixed fractions (or, mixed numbers)
			5 Comparison of fractions
			6 Decimal fractions and their place value

Place value is an important and essential topic for an understanding of numbers. If we look at the history of Mathematics, it has taken centuries for the concept of *place value* to evolve. Number systems that did not have this concept (for instance, the Roman number system) did not progress much. Hence, we decided to test how far or how clearly the students have understood this basic concept.

The decimal number system uses a limited number of numbers (1 to 9 and 0, thus 10) and an unlimited number of places where they can be put or used. It is a complex idea for the students to understand that the values of numerals change according to where they are placed. It is generally seen that not enough time is given in schools for teaching this topic. However, if the students do not have a firm grasp of the concept of *place value*, they have many difficulties in doing the various operations on multi-digit numbers. In the present survey, numbers and *place value* were included in all the four Grades.

Table 14 shows the abilities which were tested in the topics number concept and place value.

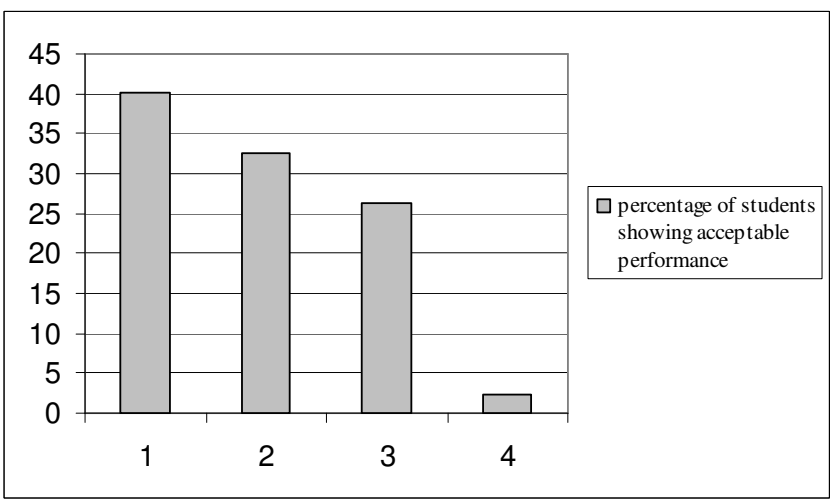
Table 14. Abilities Tested in the topics Number Concept and Place Value

	Number Concept	Place Value
(!)	(2)	(3)
Grade 1	Introduction to Numbers from 1 to 20	Place Value in numbers from 1 to 20
Grade 2	Two-digit Numbers	Place Value in Two-digit Numbers
Grade 3	Three-digit Numbers	Place Value in Three-digit Numbers
Grade 4	Four-digit Numbers	Place Value in Four-digit Numbers
		Place Value in Numbers with decimal point

A detailed analysis about the topic *number concept* has already been covered. Let us now analyse in some detail the students' performance on the topic *place value.*

Graph 5 shows the number of students showing acceptable performance on the topic *place value.*

Graph 5



It is clear from Graph 5 that the students were found to be weak in all Grades in the topic *place value.* In Grade 1, the questions on *place value* were to be solved using tangible or concrete symbols like sticks and their bundles, representing units and tens, respectively. However, only 40.31% students have shown acceptable performance in this question. Students in Grade 1 were shown a bundle of 10 sticks and told that the bundle had 10 sticks. Then this bundle and four sticks were placed before them and they were asked how many sticks there were in all. Here, it was seen that although it was known that the bundle had 10 sticks, many students counted the sticks in the bundle all over again, then they counted the loose sticks and then gave the answer. What this means is that the students do not understand the splitting of a number into units and tens, even in a very tangible and concrete form. However, they were able to handle coins and notes quite easily; so it would be more effective to use a 1-rupee coin for unit and a 10-rupee note

for ten. Since there is no question of counting the ten rupees in a 10-rupee note, they would easily understand the distinction between units and tens.

In Grade 4, the following questions were asked on the place value of numbers to the right of the decimal point:

What is the place value of 3 in 2.38?

Write any number containing the number 5 whose place value should be 5/100.

It was found that only 0.5% students showed acceptable performance in this question. In Maharashtra Government's ability-based curriculum, the following abilities are expected to be developed in students:

i. To be able to tell the place value of each number after the decimal point in three-digit numbers

ii. To be able to identify decimal fractions equal in value to numbers with up to three decimal places

iii. To be able to convert fractions with 10, 100, and 1000 as denominators into decimal_fractions
(See Maharashtra State Board of Textbook Production and Curriculum Research, (2007))

Operations on numbers

In the Maharashtra Government curriculum, it is expected that concepts regarding all the four basic operations, namely, *addition, subtraction, multiplication* and *division*, should be clear to the students by Grade 4 and that they should also be able to do calculations applying all the four operations. In this survey, the students' understanding of these operations was tested through the medium of word-problems involving the basic operations. Some other sums were also separately given for testing the students' understanding of procedure, which was necessary for being able to do the calculations. Table 15 shows the number of word-problems per mathematical operation.

Table 15. Number of Word-problems by the Operation

	Addition	Subtraction	Multiplication	Division	Multiplication + Subtraction(Mixed)
(1)	(2)	(3)	(4)	(5)	(6)
Grade 1	2	2	...	...	.....
Grade 2	1	1	...	...	.....
Grade 3	...	...	1	...	.....
Grade 4	...	...	...	1	1

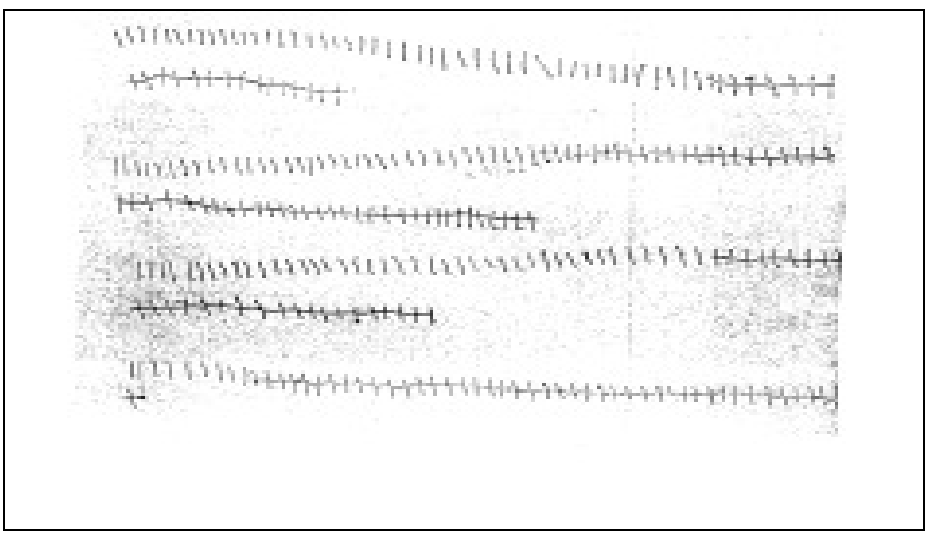
The number of problems for testing the understanding of procedure method is given in Table 16.

Table 16. Number of Problems for Testing Understanding of Procedure

	Addition	Subtraction	Multiplication	Division	Multiplication + Subtraction(Mixed)
(1)	(2)	(3)	(4)	(5)	(6)
Grade 1	4	4	...	...	8
Grade 2	4	4	4	...	12
Grade 3	4	4	4	4	16
Grade 4	4	4	4	4	16

In Grade 2, four problems were given for testing whether the students know the *procedure* of addition of two-digit numbers. Out of these, two were with carry-over and two without carry-over. The method that the students used in this Grade for solving these sums is worth studying. It will be seen that even for addition of two-digit numbers, the students tried to work out these additions by drawing as many lines (tallies) or balls as the numbers.

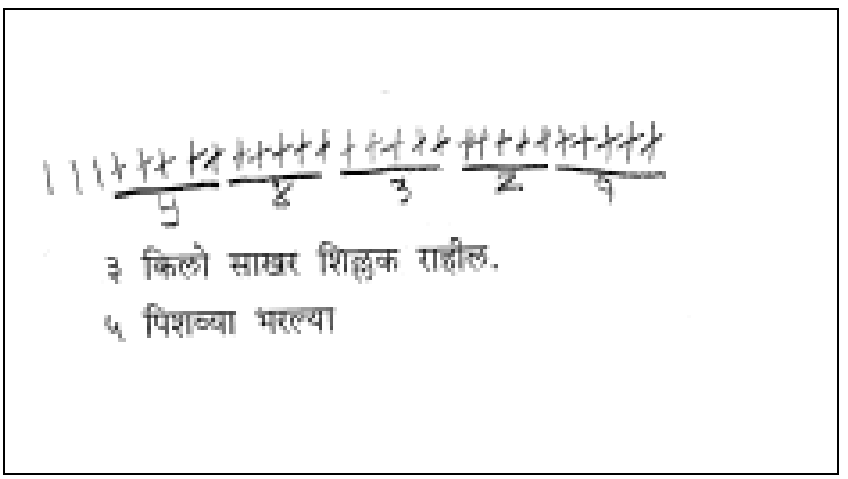
Scan 1



Actually, in this Grade, the students were expected to be able to add one-digit numbers mentally. Sometimes the students were seen to do addition of single-digit numbers in this Grade by counting forward. But it emerged during the survey that some students have simply not developed any understanding of the *procedure* by which addition can be done by independently adding the numbers in the places for units and tens, respectively. Even for solving the sum of 27+51, the students used the most elementary method of first drawing 27 lines, then 51 lines and then counting them together. Much guidance is available from research on mathematics education on how and through what stages the understanding of *procedure* develops. Teachers need to consciously pay attention to the particular stage of understanding of *procedure* at which the students may be at any given time. Examples that came forth during the survey make it clear that the students were still stuck at very elementary understanding of *procedure*.

Question 6 in Grade 4 gave a word-problem involving *division*. While solving it many students made use of an elementary method, as shown below:

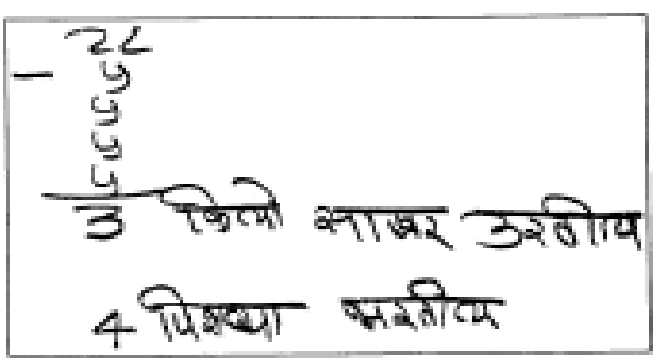
Problem: A shopkeeper has 28 kg of sugar. He has to fill bags of 5 kg each for selling. How many bags will he prepare and how many kg of sugar will remain?



Three kilos of sugar will remain, Five bags were filled

It was found that even in Grade 4, the students have used the method of drawing lines and doing the division. In fact, it is expected that in this Grade they develop an understanding of the *procedure* on a much more abstract level. Otherwise, the students may run into difficulties in further mathematics education.

The following is an example in which the student has interpreted division as repeated subtractions. Even if this is fine by itself, to do such repeated subtractions in the actual calculation is an indication of an extremely weak understanding of *procedure*.



28
-5

-5

-5
----

3 kilo sugar remains.
4 bags will be filled.

In both the above cases, the students have probably devised their own method on the basis of a practical understanding developed by them. Many students got the right answer, but they could not explain how they arrived at the answer. Of those who *could* give an explanation, let us see one as an example.

A student from Grade 4 gave the answer that the shopkeeper would prepare 5 bags and 3 kg of sugar would remain. When asked how he arrived at this answer, he said, "If we filled 2 bags of 5 kg each, it would take 10 kg of sugar; if two more bags were filled, the total sugar would be 20 kg, and 8 kg sugar would remain. If I remove five more kg from these 8 kg; then 3 kg sugar would remain and there will be 5 bags."

This boy indeed displayed an admirable understanding of *procedure* at a practical level. When he gave the right answer, he was asked which *operation* he had performed. But he could not identify it as *division*. This is an example of having an excellent practical understanding, but an inability to connect it to a mathematical operation. Students who get an opportunity to do actual transactions can solve problems orally, but their understanding of mathematical operations is not necessarily fully developed.

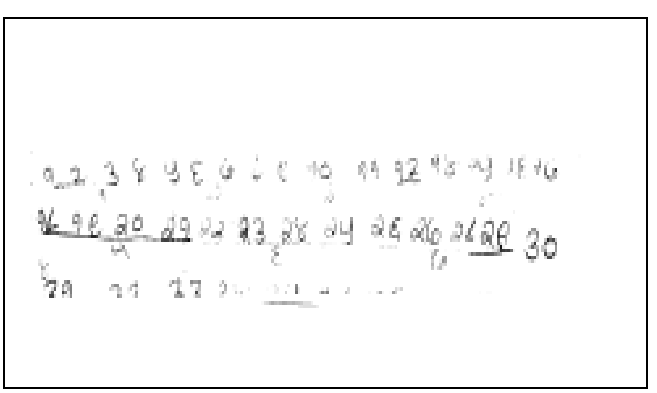
In regard to word-problems, an experience narrated by some investigators is worth thinking about. When the students read the sums themselves and solved them, they adopted the method of *addition* for a problem of *division*. But when the investigator read out the sums to the students, they gave the correct answer orally. For example, in the context of the same above-mentioned sum:

When read by himself:	When read out to him:
28 55 ------- 83	5 bags will be filled 3 kg sugar will remain Did orally.

We had adopted the policy of giving full marks if the students gave the right answer any which way. We have understood through this survey that the students' problem in mathematics is that in spite of an excellent practical understanding they have a very elementary understanding of procedure. Therefore, it is necessary to provide guidance during teacher training programmes on making an effective use of the students' practical understanding in mathematics education.

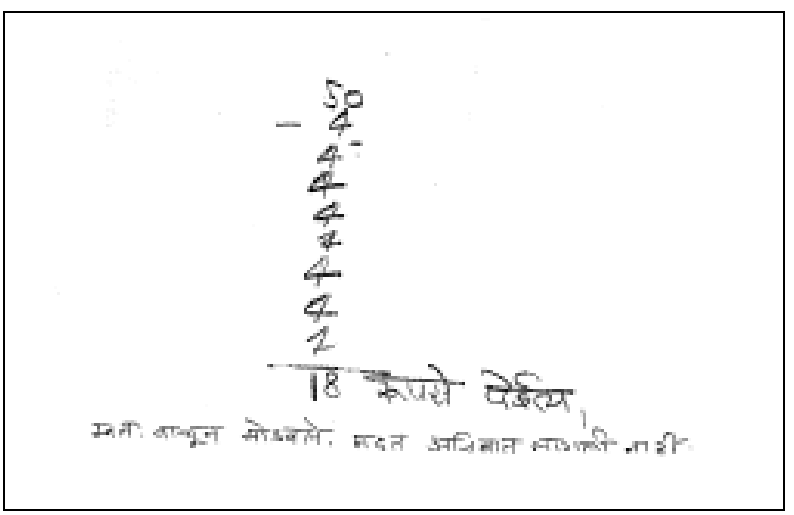
In Grade 4, one of the problems involved *operations*, namely *multiplication* and *subtraction.* Here also the students used an elementary method for solving the sums. The following is an example:

Sum: Chandan bought 8 packets at the rate of Rs 4 each and gave the shopkeeper a 50-rupee note. How much money will the shopkeeper return?
The answer given was: 16



Because a 50-rupee note was given, the student wrote all the numbers from 1 to 50 as shown. Then, since each packet costs Rs 4, the student tried to find the answer by making groups of 4 numbers each. However, in doing so, he omitted to include in the groups, the stand-alone numbers remaining at the end of the line, 17 and 30, - and got the wrong answer.

Another example of similar use of elementary method but getting the right answer for the same sum is the following:



Eighteen rupees will be returned.
(Investigator's Note: The problem was solved after the student read it himself. No help at all was required.)

One reason why the students try to solve problems in this manner may be the fact that they do not know their multiplication tables, but there can be greater clarity on this aspect only after some individual specific case studies.

This sum was set for Grade 4 and out of the total 191, 70 students gave the right answer. Out of these 70, 35 solved it orally, but could not give any explanation about how they got the answer and which mathematical operation they had used.

The sum 44+37 was given for testing the understanding of *procedure of addition.* Those who got the wrong answer for this were observed to make three main types of errors:

Error 1:
```
  44
+ 37
-------
 711
```

Sixty-one students made this error. They have not understood the concept of the carry-over when one gets a number more than 9 at the unit place. Therefore, they have added the units and tens separately and written the results under them respectively, using the method of solving a sum without a carry over.

Error 2:
```
  44
+ 37
-----
  71
```

Twelve students made this error. They seemed to know the concept of carry over, but they forgot to add the number to be carried over to the digit in the tens place.

```
Error 3:   44
         + 37
         -----
           11
```

Two students made this error. When they added the units, they got a two-digit number, which they wrote down as the answer, under units and tens; therefore they did not deem it necessary to do any further addition.

In Grade 2, students who got a wrong answer for a problem involving *subtraction* with carry over (borrowing) were found to have made six different types of errors. Five students performed *addition* instead of *subtraction*. Errors in the *procedure* of *subtraction* were as follows:

```
Error 1:   71
           -28
           -----
            50
```

Twenty four students made this error. Since they could not subtract 8 from 1, they put 0 under the unit place and proceeded to subtract the tens, getting 50 as the answer.

```
Error 2:   71
           -28
           -----
            57
```

Thirty seven students, the largest number, made this error. These students seemed to know that a smaller number is to be subtracted from a larger number; so they subtracted 1 from 8 under the units place and have written 7 and proceeded to complete the subtraction under tens.

```
Error 3:   711
           -28
           -----
            53
```

The number of students making this error is 7. They have borrowed from the tens, but not subtracted a ten from the tens.

```
Error 4:   71
           -28
           -----
            51
```

Two students made this error. Since they found that 8 cannot be subtracted from 1, they wrote 1 as it was under the units and proceeded to complete the subtraction under the tens.

```
Error 5:   71
           -28
           -----
            59
```

This error was made by two students. Since they could not do a subtraction under the units, they did an addition and did the subtraction under the tens.

```
Error 6:   710
           -28
           -----
            52
```

This error was also made by two students. They borrowed 1 from the tens place, but did not add the number in the units place to the borrowed 10, nor reduced a ten from the tens. This is a combination of two different errors at the same time.

In mathematics education, students have to learn different procedures. John Seely Brown and Kurt VanLehn have propounded a theory called *Repair Theory* to explain the errors that occur while students are learning these procedures. According to VanLehn, such errors - while learning a particular procedure - do not always

occur because of haste or inattentiveness. Many times, students use a procedure meant for solving a particular type of problem to solve some other type of problem. When they do so, they face a hurdle in completing the procedure. To remove that hurdle, they devise some strategies. These strategies are called repairs, which sometimes succeed, sometimes not. The errors that students make because of such attempted but unsuccessful strategies have been termed *"Procedural Bug"* by VanLehn [Brown and VanLehn, 1980].

Each of the errors in the aforesaid examples is in the nature of *procedural bug*. Students have taken some measures to tackle the hurdles in the *procedure* for the *subtraction* of two-digit numbers and *subtraction* with carry over or borrowing. If these errors are studied with the help of the *Repair Theory*, the teachers can accurately determine how to guide the students. If theoretical aspects like *Repair Theory* are included in teacher training, teachers can devise various remedial measures accurately.

Fractions

Introduction to *fractions* is an important topic in primary school-level Mathematics. According to the Maharashtra Government curriculum, *fractions* are expected to be introduced in Grade 3. During the survey, students in Grade 3, i.e., those in Grade 4 at the time of the test, were asked the following questions with reference to half of a square piece.

* First, the students were shown a square-shaped piece of cardboard. Then its triangular half, obtained by cutting the square piece along its diagonal, was placed before the students and they were asked whether it was a half of the square piece. They were expected to answer yes or no.
* Then, a rectangular half of the same square piece was shown to the students and they were asked whether it was a half of the square piece. Here too they were expected to answer yes or no.
* After the students were convinced that both the triangular piece and the rectangular piece were halves of the said square piece, both the half-pieces were placed before them together and they were asked which piece was bigger. They were expected to answer that since both the rectangle and the triangle were halves of the original square piece, they were equal and neither was bigger or smaller.

It emerged in the survey that the number of students who gave the right answer was only 4, i.e., 2.08%. Nearly 60% (115) of the students recognised that both the triangular and the rectangular pieces were halves of the square piece, but not that both were of the same size. Most of the students said that the triangular half was bigger than the rectangular half.

Students in primary school often think illogically and they do not even realise that. In the foregoing example, the students thought that since the pieces were of different *shapes*, their *sizes* must also be different.

According to Jean Piaget's theory, students of pre-school age often make such mistakes. But while teaching concepts like *fractions*, teachers find that primary school students also make these mistakes. In order to avoid such mistakes, a specific type of instruction is required. It is necessary to discuss such possible mistakes during teacher training programmes and instruct the teachers about appropriate remedial measures.

In Grade 4, the following questions were asked under the field *fractions:*

1.	To recognise a quarter from a whole that was shown	: 2 questions
2.	To recognise the whole from the half or quarter shown	: 2 questions
3.	To write in fractions the painted portion of a given diagram	: 2 questions
4.	To draw a diagram representing a given fraction	: 2 questions
		8 questions

Only one of the students could recognise the quarter from a whole and the whole from a quarter. Normally, a circle or a rectangle is used as a whole figure. In this survey, the students were asked to show how much the quarter of a right-angle triangle would be. They were expected to show it by estimating it visually, without taking any actual measurements. Only 19 students could think that a right-angle triangle could be divided into four equal parts. Thus, it was found that the students' difficulty was the fact that the 'whole' object (in this survey) was different from the objects that were usually used. When a rectangular piece of paper was shown as a half and the students were asked what the whole would be, 76.44% students gave the right answer.

Four questions of the type: (i) *what fraction is represented or shown by different portions of a given diagram and (ii) draw a picture showing a given fraction*, were asked in Grade 4. The number of students giving the right answer to all the four questions was 29 (16.23%) and those giving wrong answers to all the four questions was 112 (72.25%). All the four questions were from the curriculum for Grade 3 and in the present survey they were asked to the students in Grade 5.

In the question of the type *write what fraction is the painted portion of a diagram*, the students were shown figures with 1/4 and 1/5 parts thereof painted. 51 students answered that the painted portion in both diagrams was 1. They could not write in fractions how much the coloured part was. It can be surmised that they answered 1 because *one* out of the four parts was coloured. To the same question, 42 students have given 1/3 and 1/4 as the answer instead of 1/4 and 1/5, respectively, possibly because they took the coloured part as the numerator and the rest as the denominator.

It was found that while answering the question *paint the given fraction* also, the students painted the portion represented by the numerator and kept blank the portion represented by the denominator.

The topic, *fractions*, is considered to be difficult in arithmetic; hence, it is essential to devise and implement a well-planned programme for teaching *fractions.*

Measurement

Under the field measurement, in Grade 3, questions were asked using Grade and non-Grade units. The questions sought to test whether students had clearly understood that measurement requires a unit, as also to test their skills to actually measure, estimate, and use Grade units. They were asked to tell the length of a rope and a table by using the non-Grade unit of a pencil. They were expected to tell the length of the rope to be 5 pencils; and of the table, 8 pencils. Although the actual measurement was done correctly by all the students, only 46 (23.26%) of them stated the unit while giving the answer (e.g., 5 pencils). If the students merely said 5 or 8, the investigator was to help them by asking "5 what?" Even then, 76% of the students could not give the expected answer.

In questions relating to weight, the students were asked to measure 350 grams using different weights. Since buying the actual Grade weights (used in shops) would have been expensive, small sand bags of different weights - which had labels

on them indicating their respective weights - were used. It is a matter of satisfaction that 69% (132) students answered this correctly. However, the second question was so designed that it was not possible to make 450 grams using the given weights; it could be done only by putting some weight on the other side of the weighing scale. Only 18.46% (22) students gave the right answer to this question. Overall, a majority of the students correctly answered the question on measurement related to direct experience.

Questions on measurement asked in Grade 4 were mainly about the skill to estimate/guess. One question was: *What among the following will you measure using the unit meter?* - And 68.5% (131) students chose the right answer *cloth.* Another question was: *Of what could 750 grams be the weight?* Only 40% (77) students chose the right answer to that.

The students who could give a correct estimate regarding the quantity of water that a bucket could contain and the height of the doors in a house were 37.6% (72) and 14.6% (28), respectively. The skill of estimating cannot develop unless there is a close correspondence between actual practice and school education. It is a widespread experience that although students know the Grade units, they cannot estimate the measurements in those units.

Some Main Conclusions

In this survey, 765 students were given the mathematics test. The following are some main conclusions emerging from the test:

1. In Grade 1, in the two topics of *number concept and addition,* the percentage of students attaining acceptable level was excellent, but in the topics of *subtraction, place value, word-problems and conventions useful in mathematics,* it was just fair.2 The reason for this may be the amount of time devoted to each topics in the annual teaching plan at the school. It is necessary to examine how much time is given for the teaching of any given topic. Further, it needs to be checked as to how exactly *those* topics, in which the students' performance is low, are taught.
2. In Grade 3, on the topic *number concept,* questions were asked concerning comparison of numbers and smaller and larger numbers. All the numbers in these questions were three-digit numbers. In Grade 4, however, the questions were about four-digit numbers and they were in the nature of reading out the numbers and writing them down. It was found in the survey that in Grade 3, a fair percentage of students showed acceptable performance, while in Grade 4, the percentage was good. In the topic, *number concept*, it is not enough merely to be able to read and write numbers. One is also expected to identify smaller and larger numbers and the sequence of numbers. It was noticed that although the students knew the numbers, they had difficulties in the areas of their sequences and comparisons.
3. It emerged that students in Grade 2 had good practical knowledge in transactions of currency notes up to the denomination of Rs 50. The percentage of students with acceptable performance here was excellent. In Grade 3, the questions were about notes up to the denomination of Rs 1000. Here the percentage of students with acceptable performance was low. It is Possible that these student have actual experience of using currency notes up to Rs 50. In contrast, it is difficult for them to get an opportunity to handle higher-denomination notes. That is to say, students have good knowledge based on their

2. Note: 0 to 5%-very low; 6% to 25%-low; 26% to 50%-fair; 51% to 75%-good; over 76%-excellent.

experience-which can well be used fruitfully while teaching them abstract concepts in mathematics.

For instance, while teaching *place value*, 1-rupee notes or coins, 10-rupee notes and 100-rupee notes can be used as symbols for the concepts of units, tens and hundreds, respectively.

In the topic measurement also, in sums that have a bearing on the students' actual experience, the percentage of students with acceptable performance was high. In Grade 3, in the question on using weight bags for making weights up to 500 grams, the percentage of students with acceptable performance was good.

Practical knowledge and experiential knowledge gained from experience are of great help in solving word-problems. In the word-problems given to the students from Grade 2, on purpose, numbers below 50 were used, with the idea that if the students had understood the sum, they should not get wrong answers merely because they did not know the *procedure*. However, in the sums designed to test the understanding of the *procedure*, numbers above 50 were also used. Table 18 shows the percentage of students whose performance was acceptable in solving the questions on procedure and on word-problems.

Table 18. Percentage of Students with Acceptable Performance in Questions on Procedure and on Word Problems Grade 2

Topic	Addition	Subtraction
(1)	(2)	(3)
Procedure	33.50%	16.75%
Word-problems	58.68%	63.75%

It was the experience of many investigators that when a word-problems was read out to the students, they performed calculations mentally and gave the right answer, but they could not say which mathematical operation they had used. Of course, they could do these mental calculations only with small numbers from their practical experience. With sums in Grades 3 and 4 also, the experience was the same. As an example, let us see this sum involving division:

A shopkeeper has 28 kg of sugar. He has to prepare bags of 5 kg each. How many bags can he fill and how much sugar will remain?

Many students did mental calculations and gave the right answer, but they could not explain how they got it. The method that some of the students used for getting the answer is worth studying.

One student drew 28 lines, then made groups of 5 lines each and got the right answer. This student was from Grade 5. It was thus observed that students find it difficult to reach the level of abstract thinking and calculation that they are expected to follow at the level of Grade 5. Other students used the strategy of repeatedly subtracting 5 from 28 and to get the answer.

At the end of primary school, it is necessary for the students to be able to do at least some thinking at an abstract level. For this to happen, there has to be a well-planned programme of mathematics education from Grade 1 to Grade 4. The strategies that the students used in this survey for solving word-problems were probably due to their knowledge from experience and maturity of age.

4. The students were weaker in topic, *number concept*, in Grade 2 compared to Grade 1. Here the students had to answer questions

like recognising two-digit numbers and recognising numbers preceding and following them. Compared to Grade 1, the percentage of students who had reached the expected level of performance in Grade 2 was considerably less. The reason for this could be the way the names of two-digit numbers are formed in Marathi.

5. In Grade 4, in the topic *addition procedure*, the percentage of students with acceptable performance was excellent. Here, sums to be solved involved additions (with carry over) of four-digit numbers. In Grade 4, this question had the maximum number of students showing acceptable performance. Because of the longest practice that they have had in this topic, (from Grade 1 to Grade 4) the percentage of students who have understood the *addition procedure* for four-digit numbers is high in Grade 4.

6. The students were found to be the weakest in the sub-topic, place value in decimal fractions, in the entire survey. In Grade 4, the percentage of students with acceptable performance in this sub-topic is extremely low.

7. A total of eight questions were asked on *fractions* in Grade 4. They can be classified into two groups. The first was about the practical understanding of the terms half and quarter. The second group comprised questions such as drawing diagrams representing given fractions and recognising fractions from the diagrams shown. In these two groups, the percentage of students with acceptable performance was low and very low, respectively. At the level of Grade 4, students are expected to learn several complex concepts about fractions: for example, equivalence of fractions, operations on fractions, comparison of fractions, etc. If they have difficulties in basic concepts connected with fractions, they cannot be expected to learn concepts of higher complexity.

Generally throughout this survey, it has been found that students understand various concepts much later than when they are expected to understand them, and they do not understand some of them at all. The main reason for this could be the way mathematics is taught. Much research has been done at the global level on how students in primary school should be taught mathematics. A teacher training programme based on that research is required to be chalked out and implemented.

REFERENCES

Brown, John Seely and VanLehn, Jurt, 1980; *Repair Theory: A Generative Theory of Bugs in Procedural Skills.* Cognitive Science Vol. 4, October.

Ma, Liping, 1999; *Knowing and Teaching Elementary Mathematics: Teachers' Understanding Fundamental mathematics in China and the United States.* 1st Ed. Routeledge.

Maharashtra State Board of Textbook Production and Curriculum Research, 2007; Grade 4, Mathematics Textbook, Fifth Reprint, Pune.

Appendix B: Method of Teaching Mathematics: An Illustration of Teaching *Place Value*

In this report, reference has been made a number of times to the *method of teaching*. Various strategies such as making use of concrete objects, contexts known to students, properly sequenced programmes, etc., have been discussed at various places. With a view to bringing more clarity about these, we present here a model programme for teaching the topic *place value*. The reason for choosing this particular topic is the fact that the students' performance in this topic is unsatisfactory in all the Grades. This programme is an illustration. The activities under it can change appropriately from time to time and place to place. The material used can also change according to the resources available, but the basic principle underlying the programme will remain the same.

Development of concepts under the topic *place value* starts gradually right from pre-school level and continues till Grade 4. Therefore, a programme has to be devised in accordance with what is expected of students in each Grade. The curriculum prescribed by the Government of Maharashtra lays down these expectations fairly clearly in terms of *abilities.*

Although there is no government curriculum for pre-school, such as programme can be on the basis of the curriculum prepared by institutions like the Maharashtra Child Education Council.

Programme for teaching *place value* at the pre-school level

In pre-school, students are supposed to get prepared to learn concepts. They need not know the mathematical term *place value*. But let us see how to prepare them for the concept of *place value* through some activities.

This should be done towards the end of senior KG, i.e., around the age of 5 1/2 to 6 years. It is assumed that by this age the students are acquainted with numbers up to 20.

Activity 1

Give the students sticks equal to a number between 11 and 20 and a rubber band. The teacher should also keep with himself/herself the same number of sticks and a rubber band. To begin with, the teacher should count his/her sticks in front of the students and then tell them that he/she is making a bundle of 10 sticks and then make the bundle. Then ask the students the following questions:

- How many loose sticks did I have?
- How many sticks did I tie in a bundle?
- How many loose sticks are still there?
- Now, how many bundles and how many sticks do I have?

Suppose you have taken 14 sticks. Then you should explain to the students that there are ten sticks in the bundle; and then count the loose sticks "eleven, twelve, thirteen and fourteen" - and point out to the students again that there are only 14 sticks. Then you should ask each child to count his/her sticks and to make a bundle of 10 sticks. Then ask questions like those mentioned above and then explain to them and make them understand: "1 bundle and 4 sticks make 14, 1 bundle and 2 sticks make 12, 1 bundle and 5 sticks make 15" - and so on.

Activity 2

Show the students some bundles and some sticks and ask them to recognise the numbers. Conversely, tell them a number and ask them to show it in terms of bundles and sticks. The questions to be asked during this activity are important. Instead of sticks, you can use beads and strings or any other such objects. But the teaching process and the questions will be the same.

Programme on *place value* for Grade 1

In Grade 1, two-digit numbers can be shown in terms of bundles and sticks. Now the students are to be introduced to the places in the numbers. Let us see some activities for this.

Activity 1

Draw two adjoining squares on the floor or on the board. Write "stick house" in the square to the students' right and "bundle house" in the square to their left. Then show the students a number in terms of sticks and bundles, say 16. Then tell them, "*I am keeping a bundle in the bundle house and six sticks in the stick house."*

Then tell them, *"since there is one bundle in the bundle house I am writing 1 under it and since there are six* sticks in the stick house, I am *writing 6 under it."* Thus, you should demonstrate to them the two places in the number 16. The process should be repeated with other numbers. The students should also be asked to do the same thing by putting bundles and sticks in the 'houses' (squares).

Activity 2

Put a two-digit number (say 14) in front of the students in terms of bundles and sticks. Then say that since the bundle has ten sticks you will call it 'tens' and you will call a stick a 'unit'. Then ask these questions:

- How many bundles in 14?
- That is, how many tens?
- How many sticks in 14?
- That is, how many units?

After listening to the students' replies, you should tell them that *14 means 1 ten and 4 units.* Thus, you should give them practice with various numbers up to 30. Now you can tell them a number in terms of tens and units and ask them to take out bundles and sticks, or, conversely, take out bundles and sticks and ask them to say the number in terms of tens and units. After sufficient practice, the teacher can say the numbers in tens and units and then the students can be asked to write them directly.

Activity 3

Get the 1-rupee and 10-rupee notes used in students' games. If rupee notes are not readily available, write 1 and 10 on pieces of paper and prepare notes-in which the 10-rupee note should be easily recognisable and distinct from a 1-rupee note. First, count ten 1-rupee notes before the students. Then say, "I have ten 1-rupee notes, which means I have 10 rupees." Then say, "instead of these ten notes, I can have one 10-rupee note" and bring this to the students' notice. Then, make different amounts (generally up to Rs 50) using one-rupee notes. Then tell the students that the 10-rupee note can be called a *ten* and the 1-rupee note can be called *units.* Then, using the terms *tens* and *units*, and the notes, give them practice of making different numbers.

Here, the students have progressed from the absolutely concrete level of bundles and sticks to a somewhat abstract level.

Activity 4

Tell the students the formula that a clap of the hands is a ten and a snap of the fingers is a unit. Then go on to clap the hands and snap the fingers and ask them to recognise the numbers: say, 3 claps and 2 snaps mean 32. Repeat it with different numbers and tell the students to recognise and write down the numbers. Conversely, write various numbers on the board and tell each child to clap and snap accordingly.

Programme on *place value* for Grade 2

In this Grade, students are expected to learn to convert tens into units and *vis-à-vis*, as also to split a ten and write the number. Let us see how we can again use bundles and sticks here.

Activity 1

First, keep before the students several bundles and sticks representing any number between 21 and 29-say, 25. Then ask:

- How many tens are there in 25?
- And how many units?
- I will now split one of these two tens and place the loose sticks in units. Now, how many tens and how many units do you see?

After listening to the students' answers, explain to them that 25 has 2 tens and 5 units or 1 ten and 15 units. Learning to recognise numbers in different ways like this also helps in learning *subtraction* with carry-over or borrowing.

Activity 2

In Grade 2, the students have learnt the procedure of *addition.* Using bundles and sticks or notes and coins, explain to them in concrete terms that 4 tens + 2 tens = 6 tens and also, 4 tens + 2 units = 42. Give them adequate practice with the help of exercise cards.

Programme on *place value* for Grades 3 and 4

By Grade 3, the students would get a clear idea of

place value. The next step is to introduce them to the places to the left of tens, i.e., hundreds. For this, with the help of concrete symbols such as a 100-rupee note for hundreds and a 1000-rupee note for thousands, etc., teach them to make/read three or four-digit numbers. At this stage, they do not need concrete symbols for long, but concrete symbols are necessary when a given place is taught for the first time. Besides, it should also be brought to the students' notice that, for example, 400 + 20 + 5, or 4 hundreds +2 tens + 5 units is the same as 425.

As regards vulgar or simple fractions also, it is necessary to clarify the idea that 3/10 is 1/10 + 1/10 + 1/10, or three times 1/10. For introducing places to the right of the decimal point, make ten chits with *ten*, *one*, *one-tenth*, *one-hundredth*, etc. written upon them; and explain to the students that just as there are places like units, tens, etc., to the left of the decimal point, there are places like one-tenth, one-hundredth, etc, to its right. Then, with the help of the chits, make different numbers with the decimal point and demonstrate them to the students-for instance:

12.34; that is:
1 chit of 10
2 chits of 1
3 chits of 1/10
and 4 chits of 1/100.

After taking out chits in this manner, explain to the students that since 1/10 was taken three times, the value of 3 in the number is 3/10 and since 1/100 was taken four times, the value 4 in the number is 4/100. Then ask the students to make different numbers with the help of the chits, making it a point to include numbers containing zeroes, such as 20.03.

After sufficient practice like this, explain to the students that to the right of 1/100, there are further places like 1/1000, 1/10000, etc, in sequence. Although this programme for teaching *place value* would go on for four years, it is important to maintain continuity in the programme, as well as to continue to make use of the tools used in earlier Grades, in a different way in later Grades.

We have seen this programme for teaching place value in detail, as an illustration. It is possible to devise similar well-planned programmes for teaching other topics in mathematics. Effective implementation of such programmes will be an important step towards improving the students' performance.

APPENDIX C: PROCESS OF SAMPLE SELECTION, TRAINING OF INVESTIGATORS AND THE CONDUCT OF TESTS

The process of selecting sample schools and sample students

The number of children who took the test under this survey is admittedly small compared to the total number of the children studying in PMC conducted primary schools in Pune. However, they are representative of the various educational sections of Pune city. It would be in the fitness of things to understand the method that was adopted for selecting the sample schools and the sample students for this survey for ensuring that they would be a representative sample.

According to the list (as of May 2007) of the schools conducted by PMC, there are 242 municipal schools in Pune city. Their classification is as follows:

Total Number of Schools: 242

Number of Marathi-medium schools: 215, Of which: Boys' schools: 139 Girls' schools: 76	Number of Urdu-medium schools: 27 of which: Boys' schools19; Girls' schools: 08

In order to understand how the sample schools were selected, it would be appropriate to see the nature of the sections/divisions of the city from the point of view of education. There are ten education zones in Pune city (Z1, Z2, Z3,...,Z10). Zones 1 to 9 have Marathi medium schools, while Zone 10 has Urdu medium schools. Every Zone is divided into Centres. Zones 1 to 9 have a total of 32 Centres (K 1, K2, K3,...,K32).

In the total number of 242 schools, the ratio of boys' schools to girls' schools is roughly 2:1. According to the number of students on the rolls, the schools have been classified into three types:

1. 150 or less students on the rolls: small schools
2. 151 to 250 students on the rolls: medium-sized schools
3. 251 or more students on the rolls: large schools

The sample schools were selected out of the 215 Marathi medium schools in the following manner; one school from each of the 32 Centres, thus a total of 32 schools:

* First, 9 chits were prepared for the 9 Zones-Z1, Z2, Z3...Z9.
* Then, 32 chits were prepared for the 32 Centres-K1, K2, K3...K32.
* Then, 215 chits were prepared for the 215 schools-1B, 2B...139B for the 139 boys' schools and 1G, 2G...76 G for the 76 girls' schools.
* The chits for the 9 Zones were placed sequentially, the chits for their respective Centres respectively in front of them. The chits for the boys' schools and the girls' schools under each Centre were placed, side by side, in front of the chit for each Centre.
* One Centre in a Zone was selected randomly. A girls' school under that Centre was selected randomly. Another Centre in the same Zone was selected randomly. A boys' school under that Centre was selected randomly. Then the next Centre was selected randomly and a girls' school under that Centre was selected randomly. This process was continued till all the Centres in the selected Zone were covered. The sequence B, B, G, B, B, G,...was maintained while selecting the sample schools, thus maintaining in the overall sample the ratio of 2:1 of boys' schools to girls' schools. In this manner, 32 Marathi-medium schools were selected as sample schools. 22 of them were boys' schools and 10 were girls' schools.

As the Grade 4 test was meant for Standard V students, if a selected school had classes only upto Standard IV, another school from the same Centre - with Standard V classes - was selected for the Grade 4 test. For instance, since school 104B at Mundhwa has classes only upto Standard IV, school 53B from the same Centre was included in the sample schools for the Grade 4 test.

Selection of sample students

* Six students were selected from each school for each Grade. If a particular Standard had only one Division in a particular school, all the six students were selected from that Division. If there were two Divisions, three students were selected from each.
* Six students from a single Division were selected by taking the fifth student in the class to be the first and then maintaining a gap of ten: so the fifth, fifteenth, twenty-fifth, thirty-fifth...students were selected.
* When selecting six students from two divisions, random numbers were taken as above and three students were selected from each division. Different random numbers and gaps were set for each Division.
* If a student was absent, the next student on the roll was called. If he/she was also absent, the previous one on the roll was called. For instance, if No 5 was absent, No 6 was called; if he/she was also absent, No 4 was called.

This was the manner in which the sample schools and the sample students were selected.

2.3 Training to the teachers administering the test

The job of administering this test was not to be done in a mechanical manner, like giving the question paper and the answer sheet and taking the latter back after the time was up. Rather, it was to be done with empathy, interest and maturity. Therefore, the team of teachers who would administer the test was selected carefully. Because of the work done by the test coordinators in the educational field, their contacts with people associated with various experiments proved useful and so suitable people could be selected for this task.

Members of the team to administer the test were selected on the following criteria:

* Knowledge of child psychology
* Awareness about the difficulties in primary education
* Sensitivity about the economic and social background of the students in municipal schools
* Experience of work in an institution giving education meaningfully and joyfully
* Interest in the universalisation of education and its quality

The members of the team have been closely associated, for various periods of time, with experimental education; therefore, it was easy to train them about exactly how to administer the test.

The members of the team participated in the process of anticipating what might happen during the test. Because of the members' experience with teaching at primary level and understanding of children's psychology, it was easy to discuss with them matters such as: how children think; how they could respond; why it is important to defuse the bit of stress the children might feel with an unknown person so as to ensure the credibility of the test; how to help a child to respond with ease, but, on the other hand, what sort of help might jeopardise the credibility of the test; and so on.

During the training, the team members were introduced to the material to be used during the test. They were apprised of the objective and nature of each question. They comprehensively

discussed various possible responses and also which responses to accept as satisfacory and for what reasons. The need to maintain uniformity in all this was underlined. All minute doubts of the members were cleared. They gave a mock test to one another.

Other matters - such as, what to tell the Head Master after going to the school and how to say it; how to prepare the place for the test; if the student selected in the sample was absent then how to call the next or previous student; why it was important to determine the levels of performance of the children at the time of the test itself - were discussed in detail.

Meticulous planning was done for taking the papers of a day's work to the office of ISPE and taking the response sheets for the next day's work, etc.

It was decided to get in touch through mobile phones in case it became necessary to make any changes to the plans, or if there was any last-minute difficulty. Everybody was given a list of the mobile numbers as well as the addresses of the schools and the numbers of the selected students. There were back-up members to do the job in case anyone had any unavoidable difficulty; these back-up members were also given training for the test. Thus, detailed preparations were made for the test during the course of training.

This was a task that was different from merely collecting statistical information or conducting a normal examination; it entailed deeply interacting with every student and tracking his/her growth in the fields of language and mathematics. The team who conducted the test did it competently and efficiently.

2.4 Conduct of the test

In each school, one person generally gave the test to six students from a given Grade. If it took more than the expected time to give the test to a particular student from a particular Grade, then the other members of the team gave the test to the other students from that Grade. It was because of this spirit of mutual cooperation that the task of giving the test was completed according to the timetable. The cooperation that we received from the schools in the matter of making a room available for the test, sending the sample students from their classrooms to the test room, giving their dates of birth, etc, was also important. We had sent to the Head Master of each school a letter from the PMC Education Board, together with a list of the things on which we expected cooperation from the schools. Some schools had morning sessions and some, afternoon sessions. The tests were conducted accordingly, within school hours. The changed timings of some schools were not known to the Education Board. Consequently, in some cases, a team that had reached the school early in the morning had to wait till evening for conducting the test, while in some other cases, conversely, the school was already over in the morning and therefore the team that went there in the afternoon had to return the next morning for conducting the test. Because of some holiday(s) declared by the Head Master at the eleventh hour, too, some changes became necessary and accordingly changes were made in the original plans. Declared holidays falling during the period were also considered while planning the timetable. It was ensured that the time lag between the test in the first school and that in the last school was not more than four weeks, so as to obviate any possibility of the children's responses getting affected by the time lag, ultimately affecting the credibility of the test. This was possible only because the team members went out of their way to do the job. If a sample student who took the Marathi test on the first day was absent the next day, the mathematics test was given to a new sample student, who was also given the Marathi test subsequently. That is why the number of students giving the Marathi test is higher than those giving the mathematics test. The responses

of those who gave only the Marathi test have also been included in the overall analysis. Determination of the level of performance of the children was done on the basis of the students' responses. There were five levels (0 to 4) with a student getting level 3 or 4 being categorised as one with satisfactory performance, and one getting level 0, 1 or 2 being categorised as one with unsatisfactory performance. If a student was at unsatisfactory level in a question in one Grade, he/she was given the question bearing the same number in the earlier (lower) grade; if he/she was on unsatisfactory level in the earlier Grade too, he/she was given the corresponding question in the further earlier Grade. In the Marathi test, five aspects of every student's understanding were tested: listening and comprehension, observation and verbal expression, reading, dictation and independent writing. Levels of performance were determined based on the results and statistical charts were prepared. Going beyond the criteria for determination of the level of performance, every student's responses were again individually reviewed on the basis of various criteria of language development. The objective of this review was to gauge the students' strengths and weaknesses. In this process, every student's response sheet was carefully reviewed in detail and tabulated.

6. SUMMING UP

During the last four decades, there has been a decline in the enrolment in the Municipal primary schools, first rather slowly and then rapidly.

In 2005, Indian School of Political Economy decided to make a modest effort to study the trends in enrolment and the expenditure on primary education by the Pune Municipal Corporation and the quality of teaching in the schools set up and conducted by the Corporation.

Purpose

The purpose was two-fold: In the first place, we desired to record the trend of enrolment in every primary class in all types of schools, in the different wards of the city, run by the PMC during the last over thirty years. The locations in the city where the decline was faster might lead to some pointers to the reasons behind the decline. The information about the number of enroled students and the number of primary teachers in each school in every year might give some indication of one possible reason for the decline. We were also interested in noting the total annual recurring and non-recurring expenditure by the PMC on every one of these schools during the years preceding the survey. That might help us find out the trend in the *real* total expenditure as well as expenditure per student enroled.

The second question to which our investigation was directed was the quality of education at the primary level. The enquiry would cover the students' ability in reading, writing and arithmetic. This, of course, cannot be done for the years earlier than the year of enquiry. But, a meaningful enquiry into this might suggest an important reason for both the cause and result of the decline in numbers.

Data Sources

With huge efforts, the Indian School of Political Economy could compile a decent year-wise database of enrolment in and the expenditure on the primary schools conducted by the Pune Municipal Corporation for the period between 1975-76 and 2005-06. Details such as the total number of schools, medium of instruction-wise classification of total number of schools, teachers therein, number of students enroled, gender-wise break-up of the total number of students are provided in the Annual Reports of the Board of Education of PMC in an aggregative form. School-wise, standard-wise, medium of instruction-wise and gender-wise disaggregate data on enrolment was compiled for the months of September and March of each year for the entire period from 1969-70 to 2005-06 from "Monthly Salary Statements" submitted by the schools to the Board of Education every month. The detailed analysis of the same is presented in the present study.

Enrolment

Aggregate data from the Annual Reports of the Board of Education showed that total enrolment in the 182 primary schools in the year 1975-76 stood at 77, 412. The number of schools and the enrolment steadily increased till in 1995-96 when there were 113003 students in 232 schools. Total enrolment started declining in 1997-98, but that trend appeared to be temporarily arrested till 2000-01, because of schools in the peripheral regions of the city brought under the jurisdiction of PMC in the year 1999-2000 and subsequently removed from it in 2003-04. The enrolment count attained its peak in the year 2000-01 and stood at 1,19,927 in 314 schools. Subsequent to that, the enrolment count recorded a declining trend and stood at 1,05,587 in 287 schools in the year 2005-06. (See Chapter 3, Annexure 1.)

Focusing attention on the purely primary schools (that is, Classes I-IV) of PMC, that is considering the exclusive primary schools as well as the enrolment in classes from I to IV in the middle schools from the disaggregated data, similar but still sharper trends are noticed.

Over these 36 years the number of children of primary school going age in Pune has steadily increased. So, it is clear that not only lesser number of children than in 1984 but also a declining proportion of children in the primary school going age group was coming to the Corporation's primary school classes. The others were going, in increasing numbers and proportions, to private primary schools, mainly English medium schools.

Enrolment of Male and Female Students

From the disaggregated data from the Monthly Salary Statements one finds a marked difference in the dynamics of enrolment of male and female students. Total count of male students attained its peak level of 59,912 in the year 1980-81. However, the total count of female students reached its peak of 58,316 much later, that is, after almost two decades in the year 1999-2000.

Between March 1970 and March 1981, the number of boys in Classes I-IV increased by about 159 per cent, which was much higher than the increase in total enrolment. The number of girls in these classes was much lower in March 1970 and increased by March 1980 by about 170 per cent, that is, by a higher percentage than in the case of boys. From March 1981, however, the decline in number of boys has been continuous, if not steady. By March 2006 it had declined by about 35 per cent. The enrolment of girls, however, shows a different trend: after 1980 it registered increase, and from 1988 it stayed roughly constant, with ups and downs, till the beginning of the current century when it also declined to the level of 1980 in March 2006.

The differential trend in the enrolment of boys and girls reflects the difference in social attitude to the education of boys and girls. Traditionally in Indian society girls were most often not put to school and quite frequently, if put to school in the early years, were withdrawn for domestic work or earning some wage for the household, pending early marriage. Their increasing enrolment, partly a result of the growing population of the city, was due to a slow acceptance of the girl child's education by the working class families. However, the same household that would withdraw a male child from vernacular medium Corporation School and put into an expensive English medium one, was apt to keep the girl child in the vernacular medium corporation school.

Geographical/Locational Dimensions of Enrolment

Although the overall enrolment in the primary schools of the Pune Municipal Corporation has started exhibiting a declining trend, the statistics indicates that this decline has pronounced geographical/locational dimensions attached to it. Municipal schools situated in the heart of the city depict a relatively early and comparatively more pronounced deceleration in the enrolment compared to the Municipal schools located on the periphery. This is quite understandable, considering the fact that the majority of migrant and/or floating population resides in the peripheral localities of the city and children belonging to precisely this stratum of locals take recourse to the schooling facility provided by the Pune Municipal Corporation.

Two factors seem to be triggering this phenomenon. Parts of the central city are inhabited by relatively more educated and economically sounder strata of population. Perhaps, a belief that the quality of schooling in private schools was superior may have led these strata of population to enrol their wards in increasing numbers and proportions in private schools, in which instruction was often imparted in the English medium.

Further, over the years, besides being a cultural capital of the country and an educational hub, the city of Pune has emerged as an important and leading industrial conglomerate, attracting a

sizeable and increasing number of immigrants. Of these, relatively less educated and unskilled/semi-skilled migrant workers, usually, reside on the periphery of the city. Such migrants also constitute a large chunk of the floating population of the city of Pune. It was reported during the field inquiries that, children belonging to these migrant families were routinely admitted into municipal primary schools. Naturally, the enrolments in the PMC conducted schools in the periphery of the city continued to increase even in more recent years.

An important point which came to our notice during the course of discussion about the performance of the pupils from the migrant families in the peripheral areas of the city was that, in a number of cases, the mother tongue of the migrant children (who came from other states) happened to be different from the official medium of instruction administered in the municipal schools.

These dimensions, undoubtedly, have huge policy implications as far as the system of municipal primary schooling in a sprawling metropolis such as Pune is concerned.

Importance of Municipal Primary Schools

The study brings to the fore certain crucial qualitative aspects of the world of primary education imparted by an institution of local self-government such as a Municipal Corporation, which has several policy implications. Some of the salient features of this system which emerge out of the present study and warrant careful attention are:

Although the enrolment in the primary schools conducted by the Pune Municipal Corporation, of late, depicts a declining trend, the absolute number of children in the school going age who avail of this facility is still sizeable, most of them belonging to the socio-economically deprived strata of the city population, being also the first or second generation of the school goers in their respective families. Municipal primary schools alone facilitate their entry into the world of learning.

The primary education imparted through the municipal schools does not entail any expenditure on schooling on the part of the households. Hence, families belonging to the underprivileged sections of the society prefer to educate their girl children in the municipal schools up to the upper primary level, that is, up to the seventh standard. On the other hand, the male child in the family is put into a private school after the fourth standard.

These findings need to be studied carefully, so that the following crucial point does not get neglected: When it is argued, under an ill-informed view of the role of government in the context of economic restructuring, that the government should exit from a field such as education, what effective alternative are we going to provide immediately to these large numbers who are perforce dependent on this very education system currently provided by the government? In fact, the need of the hour is to develop a culture of carrying out studies such as the present one, in our respective cities.

Teaching of English

We did not survey any English medium schools. However, the following observations on the teaching of English are offered in order to draw attention to them and promote discussion on them. We think if teaching of the three R's is improved, the enrolment will improve. As for learning English, experiments in some schools in the state with teaching the primary level students to speak commonly used sentences in English, along with good training in their mother tongue, will give them greater confidence, and help them get over their inferiority feeling *vis-à-vis* the children from English medium primary schools. Teaching of English as a language in the high

schools also needs considerable improvement. What needs to be emphasised is the student's ability to read and understand English books without difficulty and his/her ability to compose general correspondence, etc., in English. The ability to speak fluently in English need not be emphasised in the teaching of English. If reading is free and competent, the student can go to any college where English may be the medium of instruction, without difficulty. What should be emphasised is the student's ability to understand and translate English articles into the mother tongue. For all this to happen, teaching English to children from the very first standard is not necessary, indeed, is undesirable. If such steps are taken, the enrolment in the Municipal Schools will surely improve. Failure to take such steps amounts to the state flouting the constitutional obligation to provide elementary education to all children.

Drop-outs during the Year

The data on drop-outs from the schools during the year was calculated by deducting the number of students on roll in the month of March in an academic year from the number on rolls in the preceding month of September. It is possible that sometimes the March number may be higher than the September number, if admissions have been delayed for any reason. Subject to this, the data show that the withdrawals or drop-outs have been persistent, except in a few years when possibly some admissions were late. The average number of drop-outs per school has fluctuated largely between 10 and 30, with the average per class varying between 2 and 6. This may appear rather small per class. But it is not a very happy sign that most of the time students are dropping out of school.

Class Size

The strength of the class in primary schools has also deteriorated over the years. In 1971, the average class strength was 35. But, soon it went beyond 40 and reached 60 around the beginning of the 1990s. During the first six years of this century, it has hovered round 50. This is contrary to accepted principles of primary education, particularly where many students come from households with little educational background. This requires increase in the number of teachers at the primary level. The decline in the strength of students appears to have led to a more rapid decline in teachers' strength, leaving the size of the class around 50. This calls for greater budgetary allocation for school education by the Corporation, so that the average strength of the class can be brought down to and maintained at around 30.

Students per Teacher

The number of students per teacher in PMC primary schools (considering schools with classes I-IV as well as I-VII) increased from 36 in 1975-76 to 48 in 1993-94, but subsequently declined to 36 again in 2002-03 before increasing to 42 in 2005-06. It is worth noting that throughout the period from 1975-76 to 1993-94, for which data on teachers in approved private primary schools is available from the Annual Reports of PMC School Board, the number of students per teacher in private schools (including English medium ones) was between 42 and 51, being always higher than that for the PMC schools. We have not assessed the quality of learning in private schools. However, with the number of students per teacher higher than 40, one wonders how the quality of learning in primary schools, whether PMC conducted or private, can be expected to be up to the mark.

Teachers' Salary

There is no reason to fear that the salary of teachers of primary schools in Pune city's Corporation Schools is low, by historical standards. We have data for the teachers' salary in the

exclusive primary schools run by the corporation. The data show that the average salary of a teacher was Rs 263.4 in the month of March, 1970. By March, 2006 it had risen to Rs 12, 396.6, all at current prices. Adjusting it for the rise in the Consumer Price Index for industrial workers in Pune, we find the salary in 2006, at March 1970 prices to be Rs 793.8, that is, three times the salary in 1970, in real terms.

Expenditure per Student

Total expenditure of PMC Board on PMC schools (considering schools with classes I-IV as well as I-VII), per student, increased from Rs 192 to between Rs 4000 and Rs 5000 during the years from 2000-01 to 2003-04, subsequently rapidly increasing in the last three years only. It stood at Rs 7942 in 2005-06. Because of the very high share of the total expenditure which salaries including retirement benefits of the staff absorb, of the total expenditure per student in 2005-06 Rs 6155 was paid out as staff salaries and only nearly Rs 980 per student was available for Expenditure on PMC schools, other than salaries and retirement benefits, i.e., for meeting the expenditure of running the schools. In fact, the years 2003-06 saw some stepping up of this expenditure. In previous years, this expenditure was just around Rs 250 per student. Annual expenditure per student on student benefits was between Rs 130 to just over Rs 200 during 2000-2003 and between Rs 220 and Rs 365 during 2003-06 (See: Chapter 3-Table 9 and Chart 9.) The routine expenditure for running the schools as well as that for student benefits (per student) always seems to have suffered a considerable absolute decline during the years of pay revision for the staff.

In spite of the meagre expenditures on important non-salary items necessary for improving the functioning of the schools and the quality of learning in them, what appears somewhat surprising is that the Income Expenditure Statements of the PMC School Board seem invariably to show a substantial unspent balance at the end of the year. It averages to 3.27 per cent of total receipts, and has been frequently between 4 to 10 per cent of total receipts.

General Health Condition of the Students

The Annual Reports of the School Board present some valuable but disturbing statistics regarding the general health condition of the students undergoing medical check up each year. (Chapter 3: Annexure 4). For example, the average percentage of students reported to have been found to be suffering from one or the other, major or minor health problem, which we shall refer to as the incidence of morbidity among students, is seen to be quite high around 42 per cent though it shows very large fluctuations around this level. The percentage of anaemic students among those who underwent medical check ups, on the other hand, shows a steady increase over the years from around 3 per cent in 1975-77 to over 11 per cent in 1995-96 and then further to a high level of between 12 and 15 per cent during 2003-06, the increase during the latter period has surprisingly occurred despite the introduction of the Mid Day Meals scheme in 1995-96. (Chapter 3: Table 14 and Chart 14). It is possible that the increase in the proportion of anaemic students is perhaps the result of entry of children with less well to do economic and social background. This only highlights the need for better implementation and further strengthening of the Mid Day Meals programme, and for providing other nutritional supplements in the schools. An even larger percentage of those checked are found to have thread worms. A large number have various kinds of skin diseases, ear and eye diseases and dental problems. How does one expect the children to concentrate on learning when they are uncomfortable because of these various health problems?

A number of these problems surely arise on account of lack of hygienic conditions at home and/or in the schools and/or lack of awareness of hygiene among the children. Instilling an awareness of hygiene and hygienic habits among the students and maintaining hygienic conditions in the schools are perhaps the first steps in the children's education. A host of other problems needs to be differently tackled to help children with vision or hearing impairments or speech defects. Some time, simple medical treatment administered at the early stages can be of immense help to the children to get over the problem and can greatly facilitate their learning process. Special efforts of different kind may be required for children who are slow learners for one reason or another. Perhaps, as society, we have so far not paid enough attention to the impediments to learning caused by the children's health problems.

Process of Sample Selection, Training of Investigators and the Conduct of Tests

For assessing the quality of learning in PMC conducted primary schools, of the 215 Marathi medium schools, 32 schools were randomly selected from 32 centres in 9 education zones in Pune city, keeping the ratio of boys' schools to girls' schools equal to 2:1, the same as among all the PMC conducted Marathi medium schools in the city. Six students each from Grades 2 to 5 in the selected schools were again randomly selected. Thus while the sample was small, it was a representative one. Expertly designed tests on language development and achievement in elementary mathematics, deliberately kept at levels much easier than those expected under Government of Maharashtra curriculum, were administered by carefully selected and especially trained investigators. Tests for each Grade were administered to the students in the one higher Grade, at the beginning of the academic year in 2007. (See Appendix C for details.)

Innate Abilities and in Learning Skills Acquired in the Schools

An important special feature of the present study is that while assessing the quality of learning of the pupils in a sample of the PMC conducted primary schools, the study has put questions to them which bring out their performance in innate abilities as well as in learning skills acquired in the schools. It emerged that the pupils did extremely well in innate abilities such as: writing a few sentences after observing an activity performed before them or a picture shown to them (they were much better in the latter) as well as of talking about what they observe; understanding cause and effect; displaying the ability of multi-directional thinking. Where they seem to be falling behind are in reading and writing, that is in skills they are expected to learn in the schools.

The pupils do relatively better in constructing sentences in their own dialects rather than in standard Marathi, the relative performance in standard Marathi surprisingly considerably worsening in the higher, fifth, standard. In skills related to maths, the pupils seem to do better in solving sums which are related to their world of experience, rather than those bearing on abstract methods.

The clear presence of much better innate abilities shows that a high potential exists among students of all social and economic backgrounds to pick up the acquired skills if a closer personal attention is paid to them by teachers, using teaching methods and aids thoughtfully designed after considering the nature of learning difficulties faced by them.

This requires teachers to inculcate the habit and the knack of working with the students creatively. For this, teacher training itself needs

to be more closely linked with active teaching in schools and should not be carried out in isolation in teacher training institutes alone.

Children's Language Development

Testing whether or not the students have understood the contents of the lessons in their textbooks of Marathi or any other subject was not the objective of this survey. Rather, it was to see what level the students had attained in the different aspects of language development, as also to understand exactly what difficulties they face while: speaking; listening to the teacher and learning; learning to read; and writing.

The survey clearly brings out the difficulties that children face in our schooling system during the process of their language development. It is also clear that these difficulties are interlinked and together they slow down the pace of the children's language development.

Although the Grade-wise percentages differ, it is found that guidance is especially required about the methods that teachers should adopt for developing the children's abilities to take dictation and to write independently.

The language in which all Marathi-medium textbooks are written is standard Marathi. Therefore, even within the limited context of school education, some minimal command over standard Marathi is essential for overall comprehension. Because of the efforts being made for universalising primary education, the number of children with mother-tongue different from standard Marathi in schools, has gone up appreciably. As the children move from the dialect spoken in their homes to standard Marathi, they face untold difficulties.

What is needed is an extensive and in-depth study as to exactly how, for how long and to what extent the children's dialect needs to be accepted in the initial stages, in order to make the children's transition towards the standard language easy. Side by side, what may be called 'bridge material/literature' that would help the children in this transition from dialect to standard language is also needed to be prepared in large measure.

The possibility cannot be ruled out that children who responded unsatisfactorily in writing simple words in standard Marathi may not even have understood the meanings of the words, which they heard during the tests, though our tests used words much easier than those in their textbooks.

A large percentage of students could not write down the answers that they could give verbally. This means that their difficulty lies in writing down even what they understand. When we note that the students could not write down dictation of words much easier than those they were expected to have learnt at the time when the tests were conducted, the gravity of the situation is underscored.

In independent writing, very low percentages of students in all Grades have been able to construct and write very simple sentences in standard Marathi or even in dialect, even though instead of merely telling them to imagine something and write some four sentences about it, we made it a point to place, in front of the children, some very familiar objects, like paper, toffee, notebook, coloured chalk, etc., perform familiar actions, like a paper boat being made or show pictures of children flying kites and a girl with sugar cane in her hand. The percentage of children who, after observing, could think and write down their thoughts in their dialect or standard Marathi is extremely low in Grade 1 at 28 but goes up rapidly to 73 in Grade 2, reaching 88 in Grade 4. The percentage of those who can write in the standard language increases only to 53 in Grade 4. At the stage of Grade 1, such students were just

about 16 per cent. There is thus a great need to make remedial changes from Grade 1 itself, to help the students to be able to write consistent sentences.

The errors in the children's writing - in response to dictation or in independent writing - are classified in detail in Chapter 4 on the Study of Children's Language Abilities. These have been illustrated in Appendix B on Exhibits in Devanagari script.

The number of children who ended up making the error of interchanging various letters while writing Marathi is negligible. At the same time, however, the number of those who have used orthographic signs wrongly, or used them on or with wrong letters, is notably high. **There is also clearly a need to pay attention to improving children's handwriting, so that it is at least legible.**

The percentage of children who read separating the letters and the orthographic signs is quite significant, being between 20 and 33 for all Grades. These students deserve special attention. Broken reading creates serious impediments for comprehension and closes pathway towards the wealth of the standard language.

Despite having the innate abilities to observe, to do multi-directional thinking and to understand elementary cause and effect relations, and despite the fact that the level of the tests was very easy, sadly, the percentage of children who have been able to come up to a satisfactory level of responses under all three heads of language ability, namely, oral expression, listening and comprehension and independent writing, in the test is very low. And the percentage of those achieving the highest level of 4 on a five-level (zero to four) marking scale, developed for these tests, is regrettably extremely low.

Researchers have noted the following possibilities regarding the reasons for writing inability among children: 1. Children do not remember the image of a letter that they have seen. 2. Even if they remember the image, they cannot actually reproduce it by hand. 3. Children's motor memory is faulty. 4. The muscles that are used for writing are weak. 5. The spatial awareness that is necessary for writing is not sufficiently developed. **There is no standardised test in Marathi for testing such writing inability among children. Research needs to be directed to this major shortcoming.**

Remedial Measures for Language Development

The study of students' performance in language development suggests a number of remedial measures. These are: developing listening ability; observation lessons; focusing on reading of the alphabet and the orthographic signs with ease, speed and understanding and on teaching to write.

For developing listening ability, from Standard I itself, children should get the opportunity to listen to different kinds of texts or discourse beyond the textbooks, in diverse forms such as stories, songs, poems, dialogues, jokes, messages on chits, posters or hoardings, simplified news, etc. Special games can be designed to develop ability to listen carefully. (See Chapter 4 on the Study of Children's Language Abilities.)

Various kinds of objects, visible or imaginary and invisible, places, collection of pictures, people and occasions can be observed imaginatively around and within every school, for reinforcing the children's ability to observe and to stimulate their imagination. Small groups can be formed for discussions or descriptions based on observation, which can be followed by a writing exercise in which everyone writes five to ten sentences on what is observed. While describing

something one has observed, one looks for appropriate words to use. If, through such exercises, one gets to prepare one's own sentences based on one's observations from the beginning, it helps in mastering sentence structure. One observation lesson must be planned every week.

For improving reading' letters of the alphabet should not be taught by identifying them with only one particular word, and not only by means of nouns. While learning a letter, the children should become aware that that letter can be found in any number of words and that too, at the beginning, in the middle or at the end of a word. In an inclusive manner, the teacher should take various words in the children's own vocabulary for teaching them the letters of the alphabet. Here, words from the children's dialect should be consciously included. The children should also be told about the respective equivalents in standard Marathi, but accepting dialectic words is vital for the sound-letter correlation to be established in the children's minds.

While teaching the orthographic signs, their *names,* should not be used initially. Rather, the teacher should first try to establish the relation between each orthographic sign and its pronunciation in the students' minds. This firmly establishes the correlation between the sign and its pronunciation in the children's minds. As a result, they do not read by breaking the words, but in an uninterrupted fashion.

With each orthographic sign, short sentences consisting of words having these signs should be introduced. This increases the children's self-confidence and also helps sustain their interest in reading.

From the point of view of the children learning to write, there are three types of writing: copying something written, taking dictation and independent writing. Independent writing means the independent expression of one's views, observation, thoughts, feelings and ideas. That is the real core objective of learning to write. Copying and dictation are tools that help in achieving this objective. Children's writing reflects their observations, vision, ideas and thoughts. It is important to respect them.

Exercises in the nature of 'completing the sentence ...' help in the process of mastering the sentence structure. The teacher begins a sentence and the children are supposed to complete it. This encourages multi-dimensional thinking and the children can think about various sentences.

In order to take the children from their dialect to the standard language, some simple methods should be followed regularly. The teacher should make lists of the dialectic words and constructions that occur in the children's writing and write their equivalents in standard Marathi next to them. Such lists should be displayed in the classrooms. If the children write in dialect, the teacher should ask them to look up for themselves the standard equivalents in the lists. Over time, as the children get used to the standard Marathi equivalents, the lists are not needed.

The various measures suggested in the study are based on actual work done with children in some of the primary schools. We believe the discussion would help teachers in devising further appropriate remedial measures.

Children's Achievement in Elementary Mathematics

One of the important objectives of the mathematics curriculum is to develop the skills of abstract thinking, along with an understanding of practical arithmetic. The mathematics curriculum for primary schools, (i.e., till Grade 4) set by the Maharashtra Government is divided into the following five *curricular areas:* Number concept; Operations on numbers (addition, subtraction, multiplication and division); Measurement;

Fractions and Geometry. The curriculum gives progressively complex competencies in all these five curricular areas that the students are expected to master till Grade 4. As Geometry is merely introduced in Grades 3 and 4, we decided to omit it from the present tests.

The three aspects, which have to be considered for developing an understanding of mathematics among children, are: Introduction to the conventions in mathematics; Procedural understanding and Conceptual understanding.

It emerged from the survey that children use the knowledge that they gain from experience for solving sums at the practical level. However, by and large, they fall short in generalising this experiential knowledge to thinking at the abstract level.

It is obvious that the students' performance was low wherever conceptual clarity was needed. For instance, in the topic *place value,* the level of understanding was found to be low among students of all grades.

The study presents and analyses several different types of errors in working out problems of addition involving carry over and those of subtraction involving borrowing. Such an analysis of errors may help in devising measures to enable the students to avoid those errors.

These errors can be explained as examples of a theory called *Repair Theory,* according to which such errors - while learning a particular procedure - do not always occur because of haste or inattentiveness. Many times, children use a procedure meant for solving a particular type of problem to solve some other type of problem. When they do so, they face a hurdle in completing the procedure. To remove that hurdle, they devise some strategies. These strategies are called repairs, which sometimes succeed, sometimes not. If theoretical aspects like *Repair Theory* are included in teacher training, teachers can devise various remedial measures accurately.

In this survey, 765 students were given the mathematics test. The following are some main conclusions emerging from the test:

1. In Grade 1, in the two topics of *number concept and addition,* the percentage of children attaining acceptable level was excellent, but in the topics of *subtraction, place value, word problems and conventions useful in mathematics,* it was just fair.[1] It is necessary to examine how much time is given for the teaching of any given topic and how exactly those topics, in which the children's performance is low, are taught.

2. In Grade 3, on the topic *number concept,* questions were asked concerning comparison of numbers and smaller and larger numbers. All the numbers in these questions were three-digit numbers. In Grade 4, however, the questions were about four-digit numbers and they were in the nature of reading out the numbers and writing them down. It was found in the survey that in Grade 3, a fair percentage of students showed acceptable performance, while in Grade 4, the percentage was good. In the topic, *number concept,* it is not enough merely to be able to read and write numbers. One is also expected to identify smaller and larger numbers and the sequence of numbers. It was noticed that although the students knew the numbers, they had difficulties in the areas of their sequences and comparisons.

1Note: 0 to 5%-very low; 6% to 25%-low; 26% to 50%-fair; 51% to 75%-good; over 76%-excellent.

3. It emerged that students in Grade 2 had good practical knowledge of transactions of currency notes up to the denomination of Rs 50. The percentage of children with acceptable performance here was excellent. In Grade 3, the questions were about notes up to the denomination of Rs 1000. Here the percentage of children with acceptable performance was low. It is possible that these children have actual experience of using currency notes up to Rs 50. In the topic measurement also, for example, In Grade 3, in the question on using weight bags for making weights up to 500 grams, the percentage of children with acceptable performance was good.

   That is to say, children have good knowledge based on their experience-which can well be used fruitfully while teaching them abstract concepts in mathematics. For instance, while teaching *place value*, 1-rupee notes or coins, 10-rupee notes and 100-rupee notes can be used as symbols for the concepts of units, tens and hundreds, respectively.

   Practical knowledge and experiential knowledge gained from experience are of great help in solving word problems. In the word problems given to the children from Grade 2, on purpose, numbers below 50 were used, with the idea that if the students had understood the sum, they should not get wrong answers merely because they did not know the *procedure*. However, in the sums designed to test the understanding of the *procedure*, numbers above 50 were also used. Indeed, the performance of the students in the latter test was much poorer compared to that in the former.

   It was the experience of many investigators that when a word problem was read out to the children, they performed calculations mentally and gave the right answer, but they could not say which mathematical operation they had used. Of course, they could do these mental calculations only with small numbers from their practical experience. With sums in Grades 3 and 4 also, the experience was the same.

   As an example, let us see this sum involving division:

   A shopkeeper has 28 kg of sugar. He has to prepare bags of 5 kg each. How many bags can he fill and how much sugar will remain?

   Many students did mental calculations and gave the right answer, but they could not explain how they got it.

   The method that some of the children used for getting the answer is worth studying. One student drew 28 lines, then made groups of 5 lines each and got the right answer. This student was from Grade 5. It was thus observed that students find it difficult to reach the level of abstract thinking and calculation that they are expected to follow at the level of Grade 5. Other students used the strategy of repeatedly subtracting 5 from 28 to get the answer. The strategies that the children used in this survey for solving word problems were probably due to their knowledge from experience and maturity of age.

4. The students were weaker in topic, *number concept*, in Grade 2 compared to Grade 1. Here the students had to answer questions like recognising two-digit numbers and recognising numbers preceding and following them. The reason for this could be the way the names of two-digit numbers

are formed in Marathi. (See Chapter 5 on Children's Achievement in Elementary Mathematics.)

5. In Grade 4, in the topic *addition procedure*, the percentage of students with acceptable performance was excellent. Here, sums to be solved involved additions (with carry over) of four-digit numbers. Because of the long practice that they have had in this topic (from Grade 1 to Grade 4), the percentage of students who have understood the *addition procedure* for four-digit numbers is high in Grade 4, with the number of students with acceptable performance being maximum. But their understanding of the procedures for subtraction, multiplication and division was found to be inadequate.

6. The students were found to be the weakest in the entire survey in the sub-topic, *place value* in decimal fractions. In Grade 4, the percentage of children with acceptable performance in this sub-topic is extremely low.

7. A total of eight questions were asked on *fractions* in Grade 4. They can be classified into two groups. The first was about the practical understanding of the terms half and quarter. The second group comprised questions such as drawing diagrams representing given fractions and recognising fractions from the diagrams shown. In these two groups, the percentage of students with acceptable performance was low and very low, respectively. At the level of Grade 4, students are expected to learn several complex concepts about fractions: for example, equivalence of fractions, operations on fractions, comparison of fractions, etc. If they have difficulties in basic concepts connected with fractions, they cannot be expected to learn concepts of higher complexity.

8. Generally throughout this survey, it has been found that students understand various concepts much later than when they are expected to understand them, and they do not understand some of them at all. The main reason for this could be the way mathematics is taught. The method adopted for teaching any subject directly affects students' performance. Much research has been done at the global level on how children in primary school should be taught mathematics. A teacher training programme based on that research is required to be chalked out and implemented. Appendix B illustrates a method of teaching mathematics, taking the example of teaching *Place Value*.

DOCUMENTATION

The purpose of this section is to make available to the readers official documents such as reports of committees, commissions, working groups, task forces, etc., appointed by various ministries, departments, agencies of central and state governments and international organisations, which are not readily accessible either because they are old, or because of the usual problems of acquiring governmental publications, or because they were printed but not published, or because they were not printed and remained in mimeographed form. We also present in this section, official documents compiled from scattered electronic and/or other sources for ready reference of the readers. It will be difficult and probably not worthwhile to publish the documents entirely. We shall publish only such parts of them as we think will interest our readers. The readers are requested to send their suggestions regarding official documents or parts thereof for inclusion in this section.

We are also keen to publish Papers, Notes or Comments based on the material included in this section. We invite the readers to contribute the same to our journal, which we shall consider for publication in subsequent issues of the journal, after the usual refereeing process.

In the present section, we publish:

1. Memorial Addressed to the Education Commission, Jotiba Phule

2. Primary Education and Indigenous Schools, Justice M.G. Ranade

3. Extracts from The Needs of Indian Industries and The Lines of Advance in Education, Speeches and Writings of His Highness Sayaji Rao III, Maharaja of Baroda, 1877-1927, Macmillan, 1928, Pp. 183-217.

4. Selected Passeges on Primary Education by Gopal Krishna Gokhale

5. The Elementary Education Bill, Gopal Krishna Gokhale

6. Nai Talim, M.K. Gandhi

7. Selected Passeges On Primary Education, Karma-veer Bhaurao Patil

8. The Right of Children to free and Compulsory Education Act, 2009

9. Model Rules under the Right of Children to Free and Compulsory Education Act, 2009

10. Sarva Shiksha Abhiyan Interventional Strategies For Special Training

11. National Policy on Education 2016 - Extracts

MEMORIAL ADDRESSED TO THE EDUCATION COMMISSION

Jotiba Phule

My experience in educational matters is principally confined to Poona and the surrounding villages. About 25 years ago, the missionaries had established a female school at Poona, but no indigenous school for girls existed at the time. I, therefore, was induced, about the year 1854[1], to establish such a school, and in which I and my wife worked together for many years. After some time I placed this school under the management of a committee of educated natives. Under their auspices two more schools were opened in different parts of the town. A year after the institution of the female schools, I also established an indigenous mixed school for the lower classes, especially the Mahars and Mangs. Two more schools for these classes were subsequently added, Sir Erskine Perry, the president of the late Educational Board, and Mr. Lumsdain, the then Secretary to Government, visited the female schools and were much pleased with the movement set on foot, and presented me with a pair of shawls. I continued to work in them for nearly 9 to 10 years, but owing to circumstances, which it is needless here to detail, I seceded from the work. These female schools still exist, having been made over by the committee to the Educational Department under the management of Mrs. Mitchell. A school for the lower classes, Mahars and Mangs, also exists at the present day, but not in a satisfactory condition. I have also been a teacher for some years in a mission female boarding school. My principal experience was gained in connection with these schools. I devoted some attention also to the primary education available in this Presidency and have had some opportunities of forming an opinion as to the system and *personnel* employed in the lower schools of the Educational Department. I wrote some years ago a Marathi pamphlet exposing the religious practices of the Brahmins and incidentally among other matters, adverted therein to the present system of education, which by providing ampler funds for higher education tended to educate Brahmins and the higher classes only, and to leave the masses wallowing in ignorance and poverty. I summarised the views expressed in the book in an English preface attached thereto, portions of which I reproduce here so far as they relate to the present enquiry:

"Perhaps a part of the blame in bringing matters to this crisis maybe justly laid to the credit of the Government. Whatever may have been their motives in providing ampler funds and greater facilities for higher education, and neglecting that of the masses, it will be acknowledged by all that injustice to the latter, this is not as it should be. It is an admitted fact that the greater portion of the revenues of the Indian Empire are derived from the ryot's labour from the sweat of his brow. The higher and richer classes contribute little or nothing to the state exchequer. A well informed English writer states that our income is derived, not from surplus profits, but from capital; not from luxuries, but from the poorest necessaries. It is the product of sin and tears."

"That Government should expend profusely a large portion of revenue thus raised, on the education of the higher classes, for it is these only who take advantage of it, is anything but just or equitable. Their object in patronising this actual high class education appears to be to prepare scholars who, it is thought would in time vend learning without money and without price. If we can inspire, say they, the love of knowledge in the minds of the superior classes, the result will be a higher standard, of morals in the cases of the individuals, a large amount of affection for the

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Jotiba Phule's deposition before the **Education Commission in 1881** (also known as the Hunter Commission), reproduced from the book, Selected Writings of Jotirao Phule, Pp. 140-145 in *Education Commission, Bombay, Vol II*, Calcutta, 1884 - *Round Table India*

British Government, and unconquerable desire to spread among their own countrymen the intellectual blessings which they have received."

"Regarding these objects of Government the writer above alluded to, states that we have never heard of' philosophy more benevolent and more utopian. It is proposed by men who witness the wondrous changes brought about in the Western world, purely by the agency of popular knowledge, to redress the defects of the two hundred millions of India, by giving superior education to the superior classes and to them only. We ask the friends of Indian Universities to favour us with a single example of the truth of their theory from, the instances which have already fallen within the scope of their experience. They have educated many children of wealthy men and have been the means of advancing very materially the worldly prospects of some of their pupils. But what contribution have these made to great work of regenerating their fellowmen? How have they begun to act upon the masses? Have any of them formed classes at, their own homes or elsewhere, for the instruction of their less fortunate or less wise countrymen? Or have they kept their knowledge to themselves, as a personal gift, not to be soiled by contact with the ignorant vulgar? Have they in any way shown, themselves anxious to advance the general interests and repay the philanthropy with patriotism? Upon what grounds is it asserted that the best way to advance the moral and intellectual welfare of the people is to raise the standard of instruction among the higher classes? A glorious arguments this for aristocracy, were it only tenable. To show the growth of the national happiness, it would only be necessary to refer to the number of pupils at the colleges and the lists of' academic degrees. Each wrangler would be accounted a national benefactor; and the existence of Deans and Proctors would be associated, like the game laws and the ten-pound franchise, with the best interests of the constitution."

"One of the most glaring tendencies of Government system of' high class education has been the virtual monopoly of all the higher offices under them by Brahmins. If the welfare of the Ryot is at heart, if it is the duty of Government to check a host of abuses, it behoves them to narrow this monopoly day by day so as to allow a sprinkling of the other castes, to get into the public services. Perhaps some might be inclined to say that it is not feasible in the present state of education. Our only reply is that if Government look a little less after higher education which is able to take care of itself and more towards the education of the masses there would be no difficulty in training up a body of men every way qualified and perhaps far better in morals and manners."

"My object in writing the present volume is not only to tell my Shudra brethren how they have been duped by the Brahmins, but also to open the eyes of Government to that pernicious system of high class education, which has hitherto been so persistently followed, and which statesmen like Sir George Campbell, the present Lieutenant Governor of Bengal, with broad universal sympathies, are finding to be highly mischievous and pernicious to the interests of Government. I sincerely hope that Government will ere long see the error of their ways, trust less to writers or men who look through highclass spectacles, and take the glory into their own hands of emancipating my Shudra brethren from the trammels of bondage which the Brahmins have woven around them like the coils of a serpent. It is no less the duty of each of my Shudra brethren as have received any education, to place before Government the true state of their fellowmen and endeavour to the best of their power to emancipate themselves from Brahmin thraldom. Let there be schools for the Shudras in every village; but away with all Brahmin school-masters! The Shudras are the life and sinews of the country, and it is to them alone, and not to the Brahmins, that Government must ever look to tide over their difficulties, financial

as well as political. If the hearts and minds of the Shudras are made happy and contents, the British Government need have no fear for their loyalty in the future."

Primary Education

There is little doubt that primary education among the masses in this presidency has been very much neglected. Although the number of primary schools now in existence is greater than those existing a few years ago, yet they are not commensurate to the requirements of the community. Government collects a special cess for educational purposes, and it is to be regretted that this fund is not spent for the purposes for which it is collected. Nearly nine-tenths of the villages in this presidency, or nearly 10 lakhs of children, it is said, are without any provision, whatever, for primary instruction. A good deal of their poverty, their want of self-reliance, their entire dependence upon the learned and intelligent classes, is attributable to this deplorable state of education among the peasantry.

Even in *towns* the Brahmins, the Purbhoos, the hereditary classes, who generally live by the occupation of pen, and the trading classes seek primary instruction. The cultivating and the other classes, as a rule, do not generally avail themselves of the same. A few of the latter class are found in primary and secondary schools, but owing to their poverty and other causes they do not continue long at school. As there are no special inducements for these to continue at school, they naturally leave off as soon as they find menial or other occupation. In villages also most of the cultivating classes hold aloof owing to extreme poverty, and also because they require their children to tend cattle and look after their fields. Besides an increase in the number of schools, special inducements in the shape of scholarships and half-yearly or annual prizes to encourage them to send their children to school and thus create in them a taste for learning, is most essential. I think primary education of the masses should be made compulsory up to a certain age, say at least 12 years. Muhammadans also hold aloof from these schools, as they somehow evince no liking for Marathi or English. There are a few Muhammadan primary schools where their own language is taught. The *Mahars, Mangs,* and other lower classes are practically excluded from all schools owing to caste prejudices, as they are not allowed to sit by the children of higher castes. Consequently special schools for these have been opened by Government. But these exist only in large towns. In the whole of Poona and for a population exceeding over 5000 people, there is only one school and in which the attendance is under 30 boys. This state of matters is not at all creditable to the educational authorities. Under the promise of the Queen's Proclamation I beg to urge that Mahars, Mangs, and other lower classes, where their number is large enough, should have separate schools for them, as they are not allowed to attend the other schools owing to caste prejudices.

In the present state of education, payment by results is not at all suitable for the promotion of education amongst a poor and ignorant people, as no taste has yet been created among them for education. I do not think any teacher would undertake to open schools on his own account among these people, as he would not be able to make a living by it. Government schools and special inducements, as noted above, are essential until such a taste is created among them.

With regard to the few Government primary schools that exist in the Presidency, I beg to observe that the primary education imparted in them is not at all placed on a satisfactory or sound basis. The system is imperfect in so far as it does not prove practical, and useful in the future career of the pupils. The system is capable of being

developed up to the requirement of the community if improvements that will result in its future usefulness be effected in it. Both the teaching machinery employed and the course in instruction now followed, require a thorough remodeling.

(a) The teachers now employed in the primary schools are almost all Brahmins; a few of them are from the normal, training college, the rest being all untrained men. Their salaries are very low, seldom exceeding Rs. 10, and their attainments also very meagre. But as a rule they are all unpractical men, and the boys who learn under them generally imbibe inactive habits and try to obtain service, to the avoidance of their hereditary or other hardy or independent professions. I think teachers for primary schools should be trained, as far as possible, out of the cultivating classes, who will be able to mix freely with them and understand their wants and wishes much better than a Brahmin teacher who generally, holds himself aloof under religious prejudices. These would moreover, exercise a more beneficial influence over the masses than teachers of other classes and who will not feel ashamed to hold the handle of a plough or the carpenter's adze when required, and who will be able to mix themselves readily with the lower orders of society. The course of training for them ought to include, besides the ordinary subjects, and elementary knowledge of agriculture and sanitation. The untrained teachers should, except when thoroughly efficient, be replaced by efficient trained teachers. To secure a better class of teachers and to improve their position, better salaries should be given. Their salaries should not be less than Rs. 12 and in larger villages should be at least Rs. 15 or 20. Associating them in the village polity as auditors of village accounts or registrars of deeds, or village postmasters or stamp vendors, would improve their status, and thus exert a beneficial influence over the people along whom they live. The school masters of village schools who pass a large number of boys should also get some special allowance other than their pay, as an encouragement to them.

(b) The course of instruction should consist of reading, writing Modi and Balbodh and accounts, and a rudimentary knowledge of, general history, general geography, and grammar, also an elementary knowledge of agriculture and a few lessons on moral duties and sanitation. The studies in the village schools might be fewer than those in larger villages and towns, but not the less practical. In connection with lessons in agriculture, a small model farm, where practical instruction to the pupils can be given, would be a decided advantage and, if really efficiently managed, would be productive of the greatest good to the country. The text-book[s] in use, both in the primary and Anglo-vernacular schools, require revision and recasting as much as they are not practical or progressive in their scope. Lessons on technical education and morality, sanitation and agriculture, and some useful arts, should be interspersed among them in progressive series. The fees in the primary schools should be as 1 to 2 from the children of cess-payers and non-cess payers.

(c) The supervising agency over these primary schools is also very defective and insufficient. The Deputy Inspector's visit once a [year?] can hardly be of any appreciable benefit. All these schools ought at least to be inspected quarterly if not oftener. I would also suggest the advisability of visiting these schools at other times and without any intimation being given. No reliance can be placed on the district or village officers owing to the multifarious duties devolving on them, as they seldom find time to visit them, and when they do, their examination is necessarily very superficial and imperfect. European Inspector's supervision is also occasionally very desirable, as it will tend to exercise a very efficient control over the teachers generally.

(d) The number of primary schools should be increased -

1. By utilising such of the indigenous schools as shall be or are conducted by trained and certificated teachers, by giving them liberal grants-in-aid.
2. By making over one half of the local cess fund for primary education alone.
3. By compelling, under a statutory enactment, municipalities to maintain all the primary schools within their respective limits.
4 By an adequate grant from the provincial or imperial funds.

Prizes and scholarships to pupils, and capitation or other allowances to the teachers, as an encouragement, will tend to render these schools more efficient.

The Municipalities in large towns should be asked to contribute whole share of the expenses incurred on primary schools within the municipal area. But in no case ought the management of the same to be entirely made over to them, They should be under the supervision of the Educational Department. The municipalities should also give grants-in-aid to such secondary and private English schools as shall be conducted according to the rules of the Educational Department, where their funds permit, such grants-in-aid being regulated by the number of boys passed every year. These contributions from municipal funds may be made compulsory by statutory enactment.

The administration of the funds for primary education should ordinarily be in the hands of the Director of Public Instruction.

But if educated and intelligent men are appointed on the local or district committees, these funds may be safely entrusted to them, under the guidance of the Collector, or the Director of Public Instruction. At present, the local boards consist of ignorant and uneducated men, such as Patels, Inamdars, Surdars, & C. who would not be capable of exercising any intelligent control over the funds.

Indigenous Schools

Indigenous schools exist a good deal in cities, towns and some large villages, especially where there is a Brahmin population. From the latest reports of Public Instruction in this presidency, it is found that there are l,049 indigenous schools with about 27,694 pupils in them. They are conducted on the old village system. The boys are generally taught the multiplication table by heart, a little Modi writing and reading, and, to recite a few religious pieces. The teachers, as a rule, are not capable of effecting any improvements, as they are not initiated in the art of teaching. The fees charged in these schools range from 2 to 8 annas. The teachers generally come from the dregs of Brahminical society. Their qualifications hardly go beyond reading and writing Marathi very indifferently, and casting accounts up to the rule of three or so. They set up as teachers as the last resource of getting a livelihood. Their failure or unfitness in other callings of life obliges them to open schools. No arrangements exist in the country to train up teachers for indigenous schools. The indigenous schools could not be turned to any good account, unless the present teachers are replaced by men from the training colleges and by those who pass the 6th standard in the vernaculars. The present teachers will willingly accept State aid but money thus spent will be thrown away. I do not know any instance in which a grant-in-aid is paid to such a school. If it is being paid anywhere, it must be in very rare cases. In my opinion no grants-in-aid should be paid to such schools unless the master is a certificated one. But if certificated or competent teachers be found, grant-in-aid should be given and will be productive of great good.

Higher Education

The cry over the whole country has been for some time past that Government have amply provided for higher education, whereas that of the masses has been neglected. To some extent this cry is justified, although the classes directly benefitted by the higher education may not readily admit it. But for all this no well-wisher of his country would desire that Government should, at the present time, withdraw its aid from higher education. All that they would wish is, that as one class of the body politic has been neglected, its advancement should form as anxious a concern as that of the other. Education in India is still in its infancy. Any withdrawal of State aid from higher education cannot but be injurious to the spread of education generally.

A taste for education among the higher and wealthy classes, such as the Brahmins and Purbhoos, especially those classes who live by the pen, has been created, and a gradual withdrawal of State aid may be possible so far as these classes are concerned; but in the middle and lower classes, among whom higher education has made no perceptible progress, such a withdrawal would be a great hardship. In the event of such withdrawal, boys will be obliged to have recourse to inefficient and sectarian schools much against their wish, and the cause of education cannot but suffer. Nor could any part of such education be entrusted to private agency. For a long time to come the entire educational machinery, both ministerial and executive, must be in the hands of Government. Both the higher and primary education require all the fostering care and attention which Government can bestow on it.

The withdrawal of Government from schools or colleges would not only tend to check the spread of education, but would seriously endanger that spirit of neutrality which has all along been the aim of Government to foster, owing to the different nationalities and religious creeds prevalent in India. This withdrawal may, to a certain extent, create a spirit of self-reliance for local purposes in the higher and wealthy classes, but the cause of education would be so far injured that the spirit of self-reliance would take years to remedy that evil. Educated men of ability, who do not succeed in getting into public service, may be induced to open schools for higher education on being assured of liberal grants-in-aid. But no one would be ready to do so on his own account as a means of gaining a livelihood, and it is doubtful whether such private efforts could be permanent or stable, nor would they succeed half so well in their results. Private schools such as those of Mr. Vishnu Shastree Chiploonkar and Mr. Bhavey, exist in Poona, and with adequate grants-in-aid may be rendered very efficient, but they can never supersede the necessity of the high school.

The Missionary schools, although some of them are very efficiently conducted, do not succeed half so well in their results, nor do they attract half the number of students which the high school[s] attract. The superiority of Government schools is mainly owing to the richly paid staff of teachers and professors which it is not possible for a private schools to maintain.

The character of instruction given in the Government higher schools, is not at all practical, or such as is required for the necessities of ordinary life. It is only good to turn out so many clerks and schoolmasters. The Matriculation examination unduly engrosses the attention of the teachers and pupils, and the course of studies prescribed has no practical element in it, so as to fit the pupil for his future career in independent life. Although the number of students presenting for the Entrance examination is not at all large when the diffusion of knowledge in the country is taken into consideration, it looks large when the requirements of Government service are concerned. Were the education universal and within easy reach of all, the number would have

been larger still, and it should be so, and I hope it will be so hereafter. The higher education should be so arranged as to be within easy reach of all, and the books on the subjects for the Matriculation examination should be published in the Government Gazette, as is done in Madras and Bengal. Such a course will encourage private studies and secure larger diffusion of knowledge in the country. It is a boon to the people that the Bombay University recognises private studies in the case of those presenting for the entrance examination. I hope, the University authorities will be pleased to extend the same boon to higher examinations. If private studies were recognized by the University in granting the degrees of B.A., M.A. &c., many young men will devote their time to private studies. Their doing so will still further tend to the diffusion of knowledge. It is found in many instances quite impossible to prosecute studies at the colleges for various reasons. If private studies be recognised by the University, much good will [be] effected to the country at large, and a good deal of the drain on the public purse on account of higher education will be lessened.

The system of Government scholarships, at present followed in the Government schools, is also defective, as much as it gives undue encouragement to those classes only, who have already acquired a taste for education to the detriment of the other classes. The system might, be so arranged that some of these scholarships should be awarded to such classes amongst whom education has made no progress.

The system of awarding them by competition, although abstractedly equitable, does not tend to the spread of education among other classes.

With regard to the question as to educated natives finding remunerative employments, it will be remembered that the educated natives who mostly belong to the Brahminical and other higher classes are mostly fond of service. But as the public service can afford no field for all the educated natives who come out from schools and colleges, and moreover the course of training they receive being not of a technical or practical nature, they find great difficulty in betaking themselves to other manual or remunerative employment. Hence the cry that the market is overstocked with educated natives who do not find any remunerative employment. It may, to a certain extent, be true that some of the professions are overstocked, but this does not show that there is no other remunerative employment to which they can betake themselves. The present number of educated men is very small in relation to the country at large, and we trust that the day may not be far distant when we shall have the present number multiplied a hundred-fold and all betaking themselves to useful and remunerative occupations and not be looking after service.

In conclusion, I beg to request the Education Commission to be kind enough to sanction measures for the spread of female primary education on a more liberal scale.

Poona,
19th October 1882.

Joteerao Govindrao Phooley,
Merchant and Cultivator and
Municipal Commissioner,
Peth Joona Ganja.

[Education Commission, Bombay, Vol II, Calcutta, 1884, pp. 140-145]

[1] This is a typographical error, the correct date should be 1851.

PRIMARY EDUCATION AND INDIGENOUS SCHOOLS

Justice M.G. Ranade

Now that, within a month or so, Dr. Hunter, the President, and the other members of the Bombay Committee of the Education Commission will hold their sittings, and examine the local witnesses in regard to the present state of public instruction in this Presidency, it is time that we should pass in review the various systems of elementary education which have been in operation in different parts of British India during the last 25 years, and, by contrasting their results, furnish the ground-work of fact on which the authorities, more directly concerned with the practical working of this Department, may be expected to proceed in its future reorganization consequent on the labours of the Education Commission. In the words of the Government of India's Resolution appointing this Commission, the main object of this inquiry is to ascertain "the present state of elementary education throughout the Empire, and the means by which this can everywhere be extended and improved." The other heads of inquiry occupy only a subordinate place, and it were much to be wished that these distracting topics had not been pressed upon the attention of the Commission, and the scope of the present inquiry had been limited to the one subject about which there is no difference of opinion, and which in consequence is in a condition to be profited by the deliberations of those who have been selected by Government for this great responsibility. The Missionary societies, with whom this agitation commenced four years ago with the formation of the Edinburgh and London General Councils on Education in India, had their own objects to promote in complicating the scope of the inquiry, and forcing the hands of Government to an abandonment of its advanced liberal attitude. It was at their suggestion that the cry against the higher secular, that is, not professedly religious, education was raised, and their spokesman, the Reverend James Johnstone, has been indefatigable in his efforts to secure the help of British public opinion to back up the missionary propaganda. The Government of India has, be it said to their credit, withstood these temptations placed in their way; yet the agitation in England has not wholly been without its reflex influence upon the policy of the Government as enunciated in this Resolution. For it has to some extent prejudged the results of the inquiry by laying down the position "that, owing to a variety of circumstances, more progress has been made upto the present time in high and middle class than in Primary Education." We shall show further on in the sequel that this assumption is not true, and should not have been made on the eve of an inquiry such as has been ordered by the present Resolution. This declaration of the Government of India, accompanied as it is with an expression of its wish that "the different branches of Public Instruction should move forward together, and with a more equal step than hitherto." - and the announcement made further on of its inability "to find funds sufficient to meet the full requirements of the country in the matter of Primary Education, "-and the suggestion that every available private agency should be called into action to assist the public funds in connection especially with high and middle education," on the ground that .. the resources of the state ought to be so applied as to assist those who cannot help themselves, and the richer classes of the people should gradually be induced to provide for their own education", -this declaration of policy in fact begs the whole question at issue, and leaves to the Commission but little scope for independent advice.

Lort Macaulay has in his essay on Warren Hastings satirized the action of the Court of Directors in England who, in their instructions to the Company's Servants in India, recommended them to govern the people "leniently" but ordered them at the same time to " send more money" to

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England. We are disappointed to see this inconsistency reproduced in this-Resolution of the Government of India in regard to primary instruction. The Education grant has been raised from time to time during the last 70 years. The charter of 1813 required the East India Company to sanction a grant of £10,000 a year for the encouragement of education. This grant was increased seven or eight-fold in 1833, and at the next renewal of the charter in 1853, the grant was again raised seven or eight-fold, at which figure it has remained unchanged, except with slight alterations, to the present date, although during the last 30 years the revenue of British India has been doubled by conquest, annexations, and additional taxation. In strict justice, the Government should have made up its mind to follow the example of the old East India Company by increasing its grant in proportion to the increase of revenue. A Government which can afford to spend 20 crore; on a useless frontier war, and deems it just to maintain a garrison at the cost of half the net revenue, and has to remit for Home Charges the other half, cannot fairly plead its inability to supplement the existing grant for education so as to raise it to its old proportion under the Company's rule. The whole question of the improvement and extension of Primary Education is one of ways and means rather than of policy, and we cannot but regret that, by its assumptions and limitations, Government has to a great extent given a wrong direction to the labours of the Commission, and forced upon it discussions of side issues which will only serve to thwart their deliberations upon the main problem. The Missionary blast has provoked a counter-blast from the leaders of Native opinion, and already His Highness the Maharaja of Travancore, Raja Sir T. Madhava Rava, Dewan C. Ranga Charlu, the Honorable Justice Muttuswamy Iyer, and the Honorable Kristodas Pal have entered the lists against the Reverend James Johnstone, Revd. Mackichan, and the great English authorities Lord Hallifax, the Duke of Argyll, and others who have been induced to countenance the Missionary cry. This conflict of views will, as a matter of course, infect the members of the Commission. Lord Ripon also has unconsciously played into the hands of the missionaries when, in his Convocation speech, he committed himself to an expression of his individual view that mere secular, that is, not professedly religious, education must fail in effecting any good. The Brahma Samaja people took up the cry and exaggerated it. The Roman Catholic bishops in Southern India have, with a wiser instinct, preferred the present neutral policy of Government to what they reasonably apprehend will be substituted in its place, if the Protestant Missionaries succeed in pulling down the state establishment, and setting up in their place their own dogmatic schools. This apple of discord has only embittered the strife, and it does not require a prophet to foretell that the deliberations will end in a Babel of views, where agnostic professors and Missionary fanatics, Natives and Europeans. Hindus and Mahomedans, the advocates of Primary and Secondary education, and of State Schools against Private Schools, will only agree to differ. It is this circumstance which heightens our regret that such a noble opportunity of useful and practical work should have been spoiled by this unnecessary intrusion of foreign matters, and the rousing of irreconcilable prejudices. This confusion would have been avoided if Government had, following former precedents, come forward with a determination to supplement the existing grant with a proportionate increase, and called upon the Commissioners to report after inquiry what practical steps should be taken to utilise this grant to the best advantage of Primary Education.

In practical life, however, it is of no use to regret what is past and irrevocable. We must reconcile ourselves to the condition of the situation, and accept under protest the limitations which the Government has been pleased to fix on its own resources in this respect. The practical question we have to face, and which includes all

other questions, may be thus briefly stated; -" How, with the existing resources, public and private, we can so distribute the funds at our disposal as to secure the extension and improvement of Primary schools, without unduly prejudicing the interests of higher education."

It is necessary in this connection to give a brief outline of the leading facts connected with the working of the educational department. The funds, private and public, devoted to the actual work of instruction in the ten administrative divisions of British India, may be roughly stated to be one and a quarter crore of rupees. Of this sum, about 11 lacks are spent on University education, i.e., the Arts Colleges, European and Oriental; 40 lacks are spent on high and middle class schools; and 73 lacks ate spent on Primary education. These figures only represent the actual cost of instruction in the Institutions directly managed by Government or aided by its funds. The charges for direction and inspection, as also the cost of technical schools, and miscellaneous expenditure, do not enter into this total. The charges of management and inspection also vary from 10 to IS per cent in the different provinces. The total sum disbursed for educational purposes thus exceeds a crore and a half of rupees. Of the sum of $1\frac{1}{4}$ crore of Rupees spent on instruction nearly 60 Lacks of rupees, placed at the disposal of the Educational Department, represent the expenditure of Public funds on the three classes of institutions, Arts Colleges, High and middle class institutions, and Primary Schools, and nearly 64 Lacks represent the contributions of Private funds to the same purpose; so that Government already secures for every rupee spent out of public funds more than a, rupee's contribution from private funds. Of the net expenditure of 60 Lacks from public funds, $6\frac{2}{3}$ Lacks are spent upon the Arts Colleges. $16\frac{1}{2}$ Lacks are spent upon high and middle class schools, and $37\frac{1}{2}$ Jacks upon Primary schools. Of private expenditure, $4\frac{1}{3}$ Jacks are spent on the colleges, $23\frac{2}{3}$ lacks are spent on high and middle class schools, and $35\frac{2}{3}$ lacks on Primary schools. The expenditure on Primary. Education is thus more than 150 per cent greater than on collegiate, high, and middle class institutions together, whether we take the gross expenditure collectively, or separate the public and private funds, and take their proportions distributively. In this connection we do not separate the expenditure on Government Institutions proper, as distinguished from aided private schools and colleges. The following statement will show the separate expenditure on Government, aided, and unaided institutions throughout the ten administrative divisions of British India, as also the different sources from which the funds spent are provided.

The figures for thousands are omitted.

	Total	Provincial revenue	Local	Municipal Grants	Endow-ments	Sub-scription	Fees	Other sources
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Government Institutions	5635	2213	1709	258	152	29	1034	204
Aided Institutions	5829	1529	180	79	192	597	2096	1156
Unaided Institu-tions	942	0	42	0	47	152	368	313
	12,406	3,742	1,931	337	391	778	3,498	1,673

It will be seen from this statement that, out of an actual expenditure of a quarter and a crore of rupees, the Provincial revenues, representing the Imperial grant, amount to less than 30 per cent of the total expenditure, while the remaining 70 per cent are made up of private voluntary contributions, and local taxation. The voluntary contributions, consisting of fees endowments, subscriptions, and other sources, represent more than 50 per cent of the total expenditure, while the local and Municipal taxation comes to about 20 per cent of the whole expenditure. Confining ourselves to the expenditure on Government Institutions of all grades, we find that out of a total expenditure, ranging from 56 to 6o lacks, 35 per cent, or 20 lacks, come from local taxation, 13 lacks or 23 per cent from voluntary contributions, chiefly fees and endowments, and about 43 per cent represents the expenditure from provincial funds. In other words, whether we take the whole expenditure, or only that portion of it which represents the cost of Government Institutions, the contribution from provincial funds is a little more or less than $\frac{1}{3}$ of the entire expenditure. For every rupee paid out of Imperial funds, the Government thus succeeds in securing two rupees of private contributions.

As regards the distribution of the expenditure on the different classes of Institutions, we have already stated above that, as far as Government Institutions are concerned, about 11 per cent of the total expenditure of 60 lacks represents the charge of the collegiate Institutions, about 37 per cent is the charge for high and middle class schools, and 56 per cent is the charge for Primary schools. Taking the whole expenditure upon Government, aided, and unaided schools to be one and a quarter crore, the percentages are 9 per cent for colleges, 32 per cent for high and middle class schools, and 59 per cent on primary schools. In either view it can not be said with any justice that the so called higher education absorbs more than its fair proportion of public funds. Of the aided and unaided Institutions maintained at a cost of 64 lacks of rupees, the colleges absorb less than 5 lacks, the high and middle class schools about 23 lacks, and the Primary Schools about 40 lacks. The sum granted in aid of private institutions out of public funds comes to about 18 lacks of rupees, a considerable portion of which represents the charge of European and Eurasian education.

These figures, representing the expenditure on various classes of schools, must be studied along with the statistics of the number of schools and scholars in the different classes of Institutions. The following statement will furnish these figures for the latest year available.

	Government		Aided		Unaided	
	Institutions	Scholars	Institutions	Scholars	Institutions	Scholars
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Arts Colleges	35	2547	23	1156	9	412
High & Middle class Schools	1378	37202	1900	46311	363	14719
Primary Schools	14160	503604	46355	733777	13403	208249
	15,573	543,353	48,278	781,244	13,775	223,380

The totals given above are much smaller than those mentioned by the Reverend James Johnstone in his address before the East India Association. According to his authority, there were 678,000 pupils attending Government Institutions, $8\frac{1}{2}$ lacks attending aided Institutions, and about three lacks attending unaided Institutions, making a total of 18 lacks and more, and exceeding the figure given above by nearly 3 lacks. Whether we accept the smaller or the larger estimate, it is clear that the progress made in the extension of Primary education since 1854 transcends beyond all measure the much slower growth of collegiate and secondary instruction. To quote from Mr. Howell's note, it appears that in 1854 there were in all the Government Institutions 40,000 pupils receiving instruction, and the total expenditure incurred by Government was something less than 10 lacks. At that time there were 14 colleges in existence, and of the remaining institutions a very large proportion of scholars was found in the English Shoots; for primary education, as understood at present, was not then undertaken by Government except to a small extent in the North Western Provinces and in Bombay. Lord Stanley, in his despatch of 1859, attempted a review of the educational changes inaugurated after the despatch of 1854. In para 31 of that despatch, it stated that in those early years 1854-59) "the Government Colleges were attended by a total number of 2,873 students, the high Schools were attended by 9,000 students, and the Inferior or Primary Schools were attended by about 40,000 students". The corresponding numbers given for 1881 show that in the 35 Government Colleges there were only 2,547 students, while against 40,000 scholars in Primary schools there are now no less than $6\frac{1}{2}$ lacks of pupils in Government Institutions. The numbers attending the zillah schools have increased from 9,000 to 37,000 so that while the expenditure on education by Government has been raised from 10 lacks to 75 lacks, that is nearly eightfold, the numbers attending colleges show no increase, while the students attending the secondary schools have multiplied four-fold and those attending Primary schools have multiplied sixteen-fold. If we include the schools aided by public funds in the number, we have 4,000 college students, 83,000 students receiving secondary instruction, and 17 lacks receiving primary instruction. In other words, while the students attending colleges have increased 50 per cent only, those attending high and middle schools have increased 400 percent, while the Primary scholars have increased 4,000 percent. These figures, compiled from official returns, cannot but fail to show beyond all doubt that the higher departments of education have not, as stated in the Resolution, advanced disproportionately to the injury of primary education. The lion's share of the additional funds placed at the disposal of the Educational Departments bas been appropriated strictly, and to some extent even beyond the requirements of the Despatch, to the spread and improvement of Primary education. If further progress in the same direction is contemplated, Government must do what it did thrice before increase its grant from Imperial funds. Even on the grants-in-aid principle, it is clear that the sums raised by the people by compulsory and voluntary efforts exceed the sum contributed by Government out of Imperial funds. Taking Government and aided schools together, we find that while Government contributes only $37\frac{1}{2}$ lacks from Provincial funds, the amount of fees, endowments, and subscriptions, representing voluntary contributions, comes to about 40 lacks, while in addition the people raise by compulsory taxation 22 lacks. This difference between the popular and Government contributions exceeds 25 lacks, which sum the Government is bound to make good if it is anxious to carry out the terms of the Despatch in the spirit as well as in the letter.

The summary furnished above of the principal statistics of education throughout British India will prepare the reader to follow us in the detail

account which we shall now proceed to give of the development of public instruction in this Presidency. During the first twenty years after the conquest of the Deccan, very little help was extended directly by Government, except that it maintained the Sanscrit college in Poona, from the Daxina endowment of the Peshwas, and the Elphinstone Institution with its branches in Bombay. It was in 1840 that, for the first time, the work of public instruction was deemed to be of sufficient importance to be placed under the charge of a Special Board. At that time there were two collegiate Institutions, the Elphinstone Institution and the Poona Sanscrit College, three English Schools corresponding to our present High and Middle Class Institutions, and 92 vernacular schools. The attendance in all these schools was less than 6,000 boys. When the Board of Education was organized, Government sanctioned an annual grant of $1\frac{1}{4}$ lack of rupees for general education, and during the 15 years of the Boards' management the progress made in the spread of education will be seen from the fact that, in 1854-55 there were as before two colleges, the one in Poona and the other in Bombay, costing in all Rs. 90,000 a year, 11 English schools costing Rs. 24,000 a year, and 240 vernacular Schools, attended by about 19,000 scholars, and representing a cost of 54,000 rupees a year. The proceeds of fees reached the sum of 28,500 rupees, of which sum nearly $\frac{3}{4}$ were contributed by the colleges and high schools, and 8,000 rupees by the vernacular schools. About the close of 1854, and in the early part of 1855, the Board of Education made way for the Director of Public Instruction, and in Mr. Howard's first report of his administration we find that the Departmental charges for general instruction reached a total of Rs. 175,000 of which Rs. 62,000 were appropriated to the two Arts Colleges, about 26,000 Rupees to the 15 English schools, and about 87,000 Rupees represented the cost of the 322 inferior, that is vernacular schools, and the attendance in all these institutions slightly exceeded 25,000 scholars; so that between 1840 and 1856 the colleges did not increase in numbers, and their cost to Government did not also increase. The English schools had increased from 3 to 15, and the Vernacular Schools from 92 to 322, and the scholars attending these schools had increased from 5,000 to about 25,000. This was the condition of the Department in the first year after the promulgation of the Despatch. The way in which the Department has grown on all sides since that time is familiar to every educationist in this Presidency, and it is needless to enter into details regarding them. The following statement, showing the condition of Primary, Secondary and Higher education, the number of schools and scholars, and the charges incurred from public and private funds in respect of these three grades of Institutions, will present at one view all the more salient features of this growth from 1840 to 1880.

Years	Government Primary		High And Middle Class		Arts Colleges	
	Schools	Scholars	Schools	Scholars	Schools	Scholars
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1840	92	5000	3	206	2	650*
1855-56	322	23000	15	1446	2	1400*
1870-71	2223	119803	146	18033	3	303
1880-81	4225	253842	159	11149	3	332

* This includes the school department in Elphinstone institution.

Years	Charges of Primary Schools		Charges of Secondary Schools		Charges of Colleges	
	Public	Private	Public	Private	Public	Private
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1840						
1855-56	65,000	11,000	24,000	6,000	69,000	15,000
1870-71	186,956	487,105	153,345	232,250	89,353	37,150
1880-81	262,819	819,542	142,452	226,924	80,164	51,627

From this statement it will be seen that, so far from any undue increase having taken place in the institutions for higher education in this Presidency, the Government Arts Colleges have stood at their old numbers, and the expenditure incurred on account of them has doubled over what it was 25 years ago, when they were first properly organized, while the fees and endowments have been trebled. The high and middle class schools have increased considerably in numbers, but still there are not as many first class high Schools as there are districts in the Presidency, while in the number of Primary schools and scholars the increase has been tenfold, i.e., from 332 schools to 4,225, and from 23,000 scholars to 253,842 scholars. As regards the relative cost of superior and inferior instruction, it has been ascertained that the total charge of collegiate institutions in this Presidency does not exceed Rs. 131,791, of which sum about Rupees 80,164 come from the Provincial Funds. As regards the secondary Middle class and high schools, the total charge is nearly $3\frac{3}{4}$ lacks of Rupees, of which nearly $1\frac{1}{2}$ lacks only come from Provincial Funds. Taking both these institutions together, it appears that, out of nearly 5 lacks spent from all sources on higher education in this Presidency, over $2\frac{3}{4}$ lacks were derived from endowments, fees, and Municipal Funds while the Provincial Fund contributed nearly $2\frac{1}{4}$ lacs, and this contribution has been yearly decreasing. In regard to Primary schools, the Provincial Funds contribute a little over $2\frac{1}{2}$ lacks, out of a total expenditure of about 11 lacks, and this Provincial contribution and total expenditure show an yearly increase. If the contribution from Provincial funds towards Primary education appears relatively to be less than that made to higher education, it is to be remembered that nearly seven lacks of Rupees of the local cess are devoted to this purpose exclusively. Altogether the total sum spent on Primary education exceeds by a considerable margin the Provincial and total expenditure on higher education. We have thus shown that what is true of the whole of British India is none the less true of this Presidency, namely that Primary education has received proportionately greater stimulus from the heads of the various departments than either the secondary or collegiate education, and that the position laid down in the Government of India's Resolution in this matter, as regards the unequal advance of higher and lower education, is not correct. We are free to admit that Government is justified in seeking to utilize its funds to the best public advantage, but there is really no reason to doubt, that its officers have faithfully carried out the instructions of the Despatch, and if Government will only provide an additional grant for Primary education in the way we have suggested above, nothing can be more in keeping with the lines hitherto followed than a further development of popular instruction in this Presidency as well as in other parts of India.

Though we have found it necessary thus far to vindicate the action of the Educational authorities in this Presidency from the implied censure passed upon them by the Government, yet we feel no doubt that Bombay has not kept pace with Bengal and other parts of India in promoting the cause of Primary education by taking advantage of the indigenous machinery available at its hands in the same way as has been successfully accomplished elsewhere. This subject of indigenous education may safely be said to be the

weakest point in the policy adopted by the officers charged with the spread of education in this Presidency. While everywhere else in India the most strenuous efforts have been made to secure the cooperation of the people in this connection, the ruling principle with the Bombay officers has been to cry down the indigenous systems, and insist upon the claim of the Department to have an exclusive monopoly of Primary Education throughout the Presidency. The result is that Bombay stands alone in having the largest number of Government Primary schools, and the smallest number of primary aided schools. This difference is not one of names, but represents a waste of energy and of money which, if it could be saved by anything that we can here urge, would be a most important departure from the previous traditions, and would further remove to a great extent the difficulty of funds, which is at present pleaded as a reason why Primary Education is comparatively at a stand-still. While in Bengal out of $12\frac{1}{2}$ lacks of rupees spent from Provincial Funds more than 8 lacks are devoted to the subsidizing and support of aided schools, in Bombay out of a total expenditure of nearly 6 lacks from the same source, less than a lack is devoted to aided institutions. In Madras the proportions are more nearly equal. In fact there is not another Province in British India where the disproportion between the expenditure on aided and Government institutions is so great as in this Presidency. As a consequence we find, that during the last 10 year, while the number of aided Primary schools in Bengal has increased from 3,839 to 39,665, and in Madras they have increased from nearly 3,000 to 4,000, here in Bombay the aided Primary schools, excluding a few Missionary institutions and a still smaller number of indigenous schools, are conspicuous by their absence. All our schools are Government Departmental schools as far as they are recognized by the Department. Corresponding with the growth of the schools has been the increase of the number of scholars. The scholars in this Presidency attending Primary schools have increased only 75 per cent in 10 years, while in Bengal they have increased 600 per cent, and in Madras 1,600 per cent. The expenditure in Bengal is about twice that of Bombay, while the expenditure in the Madras Presidency is the same as that in Bombay. Compared by large results it follows from these figures that our expenditure has not been equally fruitful as in the other Presidencies. This subject of indigenous schools must be approached in another spirit than that which has recommended itself hitherto to the Bombay authorities. A few statistics of indigenous institutions will illustrate our position better and suggest the line of reform in which we wish the Department to move in the future.

The numbers of pupils attending the government and indigenous schools in nine Districts of this Presidency in 1841 and 1871 will be seen from the following table.

Name of the District	Year	Number of pupils in Government Schools	Number of pupils in Indigenous Schools	Total	Year	Number of pupils in Government Schools	Number of pupils in Indigenous Schools	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ahmednagar and Nasik Khandesh	1841	1375	7,279	8,654	1871	42,863	4,583	47,446
Surat		630	3,002	3,632		9,474	1,525	10,999
Kheda		466	3,460	3,926		12,102	2,126	14,228
Ahmedabad		413	6,674	7,087		9,456	5,890	15,346
Ratnagiri		782	2,197	2,979		6,645	3,732	10,377
Tanna		661	3,821	4,482	Tanna & Colaba	10,334	2,104	12,438
Poona		2460	3,195	5,655		8,596	3,273	11,869
Total		6,787	29,628	36,415		99,470	23,233	1,22,703

This statement makes it evident that, 40 years ago, there were more than four times as many pupils receiving instruction in indigenous schools as in government schools, and that after 30 years' Departmental work the Government schools contain nearly $4\frac{1}{2}$ times more pupils than those in indigenous schools. The absolute number attending indigenous schools in the Poona and Ratnagiri collectorates shows a positive, though small, increase in 30 years, while the total fall off in the attendance of all indigenous schools is less than 20 per cent. This is a very striking testimony to the great hold which the indigenous system has upon the popular mind. Entering more into details, we find from the appendices attached to Mr. Howard's first report, that in 1855-56, there were in the nine Districts of the Deccan Division, 1194 indigenous schools attended by 25,149 scholars, who paid in fees about Rs. 50,000 to their masters. In the Gujerath Division, there were in the same year 749 schools attended by 34,411 scholars in that year. The fees in these indigenous schools were, and still as a rule continue to be, more than twice as heavy as those charged in Government schools; the average number of scholars in these schools was 20 in the Deccan, and 50 in the Gujerath Districts, and the masters earned about Rs. 40 a year in the Deccan and 80 to 90 Rs. in Gujerath. In this same year, Dr. Peet reported that there were 428 schools in the Tanna and Ratnagiri collectorates. In the Belgaum District in a census taken about the same time, it was found by Captain Lester that, against 31 Government schools attended by 1893 boys, there were 227 indigenous schools attended by 4470 boys. The latest figures available for indigenous schools are those for 18757-76, from which we find that, in that year just preceding the famine, there were in all 2714 indigenous schools attended by 61,448 scholars. In the Ratnagiri District the numbers of indigenous schools and scholars actually exceeded the corresponding figure of Government institutions, and in Dharwar and Belgaum Districts the indigenous schools were nearly equal in numbers with the Government schools, while in Sind, the indigenous schools still exceed those supported by Government. Later information collected from official sources warrants the supposition that the existing number of indigenous schools exceeds considerably the figures given above for 1875-76, and is nearly 4,000, which is the latest figure for Government schools, and that the scholars attending them are nearly a lack in all. These facts and figures are proof of a wonderful vitality in the indigenous system of education, for without some such natural adaptation to the wants and inclinations of the people it can not be lightly supposed that these schools, competing as they do with the comparatively free Government Schools, without any help from the State, and without any prestige or organization, could have maintained their ground so long, and so well. Even now the city of Poona is said to find work for about 100 schools of this sort, and Sholapoor supports 38, while the island of Bombay has more than 100. It is all very well for official Inspectors to cry down the instruction and discipline in these schools, but, those who rate them so low have yet to explain the anomaly of their continued and popular existence against such odds. We believe and we make this declaration after wading through an immense mass of official reports from the days of the Board to our own times, we believe that these schools have suffered from the same sort of prejudice which, in a certain class of minds, is begotten of official pride and prejudice against every indigenous effort. There are some minds which can not be made to believe that qualified efficiency is possible outside the sacred fringe of the official hierarchy. It is the good fortune of Bengal and Madras that this prejudice has taken no deep root there, and that under strong administrations, Inspectors and Directors of all grades have been obliged to accommodate themselves to the ascertained wishes of the people. In Bengal, the *Guru Mahashaya*, corresponding to our *Pantoji*, has secured a recognition for himself, and the Department there has found that, by seeking

the cooperation of these almost hereditary teachers, they have been able to utilize their funds to the greatest practical advantage with the smallest expenditure. In Bengal, a grant of five lacs has been found sufficient to support, with their own independent receipts, 40,000 School Masters. The grant is spent partly by way of stipends or subsidies to the salaries paid to the masters, but chiefly by means of payments for results, tested at the great central examinations for scholarships. In Burma the Buddhist priests and the monks with their monasteries, are utilized in the same manner for state purposes. In Madras, the Pyal schools come under the same category, and these are visited and encouraged by a class of officials who are there called inspecting school masters. We fail to see why some such beginning should not be made in our own Presidency. It needs no argument to show that a vernacular school master, paid wholly by the state, and prevented from taking any fees in money or in kind from his pupils or from his pupils' parents, must cost three times as much at the least as a man who is free to make his living on the appreciation of his work by those who send their children to learn under him. In the old native tradition a teacher is expected to teach for the love of the thing, and for the honor conferred by it, as much as a preacher or a Doctor or a Lawyer, and the payments made to them were honorariums given more from a sense of duty than by way of hire. A small subsidy paid to such a man to guarantee his position against ordinary risks would be of permanent benefit to him without destroying his independence. Now that the Government is so anxious without increasing its grant to increase the funds devoted to Primary education, we cannot conceive any more advantageous method of attaining this end in the Presidency, than of adopting the Bengal plan of dealing with these indigenous schools. We know it has been said time out of mind, and will be said again, that these indigenous masters know and can teach nothing, they are lazy and careless and irregular, they enforce no discipline, and do not understand the right method of teaching. To all these objections we have only one answer to give, namely, that the grown-up men of this generation have all been taught in their young days by indigenous school masters, and every one of them cherishes or ought to cherish the wholesome discipline that he had to undergo. As regards the choice of subjects, we believe official authorities make too much point of the crammed book-knowledge of the elements of grammar, geography, and history which are taught in Government schools. These subjects are learnt to be forgotten by the vast majority of boys, while others which are of much more importance in practical life are little attended to. This reproach has been to some extent removed of late years by a change in the standards, but even now the difference is admitted to be considerably in favour of indigenous schools. No body can be better judges of the wants of the children put to school than their parents, and as long as parents persist in adhering to the indigenous system, it is useless to speak about a defect here and a defect there, which can be only remedied by actively interesting the official Inspectors in this too long neglected part of their duty.

Besides, it should be remembered that, as things at present stand, nearly 85 percent of the Brahmin and other high caste boys receive the rudiments of education in the existing schools. The class that has now to be reached is the agricultural community forming the back-bone of the population. They require first to be better fed and clothed and housed before they can be asked with advantage to educate themselves. A knowledge of the rudiments of reading and writing sufficient for their daily life is all that can be expected at present, and this knowledge the indigenous system of schools provides satisfactorily and cheaply. A few picked boys might be helped by free scholarships to pass through the higher grades of instruction, but for the majority the simplest rudiments will suffice for many generations to come.

The financial argument, however, appears to us to be the strongest in this connection. There are about 26,652 towns and villages in this Presidency and each zilla has about on an average 1100 villages. At present there are on an average about 130 schools in each zilla, that is to say, there is a school in one out of nine villages. The remaining eight villages are yet to be provided with schools. From the census returns for 1872, we find that, out of a total of 26,652 towns and villages in this Presidency, about 9,813 villages have a population of less than 200 inhabitants, about 8,913 villages have a population between 200 and 500 souls, and about 4774 villages have a population between 500 and 1,000 souls, so that out of 26,652, 23,500 villages or nearly 85 percent have less than 1,000 inhabitants. The remaining 3,000 with a population exceeding 1,000 souls are under the present system provided with schools. The extension of popular education, therefore, means practically the establishment of vernacular schools in villages whose population is below 1,000. Of these villages for our present purposes we may safely exclude for the present nearly 10,000 with a population of less than 200 souls; for these villages cannot be expected to secure a sufficient number of children of school-going age to provide from fees adequate remuneration to a private school master. In a population of less than 200 souls, there will be hardly 15 boys of school-going age, and even if the parents of these boys paid fees at the usual rates which prevail in private schools, the amount will be insufficient to encourage private adventure in this direction. Villages with a population ranging from 200 to 1,000, number about 14,000, and it is to this class of villages that the work of extending primary education must at present be confined. In other words we have to provide for about 14,000 more schools in this Presidency. The school-going boys in the Presidency being roughly $\frac{1}{2}$ of the male population number about 11 lacs, out of whom the present Government and aided schools provide for $2\frac{1}{2}$ lacs. The indigenous schools provide for a little less than a lac. These deductions leave about 75 percent of the children of school-going age, numbering between 7 and 8 lacs, and inhabiting about 23),000 villages, as the numbers for which provision has yet to be made. On the system which at present prevails in Bombay, 14,000 additional schools will cost 14 lacs of rupees at the least, allowing $8\frac{1}{2}$ Rs. a month for each school. On the system we advocate, and the success of which has been so satisfactorily established by the experience of Bengal, we feel confident that with an expenditure of four lacs of rupees, every village, with a population exceeding 200 souls, can be provided with a school. We should first incorporate the existing indigenous schools by extending a small capitation grant for every boy in regular attendance, and an additional grant on the payment by results system for every boy whom these schools send up for the free scholarship examinations. We should in the next place encourage the establishment of more private schools, either by the class from whom indigenous schoolmasters come, or from certificated teachers who should be licensed to open schools on their own account, and make their own arrangements for receiving payments in kind or money from the villagers, the amount so derived being subsidized by a state gratuity, ranging from 2 to 5 rupees a month, according to the numbers attending the school, and its results at the free scholarship examinations. Hundreds of trained and certificated young men who now complain of a want of occupation will volunteer to devote themselves to the work of instruction on these terms. These schools will, it must be allowed, not admit of inspection and examinations by the present establishment. It is our firm impression, however, that it would be labour wasted to apply to these schools the standard examination system at present followed. The time spent by the Deputy Inspectors in attaining an impossible accuracy in the fixing of marks for each subject, in the case of each individual boy examined, is needlessly wasted, and might be

better utilized in examining the pick of the boys from these schools for scholarships to be held at the central Talooka or Town school.

These scholarship examinations will furnish a self-acting check upon the efficiency of these schools and will stimulate the efforts of private teachers to excel each other in the same way that the entrance examination of the University stimulates the efforts of the high schools all over the country. If additional establishments were wanted to help the Deputy Inspectors, we should advocate the adoption of the Madras plan by which the services of inspecting school masters are utilized to visit and encourage the indigenous private schools within their circle. Even at present, we find that the proportion of so-called untrained to trained masters is as 1268 to 1912, the untrained being in the majority. In the Poona and Sholapoor Districts, for which we have obtained detailed figures, we find that out of a total of 634 masters, only 161 are trained. Of the whole number of 634 masters, 347 or more than 50 percent draw less salaries than 8 rupees per month, so that practically the present system does not depart as widely from the one we advocate as those, who are not conversant with its details, are prone to imagine. As the average income of indigenous school-masters varies from 40 to 8o Rupees per annum, and as the fees levied in these Schools are generally twice as heavy as those in Government schools, we cannot be far wrong in estimating that, with an average expenditure of 30 Rs all round for each school, a subsidy of four lacs will suffice to secure the foundation of 14,000 additional schools in this Presidency. In Bengal the sum of 5 lacs is found sufficient as a grant in aid for 40,000 schools. The same grant ought to be, therefore, able to suffice for the establishment of $\frac{1}{3}$ that number of schools in this Presidency. This is our solution of the main problem proposed by the Government of India for the deliberation of the Education Commission, and we commend it to the attention of its members, as its practical success is guaranteed by the experience of Bengal. It ensures a broad foundation for the healthy and systematic development of public instruction, it conserves and directs national energies and economises state expenditure without involving any sacrifice of the help at present extended to higher education.

The last point with which we shall conclude these observations relates to the question of the ways and means by which additional funds can be secured for extending Primary Education on the principles laid down above. We think we have made out a fair case to justify the Commission in urging upon the Government of India the necessity under present circumstances of increasing the Provincial grant by Rs. 2,500,000 at the least, so as to make it up to one crore on condition that this increase should be devoted to Primary Education exclusively. Such a concession would be in keeping with the spirit of the Despatch and the grant in aid rules; for, as we have already shown, the Government expenditure on the three grades of educational institutions comes to about 50 lacks, while the compulsory and voluntary payments from other sources exceed 60 lacks. In case, however, Government adheres to its declared inability to allot additional funds for this purpose, it becomes necessary to inquire how the four or five lacks required for the establishment of Primary Schools in every village of this Presidency with a population exceeding 200 souls can be raised. There are several ways by which these additional funds can be secured. The most eligible that occurs to us is the allotment of $\frac{1}{2}$ in place of the $\frac{1}{3}$ of the one anna local cess now made over to the Educational Department for Primary schools. The proceeds of the $\frac{1}{3}$share amount to about $7\frac{1}{2}$ lacks, and if the payment was increased to 50 percent of the local cess, the yield would be 11 lacks, or nearly $3\frac{1}{2}$ lacks more than the present amount. When the Local Funds were first started,

the extension of education was;, equally with public works of local utility, held out as an inducement to the people to contribute. As a matter of fact, the funds set apart for public works are to a considerable extent directed to other purposes, especially for the relief of many burdens which properly fall upon Imperial funds. The $3\frac{1}{2}$ lacks so obtained might be supplemented by increasing the Municipal grants in the large towns. The total expenditure on Education from Municipal funds at present comes to about Rs. 80,000, of which about Rs. 44,000 appear to be under the control of the Education Department. The Police contribution from Municipal funds exceeds one lack of rupees. As under the new Resolution of the Government of India, the Municipalities will be relieved of this Police burden, it will be fair to require these Municipal towns to raise their contribution by 50,000 rupees, so as to bring the Municipal grant for educational purposes to nearly one lack of Rupees. At present it cannot be denied that the town populations derive a larger advantage from the expenditure of the Educational Department than the rural villages; 179 towns with a population of 28 lacks have at present 756 schools attended by 81,000 scholars, while 26,473 villages, with a population of 135 lacks, have 2970 schools attended by 145,000 scholars. This disproportion ought in all fairness to be corrected to some extent under the new arrangement. By thus increasing the proportion of local cess appropriations and the Municipal grants, we shall secure the necessary additional funds required for the extension of Primary education in the rural districts.

As some objection might be raised by the District officers to the larger appropriation proposed by us, it will be necessary to suggest other methods for attaining the same end. In this view it must be borne in mind that the Local Funds in the hands of the Department have a large balance to their credit as yet unappropriated. In March 1881, this balance was nearly $5\frac{1}{2}$ lacks. It was considerably larger in the years preceding the famine. Taking it at the figure shown in the accounts of 1880-81 we do not see any reason why this balance should be allowed to lie idle for years together. It might be as well invested in Government securities, either the whole of it, or a considerable portion of it. By this appropriation a permanent fund of Rs. 20,000 will be secured by way of interest from year to year without affecting the principal. Besides this local fund balance, we find from the accounts now before us that the Department actually effects a very large saving from the Budget allowance, which amounted in 1878-79 to Rs. 110,000. In 1879-80 the saving from Provincial Funds was Rs. 73,000, and in 1880-81 the amount again exceeded one lack of Rupees. We might safely estimate, therefore, that the annual savings from Provincial allotments exceed Rs. 75,000 a year. The local fund allotments show also considerable savings. The average for three years exceeds Rs. 50,000. These savings, together with the interest on the unexpended balance, will amount to Rs. 150,000 which are ready to hand for the spread of Primary education. The Provincial and local fund allotments are no doubt appropriated to definite purposes, and cannot be diverted to other ends, but this technical difficulty can be got over by inducing the Government to sanction a larger nominal allotment, which will permit these annual savings to be devoted to the establishment of Primary schools. Besides this Rs. 150,000, we think it is possible to raise the fees in all the high and middle class schools. We have satisfied ourselves on this point by a reference to the authorities in charge of colleges and high schools. The fees paid by the students in the Poona College for instance do not exceed Rs. 5 a month, while in the local high school they range from $1\frac{1}{2}$ to 3 rupees, and in the Elphinstone high school, they are as high as 5 Rs. The yield of fees from colleges, high schools and middle class schools at present is Rs. 180,000 and this can safely be raised to Rs. 225,000. There can be no injustice in a moderate

increase of these fees, especially as the interests of poor students will be provided for by increasing the percentage of free scholars from 5 to 15 per cent, This increase of fees, if judiciously managed, will secure half a lac of rupees. At present the Provincial funds pay Rs. 222,616 lacks out of a total expenditure of Rs. 501,167 on arts colleges and high schools, while on Primary schools an equal expenditure from Provincial funds is supplemented by $8\frac{1}{2}$ lacs of expenditure from other sources. By gradually raising the fees this disproportion will, to a certain extent, be remedied, and it will set free at least half a lack of rupees from higher instruction to be devoted to the extension of Primary schools. Another half a lack will, be obtained from an increase of the municipal grants. We have thus sketched out a plan by which $2\frac{1}{2}$ lacks of Rupees can be secured to help the extension of Primary education. The Inspection and direction charges at present exceed 2 lacks of Rupees, which represents upon an expenditure of 24 lacks the high proportion of 10 percent. The expenditure on colleges also comes to about two lacks, most of which represents the salaries of Professors. By the substitution of native for European agency both in the Professorial and the Inspection staff to a greater extent than has been contemplated hitherto, we may well hope to effect a saving of Rs. 25,000 at least per year, without affecting the quality of the work done at present. In the other Presidencies, native Inspectors and Principals of colleges have been found to give equal satisfaction with the European officers employed by the Department, and there is no reason why the same experiment should not succeed equally well in Bombay. We have thus suggested means by which a sum of nearly three lacks of Rupees of additional funds can be made available without touching any single institution at present in existence. This fund properly managed ought to suffice for the establishment of at least 8,000 schools in the rural districts on the plan suggested above, which will make it possible to have a school in every village which has a larger population than 500 souls. This will afford work to the Department for at least 20 years to come, by which time we might be well able to see our way to secure an additional grant from the Imperial funds, or obtain other resources by which the lower limit of villages with a population ranging from 200 to 500 might be reached. We must bring these observations to a close here, and we trust that the Members of the Education Commission will take into their serious consideration the several suggestions we have ventured to make, and give effect by their recommendation to the only economic plan that appears to us to be practicable under existing circumstances of carrying out the beneficent views of the Government of India, without adopting any reactionary measures, or dislocating the existing machinery of the Department, and jeopardizing the considerable success which has attended the efforts of Government in furnishing a complete system of national education for British India. As a matter of fact, the so-called higher classes are but a small speck in the dead level of poverty which is the normal condition of society in this country, and even the few rich families that do exist do not take any advantage of the existing system. It is the middle, or rather the hereditary literary and mercantile classes, about 10 per cent of the whole population, which appreciate the present system of instruction, and in the work of Indian regeneration the real leadership belongs to this class of society. Until they are permeated by the leaven of new ideas, it is useless to expect any general or lasting progress. They alone can furnish the teachers who will undertake the work of popular education. India's present circumstances, social and economical, require that these agencies should be allowed to operate freely in all directions, and it becomes as much the duty of Government to help the middle classes to obtain higher education, as to assist the lower to secure primary instruction. When the richer classes increase in numbers, and in their appreciation of the responsibilities of rank and position, and endow institutions in the way the richer classes in

other countries have done, it will be time to consider the subject in the spirit which has found expression in the Resolution of the Government of India. The Educational Despatch recognized this double duty of Government in the most explicit terms, and it certainly never contemplated any withdrawal of state help from higher instruction, till this could be done without retarding the general progress of the people. Any precipitate action on the part of Government can only end in banding over the charge of higher education into the hands of the Protestant Missionary societies, whose chief end is the propagation of their faith. This consummation is naturally unwelcome not only to the mass of the Native population, but also to a large majority of the Christian community as is evidenced by the protest of the Catholic Bishops. The political and religious effects of such a reactionary policy will be disastrous, and as we have already shown, the Government is really not Placed on the horns of the imaginary dilemma which it has needlessly conjured up as a justification for the abandonment of its present neutral position.

THE NEEDS OF INDIAN INDUSTRIES AND THE LINES OF ADVANCE IN EDUCATION

Sayaji Rao III, Maharaja of Baroda

The Inaugural Address at the Second Indian Industrial Conference, delivered by His Highness at Calcutta in December 1906.

MR PRESIDENT, DELEGATES TO THE CONFERENCE, LADIES AND GENTLEMEN,-It was only last month, on my return from a tour in Europe and America, that your able and energetic Secretary, Rao Bahadur R. N. Mudholkar, called on me, and conveyed to me your committee's unanimous request that I should attend this Conference, and deliver an Inaugural Address. I naturally felt some hesitation in acceding to this request, partly because of the pressure of administrative work owing to my recent return from a foreign tour, and partly because I am aware that there are others who are better qualified than myself to advise you in the noble work which you have undertaken. But, Gentlemen, your Secretary was not to be put off by these reasons. He pressed me to accede to the request of the committee, and was good enough to assure me that by so doing I would be rendering some service to the great cause which we all have at heart. To this argument I felt it my duty to yield. I feel very strongly that to help in the industrial movement of the present day is a duty which devolves on all of us equally.

Whatever be our vocations in life, we cannot be untrue to this duty without being untrue to ourselves and our country. And I feel to-day, as I have always felt and declared, that our interests are one and the same-whatever helps and elevates you, helps and elevates us; whatever retards your progress, retards ours. Furthermore, I am strongly convinced that our activities in all different departments of life-political, social and industrial-Tare so correlated that we shall never make any marked progress in one without making similar progress in all. Three seemingly diverse currents of intellectual activity converge towards the same headworks and feed the same main stream of life. Unless we extend our horizon and take a less parochial view, we can ill understand the value and place of each of these component parts in the great machinery of progress.

Gentlemen, I do not propose to take much of your time with an account of the industries of India in ancient times, but a brief reference to some notable facts will perhaps not be unsuitable on an occasion like this. You are all aware that India was famed for her cotton fabrics from very ancient times; and antiquarians tell us that Indian cotton found its way to Assyria and Babylon in the remote past. Indigo, which is peculiarly an Indian produce, has been detected by the microscope in Egyptian mummy cloths, and Indian ivory and other articles were probably imported into ancient Egypt. There can be little doubt that the old Phoenicians carried on a brisk trade with India, and much of the spices and precious stones, ebony, gold and embroidered work, with which they supplied the Western world, came from India.

The Greek civilisation developed at a later date; and Herodotus, generally called the Father of History, speaks of Indian cotton as "wool growing on trees, more beautiful and valuable than that produced from sheep". A brisk trade between India and the Western world was carried on during the centuries preceding the Christian era; and as Rome rose in power and importance, and Alexandria became a flourishing mart, the trade increased in volume. Silk threads, sapphires, indigo and cotton fabrics were exported from the mouths of the Indus; and the important sea-port town of Broach-then called Bharukaccha by the Hindus, and Barygaza by the Romans-exported gold, silver and other metals, glass, corals, muslins, cotton fabrics, ivory, ebony, pepper and silk. The Roman Empire declined after the third

Speeches and Writings of His Highness Sayaji Rao III, Maharaja of Baroda, 1877-1927, Macmillan, 1928, Pp. 183-217.

century. An Eastern Empire was founded with its new capital at Constantinople, and that place attracted to itself much of the Asiatic trade which before used to flow through Alexandria.

India was the scene of frequent invasions during the centuries succeeding the beginning of the Christian era, and Scythians and Huns desolated her western province. But a great chief and warrior, known to our literature under the name of Vikramaditya, at last turned back the tide of invasion, and India was virtually free from foreign raids from the sixth to the tenth century. It was within this period that Chinese travellers, Fa Hien, Hiuen Tsiang, and others, visited India as religious pilgrims, admired her arts, industries and manufactures, and wrote on the Hindu temples and Buddhist monasteries, which existed side by side in every large town. Hindu traders founded settlements in Java and other islands; and it was in a Hindu ship, sailing from Tamralipti or Tamlook, that Fa Hien left India. Those of you who have been to Europe, and visited the continental towns, may have seen images of Hindu gods and goddesses in the Museum of Leyden, taken there by the Dutch from Java, where Hindu religion and learning were introduced by traders and settlers from India.

Venice was the channel of trade with India after the close of the dark ages; but the glory of Venice departed with the discovery of a new route to India round the Cape of Good Hope by Vasco da Gama about the close of the fifteenth century, and Portugal rose in power and commercial enterprise as Venice declined. In the sixteenth century, all the southern seaboard of Asia, as far as China, was practically under the commercial control of Portugal. But the Dutch replaced the Portuguese in the seventeenth century, and like the latter enriched themselves by the Indian trade Likewise the English appeared on the scene a little later, and wrested from the Dutch a large share of the Eastern trade in the eighteenth century. It is remarkable that, within the last thousand years, nation after nation in Europe has risen to power and to great wealth mainly through the Eastern trade. Constantinople, Venice, Portugal, Holland and England have successively been the carriers to Europe of the rich manufactures of India, as the Phoenicians and the Arabs were in the ancient times.

When England obtained territorial possessions in India in the eighteenth century, she was evolving her commercial policy in relation with Ireland and her American colonies. Her aim and endeavour was to obtain raw produce from her dependencies and to develop manufacturing industries in England. She repressed manufactures elsewhere by unequal tariffs in order to develop her own manufactures. The American colonies freed themselves from the industrial servitude when they declared their independence; but both Ireland and India continued to suffer. Industries in both these countries steadily declined early in the nineteenth century; manufacturing industries progressed by leaps and bounds in England; and the invention of the power-loom completed her industrial triumph. Since then England has slowly adopted a fair and equitable commercial policy, and repealed Navigation Acts and unequal tariffs. To-day England stands forth as a pre-eminent free trader with all the world. This brings me, Gentlemen, to the industrial history of India in our own times.

The triumph of machinery has been the triumph of our age : the victory of steam and electricity will always be memorable among the decisive battles of the world. The rise of the power-looms, for instance, has been stealing a march over the hand-loom workers, and the numbers employed in cotton-weaving in India have declined by 23 per cent. even within the last decade. Even the ginning and the pressing of the cotton has so extensively participated in the use of improved machinery that its hand workers have dwindled by fully 68 per cent. And yet it is this textile industry itself which shows how, with intelligent adaptation to the improved methods of art, our Indian industries can compete with the manufactures of Europe. The Bombay mills give

daily employment to about 170,000 factory operatives, while as many as 30,000 more are maintained by the ginning presses. Some forty years ago we had only 13 cotton mills in all India. The number rose to 47 in 1876, to 95 in 1886, to 155 in 1895, and to 203 in 1904: and to-day the number of our cotton mills is still larger. We had less than 4000 power-looms forty years ago: the number was over 47,000 in 1904. We had less than 300,000 spindles forty years ago: the number exceeded 5,000,000 in 1904. These are insignificant figures compared with the huge cotton industry of Lancashire; but they show that we have made steady progress, and that we may fairly hope to make greater progress in the future if we are true to our aims and our own interests. Our annual produce of yarn is nearly 600,000,000 pounds in weight; and it is interesting to note that out of this total output about 3o per cent. is used mostly by our hand-loom weavers.

Gentlemen, it is with legitimate pride that the Indian patriot marks this silent progress in the mill and hand-loom industries of India which, next to agriculture, are the largest industries in this land. New mills have been started in Ahmedabad and Bombay within the last two years, largely as a result of the present *Swadeshi* movement. In the poor State of Baroda too, this progress is marked. For more than twenty years the State worked a cotton mill in the capital town to give an object lesson to the people and to encourage private companies to start similar mills. The call has now been accepted, and a private company has at last been formed, and has purchased the State mill from our hands with the happiest results. Recently a second mill has been completed and is about to start work, and a third mill is now under construction. More than this, the number of ginning factories and other factories using steam has multiplied all over the State, and the number of hand-looms has doubled in some towns. All the coarser kinds of yarn in the Indian markets are now mostly of local spinning; an insignificant fraction alone being imported from abroad: In the case of yarn of higher counts, however, the local manufacture falls much below the supply of the foreign mills. Muslin and finer fabrics can be imported much more cheaply, and in a more pleasing variety of design and colour than can yet be locally produced. The hand-looms of the East, once so far-famed for the fineness of their fabrics, have now dwindled into small importance. Prints and chintz from France, England and Germany are still extensively imported to meet, not only the local demand, but also the demand of markets across the Indian frontier in Persia and Afghanistan.

Thus, though there is reason for congratulation in the rise of our textile industries, there is yet greater reason for continued toil and earnest endeavour. We are still at the very threshold of success. Our cotton mills produced less than 600,000,000 yards of cloth last year, against over 2,000,000,000 yards which we imported from other countries. Here is scope for indefinite expansion. We exported cotton of the value of £213,000,000 to foreign countries, and imported in return for this raw material cotton manufactures of the value of £390,000,000. We are thus producing only a fourth of the mill-made cloth which the nation requires. We should not rest till we are able to manufacture practically the total supply needed by our countrymen.

Gentlemen, the remarks I have made about the cotton industry of India apply to some extent to the other industries which require the use of steam. Bengal is known for its jute industry, which I believe is increasing year by year; and the number of jute mills has increased from 28 in 1895 to 38 in 1904. Northern India and the Panjab have some six woollen factories, whose produce has increased from 2,250,000 pounds in weight in 1896 to 3,500,000 pounds in 1901, and I have every hope that our countrymen, who have been so successful in the cotton industry, will broaden the sphere of their operations, and take to jute and woollen industries also.

The silk industry is one of the most ancient industries of India, but declined like other ancient industries under the repressive commercial policy of the eighteenth and early nineteenth centuries. Some faint signs of improvement are, however, visible now. Tassar silk is manufactured in many parts of India, and quantities of it are exported to Europe. In Assam, silk still continues to be the national dress of women, and each family weaves silk *saris* for its own use. In Bengal some improvements have been recently effected by the adoption of scientific methods 'of testing the seed. In the Panjab the attempt to reintroduce the cultivation of silkworms has not been attended with marked success. In Kashmir the industry is indigenous, and the State is endeavouring to develop it. Much attention is paid to this industry in the advanced and enlightened State of Mysore. And in the State of Baroda I have been endeavouring to spread and develop the industry. The number of filatories in India in 1904 was only 75, and the number of silk mills was only 11; but much silk is also produced as a cottage industry.

So far I have confined myself to the textile industries; and I have scarcely time to refer at any length to the other industries of India. Brass and copper have been used for vessels in India from ancient times, but have been threatened lately by the cheap enamelled iron ware of Europe. Aluminium is a new industry, and we are indebted to Mr Chatterton of Madras for greatly developing it in India.

Recent geological surveys and investigations have brought to light the rich area of iron which has been lying concealed for so long in Central India; and there is great scope for the development of iron industry. Veins of iron ore are believed to exist in several places besides those where they have already been explored; and if only a few more enterprising companies, like my friend Mr Tata's, spring up and prospect these mines, they have a hopeful future before them. If the quality of the indigenous coal is improved and the means of communication made more easy and cheap, so as considerably to reduce the cost of transport, we may be saved importing large quantities from abroad. I am glad to find that the able geologist who discovered suitable iron ore for Mr Tata's scheme, Mr P. N. Bose, has been selected by you as Chairman of the reception committee of this Conference. The scheme is still under the consideration of Mr Tata's son, whom I had the pleasure of meeting recently in England. There were 89 iron foundries in India in 1904, and it is to be hoped that the number will rapidly increase in the near future.

Bengal is rich in coalfields, and out of the 8,000,000 tons of coal, worth about two crores of rupees, raised in all India in 1904, no less than 7,000,000' tons were raised in Bengal. These will seem to you to be large figures, but what are 8,000,000 tons compared with considerably over 200,000,000 tons annually raised in England? Our countrymen are engaged to some extent in coal-mining, though greatly hampered in the endeavour by want of technical knowledge. I am glad the Indian Government have granted scholarships to some young Indians to learn practical coal-mining in England. The importance of coal consists in this, that its abundance makes every other industry on a large scale possible. Coal and iron have been the making of modern England, more than any other causes.

These are the principal industries of India carried on mainly by steam, and for facility of reference I give the figures as to them and a few other industries in a tabular form:

	1895	1904
Cotton mills	148	203
Jute mills	28	38
Woollen mills	5	6
Cotton ginning, cleaning and press mills	610	951
Flour mills	72	42
Rice mills	87	127
Sugar mills	247	28
Silk filatories	89	75
Silk mills	28	11
Tanneries	60	35
Oil mills	163	112
Lac factories	133	128
Iron and brass foundries	64	89
Indigo factories	8225	422

These figures will show at a glance our present situation in relation to the principal industries carried on by steam in India. In some, like the cotton industries, we are only at the very threshold of success and produce only about a fourth of what we ought to produce. In others, like the wool and jute industries, we are indebted almost entirely to European capital and enterprise. We ourselves have scarcely made a beginning as yet. In a third class of industries, like sugar and tanneries, we have actually lost ground within the last ten years. While in a fourth class of industries like iron we are still almost wholly dependent on Europe, the produce of our own foundries scarcely supplying any appreciable proportion of the requirements of India. I repeat therefore what I have already said before: There is ground for hope but not for joy or elation: there are strong reasons for earnest and continued endeavour in the future to secure that success which we are bound to achieve if we are true to ourselves.

And there is one more fact which I would like to impress on you in concluding this brief survey of our present situation. A great deal of attention is naturally paid to the mill unto man.. India, and to tea, indigo, coffee and other countries in which European capital is largely employed. We know, however, that the labourers who can possibly be employed in mills and factories form only an insignificant proportion of the industrial population of India. Very much the larger portion of that industrial population is engaged in indigenous industries carried on in village homes and bazaars. India is, and will always remain, a country of cottage industries. Where hundreds of thousands can work in mills and factories, millions and tens of millions work in their own huts; and the idea of greatly improving the condition of the labourers of India, merely by adding to mills and factories, is only possible for those who form their opinions 6000 miles away. No, Gentlemen: any comprehensive plan of improving the condition of our industrial classes must seek to help the dwellers in cottages. It is the humble weavers in towns and villages, the poor braziers and coppersmiths working in their sheds, the resourceless potters and ironsmiths and carpenters who follow their ancestral vocations in their ancestral homes, who form the main portion, and who demand our sympathy and help. It is they (more than the agriculturists, or the mill and factory labourers) that are most impoverished in these days, and are the first victims to famines; and if your *Swadeshi* movement has brought some relief to these obscure and unnoticed millions and tens of millions in India, as I have reason to believe it has done to a perceptible extent; if it has created a larger demand for their manufactures, widened the sphere of their labours, and brought some light to their dark and cheerless homes, then the movement, Gentlemen, has my cordial sympathy. Help and encourage the large industries, but foster and help also the humbler industries in which tens of millions of village are engaged, and the people of India, as well as those who engaged in the work of administration, will bless your work.

In saying all this, I do not by any means ignore or minimise our difficulties. We have to recover the ground which we have lost during the last two centuries. We in our ignorance and poverty have to compete with some of the richest, best trained, and most skilful nations on earth. With our ancient methods we have to habituate ourselves to modern ways, to adopt modern inventions, and then to beat those inventions. It is a duel with Western nations with weapons of their own choosing. With weapons with which we are still unfamiliar we must face and conquer those who are past masters in their use. With the produce of our infant mills and our infant iron foundries we must oppose the overwhelming flood of manufactured goods which England, Germany and America are pouring into India.

The danger of extinction with which our industries are threatened is therefore imminent. Keep to your conservative methods, cling to your

orthodox ways of work, and your industries must perish. Such is the inexorable law of the survival of the fittest, and such the admonition width a true *Swadeshi* movement ought to give you. If the rush of the steam engine and the whiz of electricity, combined, with cheap and easy means of transport, have succeeded in dumping your bazaars with the cheap and attractive products of foreign marts, rise to the occasion and learn how to withstand this inroad with intelligent anticipation and skilful adaptation. Learn to force Nature into a corner; accost her and bring out her inmost secrets, harness her powers, tackle her energies, and make of her a handmaid unto man. Use Nature to the relief of man's estate. Any competition between skill, capital, and organised enterprise on the one hand, and ignorance, idleness and poverty on the other can only have one result. Learn' to combine and co-operate; learn the value of time and the use of money; and the chances of a fairer fight will eventually requite all your efforts.

Swadeshiism can be a genuine economic force under the above conditions. It can be a potent weapon of usefulness if properly understood. There is no economic fallacy in that *Swadeshi* creed that aims at improving the indigenous arts. The genuine *Swadeshi* ought to secure the maximum of production at the minimum of cost. Patriotism demands that the greater cost and the slight discomfort of using indigenous goods should be cheerfully put up with at the outset. But remember that no such movement can be permanently successful unless it involves a determined effort to improve their quality and cheapen their cost, so as to compete successfully with foreign products. The most rigid economist will then have no flaw to find in your *Swadeshi* armour.

A single instance of the pitiable straits to which our industries have been reduced, on account of the difficulties mentioned above, will suffice. The export trade of Indian cane-sugar has now become almost a matter of past history. German and Austro-Hungarian beet-sugar has driven Indian sugar from its own stronghold. In spite of the imposition of duties and extra tariffs, the bounty-fed sugar from Europe captures the market from the Indian refiner even on his own field; and it is curious to observe how the cane-sugar industry of India has suffered in the struggle. The reason is not far to seek: laws can cure only artificial anomalies; the levy of extra duties can countervail only the adventitious advantage of bounties and subsidies; but what can remedy causes of mischief that lie deeper, ingrained in the very constitution of the Indian grower and inherent in the very conditions under which the Indian refiner has to work? The demand for Indian sugar is large enough; it is even larger than the local refiners can supply; yet the cost of production is so excessively inflated that it pays better to import the cheap beet-sugar, grown with the aid of government bounties, than for India to bring the products of her own growing into her own markets. The growers and refiners pursue a process involving extravagant waste of raw material; and ignorant of the latest inventions of science or art, they adhere to the methods inherited from their sires with a hide-bound orthodoxy.

The same deficiency in improved methods and perfected machinery has also led to the ruin of the tanning industry of Madras. The curing and tanning of skins by an improved process in America has been found more suitable and more economical than the purchase of skins tanned in India. Similarly the manufacture of synthetic indigo, like other coal-tar preparations, has effected a revolution in agricultural chemistry; and the quantities of artificial indigo that the German factories have dumped into the markets of the world, at very cheap rates, have a very depressing influence on the indigo trade of Bengal. The exports of indigo, which in 1895 amounted to about 53,000,000 rupees in value, dwindled down to the low figure of 6,000,000 ten years later, and the decline has been so rapid that it has been a cause of alarm for optimists even of

a thoroughly Micawber type. Dyes of no less value than seventy-five lakhs of rupees were poured into the Indian vats from Germany, Belgium and Holland in 1905; and these aniline dyes have completely ousted the Indian dyes from their own markets.

It thus becomes imperative on all of us to endeavour to minimise this helplessness and enrich the industrial resources of our country. The trade returns of India are an instructive study. They tell us that in 1905, fully 69 per cent. of our exports were represented by bulky agricultural produce, which gave no employment to local skill and capital save that employed in tillage. With regard to the total imports in that year, on the other hand, fully 59 per cent of the entire amount represented manufactured articles, with reference to which we did not know how to supply our own wants, and had to depend upon foreign skill, foreign capital, and foreign enterprise. A fair criterion of the industrial development of a country may safely be sought in the proportion of its exports of manufactured goods to the export of raw material from the country, and secondly in the proportion of its imports of raw material to the imports of made-up or finished goods. The industrial prosperity of a country may be said roughly to vary directly with its exports of manufactures and imports of raw material; and inversely with its exports of raw produce and imports of manufactured goods. This is a safe and reliable canon of industrial economics.

Our serfdom to foreign capital and to foreign enterprise could scarcely be more complete. Our railways are financed by capital from Europe; our mines are exploited by savants from America, and even in our daily household needs our dependence upon products of foreign marts continues from day to day. We are being fed and clothed, diverted and entertained, lighted and washed, warmed and comforted, carried and housed, by the foreign artisan. Our arts and industries are standing to-day on the brink of a precipice, and are threatened with imminent extinction. The problem of saving the country from this perilous plight, and emancipating her from economic slavery to the nations from the West, has become the one topic of absorbing interest; and to find a cure for this malady has' become the one anxious thought of every patriot and every statesman. You, Gentlemen, have already bestowed your earnest attention on this subject, and I need therefore only make mention of the industries which appear to me to be capable of great progress in the immediate future. The list includes: the textile industries; carpentry and other wood-work; iron, copper and brass work; work in gold and silver and jewellery; masonry and stope-work; pottery and brick and tile making; dyeing; tannery and leather work; rope weaving; cane and bamboo work; mat making and basket work; glass work; turnery and lac work; horn and ivory carving; embroidery; sugar refinery; tobacco curing ; and oil and flour mills.

Out of these industries we might select, to begin with, those for which there is a large demand in our home markets, and whose raw material we have been at present exporting in shiploads for working them into finished products abroad. In the place of large exports of raw vegetable products, our endeavour should be to send out large cargoes of manufactured and finished goods. In 1905 we exported oil seeds of the value of 106,000,000 of rupees, and imported oil of the value of 22,000,000. Our oil factories in the Bombay Presidency are said to have supported only 76 operatives at the last census. There is an indefinite scope for the expansion of this manufacturing industry in the country. Oil pressers have diminished by 47 per cent, during the last decade, as it was found more profitable to export oil seeds, and import pressed oil from abroad, than to press it at home by crude and antiquated processes. Besides, as an authority has pointed out to us, to export the entire oil seed is to export the soil's fertility.

Moreover, every year we export large quantities of wheat and other grain to be ground in foreign mills and import large quantities of flour for our use; while the wheat-grinding mills in the Bombay Presidency afford employment to no more than 78 operatives as the figure for the last census informs us. These are instances of the low state of our industries and of the difficulties under which they suffer. It should be your aim and endeavour to face and conquer these difficulties, and a wise and sympathetic legislation should help your effort and lead you to success.

Four years ago, I made some remarks at Ahmedabad, which with your permission I will repeat to-day. "Famine, increasing poverty, widespread disease, all these bring home to us the fact that there is some radical weakness in our system and that something must be done to remedy it. But there is another and a larger aspect of the matter and that is that this economic problem is our last ordeal as a people. It is our last chance. Fail there and what can the future bring us? We cast only grow poorer and weaker, more dependent on foreign help; we must watch our industrial freedom fall into extinction and drag out a miserable existence as hewers of wood and drawers of water to any foreign power which happens to be our master. Solve that problem and you have a great future before you, the future of a great people, worthy of your ancestors and of your old position among the nations." These are words which I spoke at Ahmedabad; and I repeat them to-day, because we feel the importance of them. Perhaps more than we felt four years ago, we are at a crisis in our national history. The time has come when we must make arduous and united endeavour for securing our industrial independence or we shall sink again, it may be for centuries to come. We must struggle and maintain our ancient position among the industrial nations of the earth, or we shall be betraying a sacred trust, and be false to our posterity.

I am sure you will not accuse me of exaggerating the gravity of the present situation. I am sure you all feel, that if at the present critical time we do not free ourselves from that industrial serfdom into which we have allowed ourselves to sink, we have no hope for the future. This, as I said before, is our last chance.

And now, Gentlemen, you will permit me to say a few words with regard to the work you have undertaken and the methods by which it can best be done. At a critical juncture in our country's industrial history, the Indian National Congress conceived the happy idea of having an Industrial Exhibition in connection with their annual gatherings. From the very first, the Indian and the Provincial Governments rendered every assistance in their power to make these industrial exhibitions a success; and I may add that all classes of the Indian population-Hindus and Muslims, Englishmen and Parsis, merchants and manufacturers, graduates, rich landlords and humble citizens-have worked harmoniously towards this common object. These annual exhibitions fulfil a double purpose. First they inspire manufacturers with healthy emulation, and enable them to make the products of the different provinces known to all India. In the second place they enable traders and dealers in articles of daily use to obtain accurate information, and collect articles from all parts of India for the use of purchasers in every province and town. These exhibitions have been a success; but let us not deceive ourselves. Compared with the wealth, the variety, the magnitude of Western products as I have seen them abroad, the results we have achieved here are meagre indeed. An exhibition like this simply serves to emphasise our backwardness in utilising the resources at hand. Let us never be satisfied until we attain a standard of perfection that will bear comparison with the Western world. With the sympathetic co-operation of the Government and the quick

intelligence of our people, there is no reason why such a result may not be achieved within a generation or two.

Last year, Gentlemen, you took a new departure. Not content with these annual exhibitions, you held an Industrial Conference, and the first Conference was held under the guidance and presidentship of my revenue Minister, Mr R. C. Dutt. The Conference arranged that its work should proceed all through the twelve months instead of being transacted once in the year. It appointed Provincial Industrial Committees at Calcutta, Bombay, Madras, Allahabad, Lahore and Nagpur. And it also appointed a permanent secretary and under-secretary with headquarters at Nagpur to compile information, to carry on correspondence and to help the Provincial Committees in their work all through the year. I am glad to find that this central establishment has not gone to sleep over its work; within this closing year the secretary and under-secretary have collected subscriptions which have more than covered the year's expenditure; they have published in a handy form a report of the Conference, embodying all the valuable and instructive papers which were read at the time; and they have compiled a directory, not complete or exhaustive by any means, but a fair beginning, describing the different industries in the different parts of India. They have also published a very interesting report of the work done during this year in all parts of India.

All this is a good output for a first year's work, but you should not be satisfied with this. Greater progress is expected from you in future years. The weak point in the Conference organisation seems to me that the Central Office is not in sufficient touch with the Provincial Committees, and therefore is not able to render them sufficient help to develop the industries of the different provinces. Besides Provincial Committees you require district and even town associations for closer touch with the masses. India is a country of vast distances; and from many parts of India it takes more than a day and a night to travel to Nagpur. The State can do much to help the outlying provinces; the provinces can do more to help themselves. By such harmonious co-operation towards a common object, I hope to see the work of the industrial conference show a continued progress from year to year. A central organisation is needed to co-ordinate all the endeavours that are being made in all parts of India to promote home industries, and the Industrial Conference with its Central Establishment and Provincial Committees was not established a day too soon.

And now I desire to place a few practical suggestions before you such as from my own knowledge and experience occur to me. The first and the most important means of promoting our industries is to spread general education amongst the masses. Great and far-reaching changes might be made in the educational system of the country, and I am of opinion that no ultimate solution of our problem will be reached until schools have been provided in every village, and education is taken to the very threshold of the people; until in fact education atlist in its primary grades has been made free and compulsory, throughout the land. I am indeed gratified to learn that the Government of India has already under consideration the policy of making primary education free.

The experiment of free and compulsory education is a novel one in this country; and yet its novelty must not scare us from our duty. I am not, indeed, prepared at this time to recommend the example of some of the socialistic communities of the West in providing free breakfasts, free baths, free boots, and everything else almost, except free beds. I have, however, endeavoured to introduce compulsory education throughout the State of Baroda and hope to see my people benefited by it. The measure has been working with satisfactory results in one part of the State for a number of years. Emboldened by the success

of this experiment, I have decided to make primary education compulsory throughout the State, and absolutely free.

Of scarcely less importance at this time of day is the need for industrial education. I must confess that it is my recent visit to Europe and to America that has impressed me most with the immense importance of technical education in promoting the industries of nations. I may state without exaggeration that education has undergone a complete revolution in the West within the present generation. The great armaments of the Western nations, their vast armies and navies, do not receive greater attention and greater solicitude in the present day than that education in industrial pursuits which befits them for the keener struggle which is continually going on among nations for industrial and manufacturing supremacy.

Among the nations on the continent of Europe, Germany takes the lead in industrial enterprise; and among the many technical institutes of that country, the Royal Technical High School at Berlin is the most famous. A large staff of professors teach over 1500 students, and applied chemistry in oils and colours as well as dyeing, bleaching, printing on cloths and silks, and leather tanning are taught on a scale unequalled in any other country on the continent. France is endeavouring to foster her industries and manufactures in numerous institutes. The Musée des Arts et Métiers of Paris has an extensive collection of machines and models of machines, and science and arts classes are held there on important technological subjects. The French Government manage the Sevres Royal. Porcelain Factory and the Gobelins Tapestry Factory; and frequent exhibitions are held in the Grand and Petit Palais of Paris.

Austria is not far behind, and Vienna has Technical Schools on a smaller scale, each teaching some branch of technical art. Italy has her Technical Academies; and a Polytechnic Institute, planned on the lines of the Cassanova Institute at Naples, might serve anywhere to collect the best craftsmen and the most promising apprentices under the same roof, and extend the moral influence of the teacher to the pupils. All the experts of art would be collected there and interchange ideas about their trade deficiencies and trade difficulties.

In London, the City and Guilds' Technical College, the County Council's Schools of Arts and Crafts, and the several Polytechnics, are among the many institutions where a practical training in arts and industries is imparted to the people. The new universities of Manchester, Birmingham and Leeds pay special attention to technical education, as the older universities of Oxford, Cambridge and London take up liberal and classical education. The Municipal School of Technology at Manchester is a monument of the enterprise of that great manufacturing city, and teaches mechanical, electrical, municipal and sanitary engineering, technical physics, industrial and general chemistry bleaching, dyeing, printing and finishing of textile paper manufactures, metallurgy and various other subjects. Some students from Baroda are engaged in the study of acids and alkali manufacture, and plumbing and sanitary engineering in this school.

But of all the countries which I have recently visited, it is America where I found the highest development of industrial education. Every single State in the United States has a State College where technical education is given to students absolutely free. No fees are charged in these State Colleges, because the proper training of citizens in technical arts is considered a matter of national importance, and lands and annual grants are assigned by the States for the maintenance of the colleges. Every State College teaches agriculture and engineering, and also gives some training to the students in military tactics. Other subjects are also taught according to the resources of these colleges. Besides these State Colleges there are

some forty-three privately endowed Technical Institutes all over the United States, where engineering is taught in all its branches-civil, electrical, mechanical and marine. Architecture, drawing, modelling and the textile industries are also among the subjects taught. The great Institute of Technology at Boston with its 2500 students, the Armour Institute at Chicago with its woo students, and the Pratt Institute at New York with its 1500 students are the best known among these privately endowed Technical Institutes. I need hardly add that the great universities like Harvard, Yale and Columbia also teach engineering in all its branches; and what will surprise you more, almost every High School has classes for manual training, comprising carpentry, smithy and machine shops.

I have not yet visited Japan, but we all know what Japan has done within the lifetime of one generation. Her victories in the battlefield have lately brought that wonderful land among the foremost nations on earth, but the victories of Nanshan and Mukden are not more brilliant than the triumphs of her industries achieved by a system of technical education which leaves very little to be desired.

My second suggestion to you is that,' besides establishing technical schools you should endeavour to introduce some manual training in the ordinary schools. The training of the eye and of the hand at an early age is useful to all-even to those who have not to support themselves by manual industry in life. Early lessons in drawing and modelling, simple instruction in carpentry and smith's work, are good for all students in all ranks of life. Physicians and psychologists tell us that such exercises, by introducing a variety in the course of studies, really refresh and help the brain, and make boys and girls more capable of acquiring both learning and practical skill. Moreover, to attach some industrial classes to our ordinary schools would have the healthy effect of giving a complete and not one-sided education to our children. The richer classes would be brought more in touch with the humble industries; the poor classes would acquire that skill and facility in handling tools which can be effectively acquired only at an early age; people in all branches of life would be impressed with the dignity of manual labour more than they are now in India. Your great endeavour to promote the industries of the land would be greatly helped when the nation receives an elementary technical training in schools. At the same time it is necessary to bear constantly in mind that no amount of specific training in manual arts can fill the place of that liberal education and general culture which should serve as the necessary substratum for all kinds of learning. Technical training is a supplement, but not a substitute, for general education, and should never be turned into a fad.

I have tried to impress on you, Gentlemen, the importance of founding technical schools, and of introducing manual training in your ordinary schools, throughout India. Years Will, however, pass before this can be done on an adequately extensive scale, so that India can take her legitimate place among the nations of the earth in industrial education and mechanical inventions. It follows, therefore, that for years and perhaps generations you must send your young men to Europe, America and Japan for that complete industrial training which they cannot yet receive at home. Make no mistake, and let no time-honoured prejudices deter you from travelling to other parts of the earth and receiving that new light, that new culture, those new ideas, which even the most gifted and advanced nations prize, and which India needs perhaps more than any other civilised nation. The healthy results of foreign travel and of comparing notes with foreign nations are already manifest to India in every department of life within the last fifty years. Nothing impressed me more upon my recent return to India than the changed attitude of many of my countrymen towards foreign institutions. Men of all ranks have been eager to learn my

impressions of Western nations. Such a spirit of enquiry is always healthful if it proceeds from a sincere thirst for knowledge. I was much interested in learning while in America that some two or three Thousand students every year go abroad to learn the best of European methods in education and in commerce; while the national Government sends men to all parts of the world to study the products of other lands. England, Germany and France with all their commercial prestige' do not hesitate to send enquirers to foreign parts. Coming nearer home, we find that huridreds of Japanese young men complete their education in France, Germany, England and America. Such is the desire for knowledge and the wholeheartedness of the latter that not only do they acquire a special education in whatever subject they may be engaged, but also Prow themselves with the means of livelihood, not shrinking from e humblest occupations.

Japan profited most by sending out her youths to the seminaries of Europe. She owes, her present greatness that illustrious band of scholar-statesmen who imbibed the first principles in the science of politics and the Art of government at the universities of Gottingen and Leipzig. She is to-day the mistress of the Eastern seas because of her student-sailors, who Acquired their first lessons in naval warfare in the docks of Tilbury and Portsmouth. Her battles are fought and won by her soldiers, who had been themselves initiated into the mysteries of manoeuvring and the secrets of stratagem in France and Germany. And she bids fair to assume the supreme place in the trade of the Orient on account of her scholar-financiers, who have rubbed shoulders with bankers in the counting-houses of London, Berlin and New York. Has the world ever seen a nobler instance of young men architecturing the fortunes of their Mother-Land? Can we conceive a higher example of patriotism for India's sons to emulate? Let us follow their spirit of self-sacrifice and devotion. Let us hold up their ideal of national unity and social equality, learn their eagerness to acquire the newest methods in all walks of life; imitate their perseverance and patient toil; and we may yet save the fortunes of our country.

I have learnt with pleasure that an earnest and patriotic worker of this province, Mr Jogendra Chandra Ghosh, the worthy son of a worthy father, has organised a scheme for sending young men to Europe and America for education; and that a large number of students have already been sent in accordance with khis scheme. Nothing gave me greater pleasure while abroad, than coming in touch with several Bengalis who were studying in Europe and America. Although far away from India, they had the kindest and most patriotic feelings for their native land. India is to be congratulated in having such men. This policy has also been pursued by the State of Baroda for many years past, and young men educated in Europe at State expense are now serving the State with credit, or finding profitable employment in other parts of India. Several young students have lately been sent to England and Germany, America and Japan; and a scheme is now under consideration to send a limited number of students at regular intervals, mainly to learn the methods of modern industry.

Gentlemen, India is to-day at the parting of the ways. There are great possibilities before her. The people of Bombay for instance are looking forward to the use of electricity generated in the Western Ghauts for working their mills. The people of Madras are looking forward to the experiments made in "Tree Cotton". All India looks forward to the happiest results from the Research Institute, for which we are indebted to the late lamented Mr Tata. There is stir; and the people are showing signs ofawakening. This is hopeful; but let us not forget that years of patient toil are before us, that it is only by patience and per-severance that we can ever succeed in competing with the West in industrial pursuits. We need the spirit of determination, of courage, of confidence in ourselves and in each other; We

need to distinguish between essentials and, non-essentials, between the spirit which vivifies and the letter that kills. Let our energies be not distracted in small things.

I now desire, with your kind indulgence, to add a Word on the lessons that seem to me to arise from the experience of different nations-lessons which are pertinent to India at this juncture. Turning to ancient Egypt, once the centre of the most advanced civilisation of the time, We discover that vast resources; agricultural and Mineral, are not alone sufficient to produce Cultured and permanent civilisation; though the foundation of all stable civilisations must fall back in the last analysis upon the natural resources of the country. Egypt in ancient times had abundant, resources, but, failing to note the value of human life, failing to conserve the interests of the working masses, she sank from the pinnacle of power and culture into political servitude and academic decay. The nation that despises its humblest classes, that provides for them no opportunity to rise in the social scale and in self-esteem, is building its house upon the sand. The wealth of a nation is the quality of its manhood.

Greece fell from her eminence not from any failure of philosophical insight; in these directions she has been the chief source of inspiration for the whole Western world. Pericles, Plato and Aristotle are still household names in the West. Athens faded away like a fragrant memory because she failed to look to the economic bases of her prosperity. Had she taken pains to utilise her splendid maritime location for the development of commerce and industry; had she confided her commercial affairs to her freemen instead of to her slaves; had she applied the sagacity of her statesmen to the formation of a sound fiscal policy; the story of Athens might have had a different denouement. But she wasted her mineral resources and expended large sums in the erection of great temples of worship and art and learning. Far be it from us to suggest any criticism against the civilisation which has been the fountain-head of all subsequent growth in the culture of the West. I would simply point out that without a permanent and stable economic policy, no civilisation, however enlightened, can long endure. This is the message of ancient Greece to modern India. Be careful of large expenditure, either individually or collectively, which is unproductive. Bid her people forget their caste and tribal prejudices in the common effort to uplift the fortunes of India; bid them find expression for their religious enthusiasm in practical co-operation for the uplifting of humanity-of the human spirit in the temple of God. Bid them be free men, economically, socially, and intellectually; and no power under Heaven can long keep them in servitude.

Rome, too, has its lesson for India. In the complex and far-reaching series of disasters which led to the downfall of Rome, it would be difficult indeed to designate any one factor as the premier cause of the catastrophe. But of this we may be sure, that the highly centralised and paternal Government which developed under the later Caesars was a potent cause of weakness to the Empire. Private initiative and individual responsibility gave place to State operation of manufactures and industry. Insufficient currency and military oppression drove the husbandman from his plough and the merchant from his counter. The people looked to the Caesar for corn, and out of the public treasury the hungry were fed, if they were fed at all. The Emperor ruled by force of arms; manufactures were operated by a system of forced labour under the strictest surveillance of the State; the civilian was forced into idleness and vice; the masses into pauperism and dejection. The national spirit decayed, and Rome fell an easy prey to the ravaging hordes from the North.

At this crucial period in India's emancipation we shall need to keep constantly in mind the failure of Rome. No permanently sound and stable development can occur unless we take pains to educate the masses of our people to a sense of their paramount importance and dignity in the social structure. I conceive it to be the prime duty of the enlightened and well-to-do amongst us to arouse, to stimulate, and to educate the lower classes. We should help them to help themselves. But ever let us beware of paternalism: not charity but co-operation is the crying need of the hour.

Let our people as rapidly as possible be educated in the principles of economics, and let special pains be taken for the development of an honest, intelligent, entrepreneur class, who will be content to organise and manage our new industries without sapping their life by demanding exorbitant profits.

Ancient India too has lessons for us. I have already spoken of India's rich products and her brisk trade with the West in ancient times. But her mechanical inventions were slow because mechanical work was left to hereditary castes somewhat low in the scale of society. Our sculpture does not compare favourably with the sculpture and architecture of ancient Greece, and our mechanical progress does not keep pace with the mechanical inventions of modern nations, because our intellectual classes have been divorced, for centuries and thousands of years, from manual industry, which has been left to the humbler and less intellectual classes. In literature and thought we need fear no comparison with the most gifted nations on the earth. The genius for craftsmanship is also among the people, as is evidenced by the ingenuity and skill of our artisan classes. Make industrial pursuits the property of the nation, instead of the exclusive possession of castes; let sons of Brahmins and of learned Moulvies learn to use tools in their boyhood; let every graduate, who feels a call towards mechanical work, turn to that pursuit in life instead of hankering after salaried posts; and I am convinced the national genius will prove and assert itself in industries and inventions as well as ;n literature and thought.

Turning to the Western world of modern times, we discover lessons of the utmost importance for India at this time. As I look back over the last few centuries which have raised the nations of the West from the darkness of mediaevalism to their present high degree of civilisation, it seems to me that four historical movements are plainly discernible as important factors in that development.

The first movement to which I refer is the capitalistic programme of the last few centuries. I do not need to dwell before such an audience as this upon the advantages of a capitalistic organisation of industries, with its attendant systems of credit, banks and exchanges, with its economy of production and its facility of distribution in the scientific application of capital. We still have many things to learn from the nations of the West. For this reason I am firmly convinced that we need to devote large sums to the founding of Chairs of Economics in our colleges, and to the training of our young men in the subtle problems of finance. Let the brightest of our young patriots be sent to Western universities to master the principles of economic polity.

The second movement in the West is the taking of social, political and commercial affairs, which are purely secular in nature, out of the hands of the priests. In the thirteenth century the Church of Rome and her minions dictated not only matters of religious import but reached out in many directions to control all the relations of life, both individual and collective. For three centuries the popular will struggled against the secular tendencies of the Church, until led to open revolt by Martin Luther. Since that revolt the principle has been firmly established, and is held with special vigour in America, that the realm of the Church is in matters of moral and metaphysical import,

and that social, political and commercial relationships must be left to the individual consciences of those who participate in them. And in this connection I merely desire to point out, that in so far as India's religious ideas tend to keep many of our brightest and best minds out of practical affairs, out of the scientific, political and commercial movements of the time, by so far do the religious and philosophic, systems stand in the way of her progress towards economic independence. Why have the people of India been tardy in grasping the scientific principles of Western industrial organisation? I shall not presume to answer the question at any length but content myself with suggesting that we must, as a people, look well to the religious and social foundations of our national life. Break the monopoly of caste prerogatives and social privileges. They are self-arrogated, and are no more inherent in any one caste than commercial predominance or political supremacy in any one nation. Learn the luxury of self-sacrifice; elevate your brethren of the humbler castes to your own level; and smooth all artificial angularities. Always appraise action more than talk, and ever be ready to translate your word into deed.

I desire in the next place to call your attention to the development of the national spirit. Throughout Europe of the last 2000 years there has been constant progress in the unifying and the solidifying of national life. Petty states and warring principalities have given place to strong, compact and homogeneous nations, each possessing decided national characteristics, and each working through the patriotic impulses of all its people for the preservation of the national ideal. Now I find in my reading that the most frequent criticism offered against us as a people by candid critics is that we are disunited, many-minded, and incapable of unselfish co-operation for national ends. If this criticism is true, if it is true that India is a mass of small, heterogeneous peoples unfitted for independent national existence, then it behoves us as intelligent men and patriots to put in motion the principles of unity and co-operation. To this end I favour the adoption of a national speech and the inculcation of a national spirit.

And the last movement to which I would direct your attention is the development of Science in Europe during the last 15o years. The story of that development reads like a romance of olden times. Within that period have been developed railways, steamships, electric telegraphs, the telephone, friction matches, gas illumination, knowledge of electricity in all its multiform applications, photography, Roentgen rays, spectrum analysis, anaesthetics, the modern science of chemistry, the laws of the molecular constitution of matter, of the conservation of energy, of organic evolution, the germ theory of disease, and many other theories of the utmost practical importance in modern life.

I submit, my friends, that India's part in this wonderful movement has been shamefully small. Can it be true, as one writer has said, that some "strange fact of arrested development, probably due to mental exhaustion, has condemned the people of India to eternal reproduction of old ideas"? I cannot believe that the intellectual power of India is exhausted, nor can I believe that her people are no longer capable of adding to the sum of human knowledge. We have an intense and justifiable pride in the contribution of our sages of bygone days to the philosophic, the literary, and the artistic wealth of the world. It should be our chief pride, our supreme duty, and our highest glory, to regain the intellectual supremacy of the ancient days. The atmosphere of the West is throbbing with vigorous mental life. The pursuit of new truth is the first concern of every stalwart mind of the West, while the mass of our people are content to live stolid, conventional lives, blindly following the precepts of the fathers, rather than emulating the example they set of

intellectual independence and constructive energy. I cannot do better than close my remarks with those fine lines of the poet:

The east bowed low before the blast
In patient, deep disdain;
She let the legions thunder past,
Then bowed in thought again. 216

I would not for a moment have you think, my friends,. that I return from the West a convert to Western ideals, or in any sense a pessimist concerning the future of India. There are many defects in the Western civilisation that no impartial student of affairs may ignore. The evils that have grown up in the centralising of population in the great industrial cities constitute, in my judgment, a serious menace to the future of those races. There are weighty problems of administration, of morals, of public health, which the West, with all its ingenuity has not been able to solve. There is the eternal conflict between capital and labour which is becoming more acute as time goes on. Nor can one visit the great commercial centres of the West without feeling that the air is surcharged with the miasmic spirit of greed. Everywhere the love of display, and the sordid worship of material wealth and power, has poisoned the minds of the people against the claims of the simple, homely life, which the Indian, in his love for the things of the spirit, has cultivated since history began.

It may be the mission of India, clinging fast to the philosophic simplicity of her ethical code, to solve the problems which have baffled the best minds of the West-to build up a sound economic policy along modern scientific lines, and at the same time preserve the simplicity, the dignity, the ethical and spiritual fervour of her people. I can conceive of no loftier mission-for India than this; to teach Philosophy to the West and learn its Science; impart purity of life to Europe and attain to her loftier political ideal; inculcate spirituality to the American mind and imbibe the business ways of its merchants.

SELECTED PASSAGES ON PRIMARY EDUCATION

Gopal Krishna Gokhale

The last department on which I desire to offer a few remarks is the Education Department, and here I would specially draw your Excellency's attention to the utterly inelastic, and, therefore, highly unsatisfactory provision which is under the present system made for primary education. Outside the municipal towns the cost of this education is borne by Local Boards, which are required to spend on it one-third of the proceeds of the one-anna cess. Government ordinarily contributing a proportionate grant-in-aid. Now our assessments are fixed for thirty years, and therefore the proceeds of the one-anna cess must also remain fixed for that period. It is true that taking one district with another the Land Revenue is always showing some increase in consequence of Revision operations going on somewhere or other. But if we take each district separately, it will be seen that the provision which it can make for primary education out of its one-anna cess is absolutely fixed for a period of thirty years, and as the Government contribution ordinarily depends upon the amounts spent by the boards, the utterly inelastic character of the provision for primary education will be at once obvious. In fact under this system no expansion can take place even to correspond to the normal growth of population. Now, my Lord, however adequate this provision might have been when public education in the Presidency was placed on its present basis, it must be admitted that we have now out-grown this system. In the leading countries of the West, the State has now definitely accepted the responsibility of supplying free primary education to all its subjects, and the United Kingdom spent last year more than thirteen million sterling from the Treasury, that is, more than 10 per cent, of its total revenues on the primary education of the people. By the side of such expenditure, how painfully paltry is the contribution of Government to the cost of primary education in this country ! I think the time has come when the Government expenditure on primary education, instead of being a certain proportion of the amounts spent by the boards, should be a certain proportion of the total Provincial revenues. There are those who ask what good this kind of education can do to the mass of people in this country. I think that it is a very narrow view to take of the matter. In individual instances primary education may not show very decided results, but taken in the mass it means for the bulk of the community a higher level of intelligence, a greater aptitude for skilled labour and a higher capacity for discriminating between right and wrong. It raises, in fact, the whole tone of the life of large numbers, and I strongly feel that its wide diffusion is even more urgently needed in this country than elsewhere. My Lord, I do not wish to detain the Council longer. I sincerely join in the hope which the honourable member has expressed in the concluding paragraph of the Financial Statement that the Presidency has perhaps seen the end of its financial difficulties, and that it may now enter on a period of renewed prosperity and progress.

BUDGET SPEECH, 1902
Necessify of Mass Education

Then the question of mass education must be undertaken in right earnest, and, if it is so undertaken, the present expenditure of Government on public education will require a vast increase. My Lord, it is a melancholy fact that while with us nine children out of every ten are growing up in ignorance and darkness, and four villages out of every five are without a school, our educational expenditure has been almost marking time for many years past; whereas in England, where every child of school-going age must attend a school, the Government expenditure on

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education has mounted from $4\frac{1}{2}$ millions to $11\frac{1}{4}$ millions sterling in the course of fifteen years, and Lord Rosebery is not yet satisfied! It may be asked how can the two things that I advocate simultaneously be achieved together, namely, a considerable reduction of taxation and a large increase in the outlay on education and other domestic reforms? My answer is that the only way to attain both objects simultaneously is to reduce the overgrown military expenditure of the country. My Lord, when the strength of the Army was increased in 1885 by 30,000 troops in spite of the protest of the Finance and the Law Members of the Government of India, it was pointed out by those two officers that the then existing strength of the Army was really sufficient for all purposes of India - for keeping quiet within the borders and repelling aggression from abroad, and that if the contemplated increase was effected, it would only constitute a temptation to the Indian Government to undertake undesirable schemes of territorial aggrandizement. The Army Commission[1] of 1879, after an exhaustive inquiry, had come to the same conclusion, viz., that the then strength of the Army was sufficient not merely for the work of maintaining internal peace but also for repelling foreign aggression, even if Russia acted with Afghanistan as an ally. But the scare of a conflict with Russia was then so great that it carried everything before it, and the proposed additions to the Army were made in India. It may be noted that it was not only in India but in other parts of the British Empire too that large and sudden additions were then made to the existing garrisons, Mr. Gladstone obtaining a large vote of credit for the purpose. But the remarkable circumstance is that, whereas everywhere else the garrisons were reduced to their old proportions as soon as the scare passed away, in India alone the burden came to stay. The result of that was that the prophecy of Sir Auckland Colvin and his colleagues was fulfilled with painful promptitude, and within a year after the increases were made, Upper Burma was invaded, conquered and annexed. Well, my Lord, the contention that the additional troops were not wanted for Indian purposes is again forcibly illustrated by the fact that during the last two years over 20,000 troops are engaged outside India in doing the work of the Imperial Government, and that, though one of these two years saw the severest famine of the last century, the peace of the country has continued' absolutely unbroken. I am aware that in one of your first speeches in this Council, Your Excellency was pleased to declare that so long as you were at the helm of affairs in India, no suggestion for a reduction of the strength of the Army would meet with any support at the hands of the Indian Government. Now, even if an opinion, expressed three years ago, be not liable to modification today, what we urge is, I submit, not necessarily a reduction of the strength of the Army located in India, but a reduction of its cost to the Indian people. What strength of the Army should be maintained in India is a question of high Imperial policy in which we are not allowed a voice. But this, I think, we may claim, that if the strength maintained is in excess of India's own requirements, as it is now plainly proved to be, the cost of the excess portion should, as a mere matter of justice, be borne by the Imperial Government. Even on the narrower ground that the Army in India is required for the maintenance of British nile, England, I submit, is as much interested in the maintenance of this rule here as we are, and so it is only fair that a portion of the cost should be borne on the English estimates. If this were done, and if Indians were more widely employed in the public service of the country-more particularly in the special departments-Government will be able to reduce taxation and yet find money for more education, better Provincial finance, active efforts for the industrial development of

1. Special Commission appointed by the Government of India with Sir Ashley Eden as President to inquire into the organisation and expenditure of the Indian Army.

India after the manner of the Japanese Government, and various other schemes of internal reform. Then will Indian finance be really placed on a truly sound basis, and then will our public revenues be administered as those of a poor country like India should be administered. My Lord, your Lordship spoke the other day in terms of striking eloquence of the need there is of Indians now giving up narrow views or limited ideals and feeling for the Empire with Englishmen that new, composite patriotism which the situation demands. Now that is an aspiration which is dear to the heart of many of us also. But the fusion of interest between the two races will have to be much greater, and the people of India allowed a more definite and a more intelligible place in the Empire, before that aspiration is realized. Let Englishmen exercise a certain amount of imagination and put themselves mentally into our place, and they will be able to better appreciate our feeling in the matter. It has been said that a little kindness goes a long way with the people of India. That, I think, is perfectly true. Who, for instance, ever thought of casting a doubt on the loyalty of the Indian Press in the time of Lord Ripon? There was strong language used then as now in the Press, but it was not in the Indian section of it. What, my Lord, is needed is that we should be enabled to feel that we have a Government national in spirit though foreign in personnel-a Government which subordinates all other considerations to the welfare of the Indian people, which resents the indignities offered to Indians abroad as though they were offered to Englishmen, and which endeavours by all means in its power to further the moral and material interests of the people in India and outside India. The statesman who evokes such a feeling among the Indian people will render a great and glorious service to this country and will secure for himself an abiding place in the hearts of our people. Nay, he will do more-he will serve his own country in a true spirit of Imperialism- not the narrower Imperialism which regards the world as though it was made for one race only and looks upon subject races as if they were intended to he mere footstools of that race-but that nobler Imperialism which would enable all who are included in the Empire to share equally in its blessings and honours. My Lord, I have said all this before your Lordship not merely because you happen to be Viceroy of India at the present moment, but also because every one feels that your Lordship is destined for even higher honours and for positions of greater responsibility and influence on your return to your native land. And, if this anticipation is realised, your Lordship will be in a position-even more so than today - to influence the character of the Government of this country in the direction we so ardently desire. In this hope I have spoken to-day, and respectfully trust your Lordship will forgive me if here and there I have spoken with a frankness which may appear to be somewhat unusual, but which, in my humble opinion, is one of the highest forms which true loyalty can take.

BUDGET SPEECH, 1903
Need for Industrial and Educational Advancement

My Lord, Indian finance seems now to be entering upon a new and important phase, and the time has come when Government should take advantage of the comparative freedom, which the country at present enjoys, from the storm and stress of the past eighteen years, to devote its main energies to a vigorous and statesmanlike effort for the promotion of the material and moral interests of the people. Speaking roughly, the first half of the nineteenth century may be said to have been for British rule a period of conquest and annexation and consolidation in this land. The second half has been devoted mainly to the work of bringing up the administrative machine to a high state of efficiency and evolving generally the appliances of civilised government according to Western standards. And I venture to hope that the commencement of the new century will be signalized by a great and comprehensive movement for the industrial and educational advancement of

the people. After all, the question whether India's poverty is increasing or decreasing under the operation of the influences called into existence by British rule - though of great importance in itself - is not nearly so important as the other question as to what measures can and must be taken to secure for this country those moral and material advantages which the Governments of more advanced countries think it their paramount duty to bring within the easy reach of their subjects. My Lord, I have no wish to judge, it is perhaps not quite just to judge, the work done so far in these directions by the British Government in India by the standard of the splendid achievements of countries more fortunately circumstanced and having a more favourable start than ourselves in the field. I admit the exceptional character of our Government and the conflicting nature of the different interests which it has got to weigh before taking any decisive action in this matter. But after so many years of settled government and of unchallenged British supremacy, it is, I humbly submit, incumbent now upon the rulers of this country to gradually drop the exceptional character of their rule and to conform year by year more and more to those advanced notions of the functions of the State which have found such wide, I had almost said, such universal acceptance throughout the Western world. European States, for years past, have been like a number of huge military camps lying by the side of one another. And yet in the case of those countries, the necessity of military preparedness has not come and does not come in the way of each Government doing its utmost in matters of popular education and of national industries and trade. Our record in this respect is so exceedingly meagre and unsatisfactory, even after making allowances for our peculiar situation, that it is almost painful to speak of it along with that of the Western nations, in Europe, America, Japan and Australia, the principle is now fully recognised that one of the most important duties of a Government is to promote the widest possible diffusion of education among its subjects, and this not only on moral but also on economic grounds. Professor Tews of Berlin, in an essay on Popular Education and National Economic Development, thus states his conclusions on the point:

1. " General education is the foundation and necessary antecedent of increased economic activity in all branches of national production in agriculture, small industries, manufactures and commerce. (The ever-increasing differentiation of special and technical education, made necessary by the continual division of labour, must be based upon a general popular education and cannot be successful without it.)

2. The consequence of the increase of popular education is a more equal distribution of the proceeds of labour contributing to the general prosperity, social peace, and the development of all the powers of the nation.

3. The economic and social development of a people, and their participation in the international exchange of commodities, is dependent upon the education of the masses.

4. For these reasons the greatest care for the fostering of all educational institutions is one of the most important national duties of the present."

My Lord, it is essential that the principle enunciated with such lucidity by Professor Tews in the foregoing propositions should be unreservedly accepted in this country as it has been elsewhere, and that a scheme of mass education should now be taken in hand by the Government of India so that in the course of the next twenty-five or thirty years a very appreciable advance in this direction might be secured. It is obvious that an ignorant and illiterate nation can never make any solid progress and must fall back in the race of life. What we therefore want - and want most urgently - is first of all a widespread diffusion of elementary education - an effective and comprehensive system of primary schools for the masses-and the longer this work is delayed, the more insuperable will be our difficulties in gaining for ourselves a recognised position among the nations of the world. My Lord, the

history of educational effort in this country during the last twenty years is sad and disheartening in the extreme. Lord Ripon's Government, which increased the State contribution to education by about 25 per cent, i.e., from 98 lakhs to 134 lakhs between 1880 and 1885, strongly recommended, in passing orders upon the Report of the Education Commission of 1882, that Local Governments and Administrations should make a substantial increase in their grants to Education, and promised special assistance to them from the revenues of the Government of India. But, before the liberal policy thus recommended could be carried out, a situation was developed on the frontiers of India which led to increased military activity and the absorption of all available resources for Army purposes, with the result that practically no additional funds were found for the work of Education. And in 1888 the Government of India actually issued a Resolution stating that, as the duty of Government in regard to Education was that of merely pioneering the way, and as that duty had on the whole been done, the contribution of the State to Education should thereafter have a tendency to decrease. Thus, while in the West the Governments of different countries were adopting one after another a system of compulsory and even free primary education for their subjects, in India alone the Government was anxious to see its paltry contribution to the education of the people steadily reduced ! In the quinquennium from 1885-86 to 1889-90 the State grant to Education rose from 124.3 lakhs to 131.6 lakhs only, i.e., by less than 6 per cent, and this in spite of the fact that the amoumt for the latter year included State expenditure on Education in Upper Burma which the former year did not. Since 1889-90 the advance under the head of Educational expenditure from State funds has been slightly better, but part of this increase since 1893 has been due to the grant of exchange compensation allowance to European officers serving in the Educational Department throughout India. It is only since last year that the Government of India has adopted the policy of making special grants to Education, and I earnestly hope that, as year follows year, not only will these grants be increased, but they will be made a part of the permanent expenditure of the State on Education. In this connection, I would earnestly press upon the attention of Government the necessity of making Education an Imperial charge, so that the same attention which is at present bestowed by the Supreme Government on matters connected with the Army Services and Railway expansion might also be bestowed on the education of our people. Under present arrangements. Education is a Provincial charge, and the Provincial Governments and Administrations have made over Primary Education to local bodies whose resources are fixed and limited. No serious expansion of educational effort is under such arrangements possible. In the Bombay Presidency, for instance, District Local Boards, who have charge of Primary Education in rural areas, derive their revenue from the one-anna cess which they have to devote in certain fixed proportions to Primary Education, Sanitation and Roads. Now, our revenue settlements are fixed for thirty years; which means that the proceeds of the one-anna cess in any given area are also fixed for thirty years; and as Government, as a rule, contributes only one-third of the total expenditure of these Boards on Education, it is clear that the resources that are available at present for the spread of Primary Education in rural areas are absolutely inelastic for long periods. There are altogether about $5\frac{1}{2}$ lakhs of villages in British India, out of which, it has been calculated, four-fifths are at present without a school; the residents of these villages pay the local cesses just like other villagers, and yet the necessary educational facilities for the education of their children are denied them!

India's Educational Backwardness

The position as regards the spread of primary education and the total expenditure incurred in connection with it in different countries is shown in the following table. The figures are taken from the Reports of the United States Commissioner of Education, and are for 1897 or 1898 or 1899 or 1900 as they have been available:

Name of the Country	Population in millions	Total enrolment in Primary Schools in millions	Ratio of enrolment to population	Total expenditure in million of pounds	Expenditure per head of population		Remarks
(1)	(2)	(3)	(4)	(5)	(6)		(7)
Europe					s.	d.	
Austria-Hungary	41.4	6.2	15	5.35	2	6	
Belgium	6.7	0.8	14.5	1.5	4	6	
Denmark	2.2	0.3	14	...	...		
France	33.5	5.5	14.4	8.9*	4	11	
Prussia	34.5	6.3	20	9.2	5	4	
England and Wales	31.7	5.7	17.7	12.1	5	0	
Scotland	4.3	0.7	17	1.6	7	8	
Ireland	4.5	0.8	17.6	1.2	5	5	
Greece	2.5	0.16	6.7	...	...		
Italy	32	2.4	7.3	2.5	1	7	
Norway	2	0.3	16.4	4.5	4	6	
Portugal	5	0.24	4.7	...	...		Figures of expenditure not available
Russia	126.5	3.8	3	41	0	8	State contribution only
Spain	18.2	1.4	7.4	...	...		Figures of expenditure not available
Sweden	5.1	0.74	14.5	1.1	4	2	
Switzerland	3.1	0.65	20.7	1.3	8	5	
ASIA							
India (British)	221.2	3.16	1.4	0.76	0	83	
Japan	42.7	3.3	7.8	2	0	11	
AFRICA							
Cape Colony	1.5	0.15	9.65	0.27	3	6	
Natal	0.54	0.02	4.50	0.06	2	2	
Egypt	9.7	0.21	2.17	...	...		Expenditure figures not available
AMERICA							
United States	75.3	15.3	20.9	44.5	9	10	
Canada	5.2	0.95	18	2	7	9	
AUSTRALASIA	4.3	0.79	18	2.5	11	7	

The figures of expenditure on Higher Education in various countries are also most interesting and instructive:-

Name of the Country	Total amount spent in millions sterling	Expenditure per capital of population
(1)	(2)	(3)
Austria	0.56	6d.
Belgium	0.16	6d.
Denmark	0.06	8d.
France	0.92	6d.
Germany	1.6	7d.
Great Britain and Ireland	1.7	11d.
Greece	0.02	2d.
Italy	0.46	$3\frac{1}{2}$d.
Norway	0.04	4d.
Russia	0.95	2d.
Spain	0.1	11d.
Sweden	0.14	$6\frac{1}{2}$d.
Switzerland	0.14	11d.
United States	3.5	11d.
Canada	21	10d.
Australasia	13	3d.
India	28	$\frac{1}{2}$d

Except in England, the greater part of the cost of higher education, about three-fourths and in some cases even more, is met every - where out of the funds of the State.

My Lord, even allowing for the difference in the purchasing power of money in this country and elsewhere, these figures tell a most melancholy tale, and show how hopelessly behind every other civilised nation on the face of the earth we are in the matter of public education. It is sad to think that, after a hundred years of British rule, things with us should be no better than this, and, unless the work is taken up with greater confidence and greater enthusiasm, there is small hope of any real improvement in the situation taking place. In other countries, national education is held to be one of the most solemn duties of the State, and no effort or money is spared to secure for the rising generations the best equipment possible for the business of life. Here, it has so far been a more or less neglected branch of State duty, relegated to a subordinate position in the general scheme of State action. Now that an era of substantial surpluses has set in, Government will not find themselves debarred from taking up the work in right earnest by financial difficulties. In this connection, I respectfully desire to make one suggestion - viz., that henceforth, whenever there is a surplus, it should be appropriated to the work of promoting the educational and industrial interests of the country. At present these surpluses go to reduce the amount of our debt, but, as the Hon'ble Sir Edward Law has pointed out in the Financial Statement, our burden of debt is by no means heavy, and there are valuable assets on the other side to cover the whole of it. Surpluses, after all, mean so much more taken from the people than is necessary for the purposes of the administration, and I think it is most unfair that these surplus revenues should be devoted to the reduction of a debt which is not at all excessive, when questions concerning the deepest welfare of the community and requiring to be taken in hand without any delay are put aside on the ground of want of funds. We have seen that the surpluses during the last five years have amounted to over 22 crores of rupees. If this vast sum had been set

apart for the promotion of our educational and industrial interests instead of being needlessly devoted to a reduction of debt, what splendid results the Government would have been able to show in the course of a few years ! My Lord, the question of expenditure lies really at the root of the whole educational problem. The country has recently been agitated over the recommendations of the Universities Commission appointed by your Excellency's Government last year. I do not desire to say anything on the present occasion on the subject of University reform, but it strikes me that if Government made its own institutions really model ones by bringing up their equipment to the highest standard and manning them only with the best men that can be procured both here and in England, the private colleges would necessarily find themselves driven to raise their own standard of equipment and efficiency. And if a number of post-graduate research scholarships were established by Government to encourage life-long devotion to higher studies the whole level of higher education in the country will be raised in a manner satisfactory to all. I think it is, absolutely necessary that men whom the Government appoints to chairs in its own colleges should set to their students the example of single-minded devotion to learning and should, moreover, by their tact and sympathy and inborn capacity to influence young men for good, leave on their minds an impression which will endure through life. Only such Englishmen as fulfil these conditions should be brought out, and I would even pay them higher salaries than at present if the latter are found-to be insufficient to attract the very best men. They should further be not young men who have just taken their degree, but men of some years' educational standing, who have done good work in their subjects. My Lord, it is difficult to describe in adequate terms the mischief that is done to the best interests of the country and of British rule by the appointment of third- or fourth-rate Englishmen to chairs in Government colleges. These men are unable to command that respect from their students which they think to be due to their position, and then they make up for it by clothing themselves with race pride, which naturally irritates the young men under them. The result often is that young students leave college with a feeling of bitterness against Englishmen, and this feeling they carry with them into later life. On the other hand, the influence which a first class Englishman who knows how to combine sympathy with authority exercises upon his pupils, shapes their thoughts and feelings and aspirations throughout life, and they continue to look up to him for light and guidance even when their immediate connection with him has come to an end.

My Lord, the question of technical instruction has often been discussed during the past few years in this country, and some time ago your Excellency was pleased to ask if those who so often spoke about it had any definite proposals of their own to make. I do not, however, see how such a responsibility can be sought to be imposed upon our shoulders. Government have command of vast resources, and they can procure without difficulty the required expert advice on the subject. If a small Commission of competent Englishmen and Indians, who feel a genuine enthusiasm for technical education, were deputed to those countries where so much is being actually done by their Governments for the technical instruction of their people to study the question on the spot, in a year or two a workable scheme would be forthcoming, and with the large surpluses which the Hon'ble Finance Member is now able to announce year after year, a beginning could almost at once be made, and actual experience would suggest the rest.

BUDGET SPEECH, 1906

(6) I now come to the question of Primary Education. From Mr. Nathan's[1] Raport on Education, we find that, in 1901-02, the total expenditure on the primary education of boys in India from the funds of the State was the staggeringly small sum of $13\frac{1}{3}$ lakhs! Since then the amount has been increased, but even so it remains most miserably inadequate, compared with the requirements of the situation. My Lord, the question of mass education in this country has been neglected much too long, and the Government must lose no more time in waking up to its responsibilities in the matter. What is needed is a clear aim, and a resolute pursuit of that aim in a feeling of faith and with enthusiasm tor the cause. The first step is to make primary education free in all schools throughout the country, and that can be done at once. The total receipts from fees in primary schools throughout India in 1901-1902 were only $30\frac{1}{2}$ lakhs of rupees, so the sacrifice will not be very great. Moreover, the larger Municipal Corporations might be asked to bear a portion of this loss, so far as their own areas are concerned. The next step will be to make this education compulsory for boys in the Presidency towns, and perhaps in a few other leading towns. When the minds of the people have been accustomed to the idea of compulsion in the matter of education, the area of compulsion may be gradually extended, till at last, in the course of twenty years or so from now, we have in our midst a system of compulsory and free primary education throughout the country, and that for both boys and girls. It will not do to be deterred by the difficulties of the task. Our whole future depends upon its accomplishment, and as long as the Government continues listless in the matter, it will justly be open to the reproach of failing in one of its most sacred duties to the people.

BUDGET SPEECH, 1907
(iv) Beginning of Free Primary Education

I now come to what is in some respects the most gratifying feature of the present budget - I mean the statement which the Hon'ble Member makes on the subject of Free Primary Education. The statement is brief, but it says enough to indicate clearly the resolute purpose that lies behind it. My Lord, the whole country has reason to feel grateful to your Lordship's Government for taking up this question in' this earnest spirit. The circular letter of November last and this paragraph in the Financial Statement, taken together, leave no doubt in my mind that before the budget for next year is presented, primary education will have been made free throughout India; for I cannot imagine any Local Government standing in the way of the adoption of this measure, since the Government of India is going to find all the money required for it. I am sure we owe much in this matter to the Hon'ble Mr. Baker's active support of the cause. I cannot help recalling that last year when this question was raised in this Council, my Hon'ble friend expressed his sympathy With the proposal in most cordial terms.

"I have," he said, "the keenest sympathy with every one of the objects on which the Hon'ble Member desires to see public money expended. In particular, I am greatly interested in his proposal for making, primary education free with the intention of ultimately making it compulsory. I hope and believe that some great scheme of this nature will eventually ba carried into execution."

This was in marked contrast to the reception which the appeal met with at the hands of another member of Government, who, by what must now be described as an irony of fate, then presided over our Education Department and who was therefore

1. Robert Nathan, i.c.s, Educational Commissioner with the Government of India.

the responsible spokesman on behalf of the Government on the subject. Sir Arundel Arundel[1] expressed himself in the matter thus :-

I understand the Hon'ble Mr. Gokhale to advocate universal free primary education throughout India, That would be a large order.

And the utmost that he could bring himself to promise was that the aspiration for free primary education would be "kept in view as the distant peak to be one day attained while the work of the present must be slow progress along the plain." What was, however, 'a large order' in March became a very reasonable order in November, so reasonable indeed that the circular letter addressed to Local Governments on the subject showed unequivocally that the Government of India had already made up its mind to adopt the measure. The incident - serves only to emphasise the necessity of entrusting the Educational portfolio to such members as feel some enthusiasm for the subject. My Lord, now that the Government has advanced as far as free primary education, I earnestly trust that no long interval will be allowed to elapse before the next step is taken, viz., that of making a beginning in the direction of compulsory education. If His Highness the Gaekwar of Baroda[1] has found it practicable to make primary education compulsory in his State, I cannot understand why the British Government should not be able to overcome the difficulties that lie in its path. The best plan, as I urged last year, would be to confer powers, in the first instance, on Municipal Corporations in cities with a population of, say, a hundred thousand and over, to introduce compulsion for boys within their areas, the Government of India finding the funds required. The area of compulsion may then gradually be extended, till at last in twenty years or so, primary education should be compulsory in the country for both boys and girls. My Lord, we are already so far behind other civilised nations in this matter that no further time should be lost in making such a beginning. As an eminent German Professor points out, no real economic or social development of a people is possible without the education of the masses. Such education is "the foundation and necessary antecedent of increased economic activity in all branches of national production, in agriculture, small industries, manufactures and commerce;" it leads to a more equal distribution of the proceeds of labour; and it ensures a higher level of intelligence and a larger capacity for achieving social advance among the people. It is impossible to overestimate the importance of this question in the present state of India.

Financial Discussion, 1911-12
FEES IN PRIMARY SCHOOLS

[In the course of the discussion on the Financial Statement, Mr. Mazhar-ul-Haque[1] made a motion that the grants to Local Governments be increased by such an amount as will enable them to remit the fees payable in Primary Schools for the coming year. Speaking on the motion, Gokhale made the following observations:]

Sir, I wish to offer a few observations on the resolution which my Hon'ble friend Mr. Haque has moved. Sir, personally I do not wish to press the question of the remission of fees at this time of day. I may mention that I used to raise this question in this Council year after year for several years, and that the resolution of the Government, to which my Hon'ble friend referred today, was issued after a discussion in this Council initiated by myself. However, in view of the expressions

1 Member, Viceroy's Executive Council, 1901-05.

1. *Maharaja Sayaji Rao Gaikwad,* Ruler of Baroda State, (1863-1938). His State took the lead in the whole country in introducing compulsory primary education, first as an experimental measure, in Amreli District (1893) and later extending it to the whole State (1906); the separation of judicial and executive functions was another important reform carried out by him.

1. see foot-note on p. 192.

of opinion that have come from several Local Governments, it is necessary to consider how far the Government is likely to remit fees and make education free at once. Of course, no one will rejoice more than I if Government is able to remit fees and make education free. It is a matter of 32 lakhs a year to begin with-this remission of fees; and if the Government so choose, they can do it. This would mean making it free first and compulsory afterwards, or it might be made compulsory first and free afterwards, whichever way we begin; we have all to advance towards the same goal, namely, free and compulsory education for all the children in this country. I hope to introduce in this Council in a few days, if Government will permit me, a Bill to empower municipalities and local boards to make primary education compulsory within their areas. The Government have given a large non-recurring grant to primary education for next year. I wish the Government had at the same time given a recurring grant to primary education to be distributed among the provinces. A non-recurring grant, without a recurring grant to support it, is likely to be largely thrown away; it will be spent on school buildings or it may be spent on buildings for training institutions; usefully spent, no doubt; but in order to make it really effective, it is necessary to supplement it with a recurring grant. It may be that, as the Department of Education has been only recently created, it is not yet ready with its programme and so the question of a recurring grant has been simply postponed, and possibly the Finance Department may be able to find money later. If that is so, I have nothing more to say; but if there is no intention to find money for recurring purposes during this year, and if the Education Department is expected to wait till next year, then t would respectfully urge that it should not be so and that some provision should be made in the budget for next year for a recurring grant for primary education.

(The resolution was rejected.)

INCREASE IN PUBLIC EXPENDITURE

[The Imperial Legislative Council met on Wednesday, the 25th January 1911. Lord Hardinge, the Viceroy, presided. Gokhale moved a resolution calling for an inquiry into the causes which had led to great increase in public expenditure. In moving this resolution, Gokhale made the following speech:]

My Lord, I rise to move that

This Council recommends to the Governor-General in Council that the Government should order, a public inquiry by a mixed body of officials and non-officials into the causes which have led to the great increase in public expenditure, both Civil and Military, that has taken place curing recent years, so that means may be devised for the greater enforcement of economy, where necessary and practicable.

Spirit of Economy in place of Spirit of Expenditure

My Lord, I will now state what, in my opinion, are the remedies which the situation requires. My proposals are four in number, and they are these: In the first place, what Mr. Gladstone used to call the spirit of expenditure, which has been abroad in this country for a great many years, and especially during the seven years between 1901-03 to 1908-09, should now be chained and controlled, and in its place, the spirit of economy should be installed. If the Government would issue orders to all Departments, as Lord Dufferin did, to enforce rigorous economy in every direction and to keep down the level of expenditure, especially avoidable expenditure, I think a good deal might be done. Lord Dufferin's Government wanted money for military preparations. I earnestly hope that your Lordship's Government will want to find money for extending education in all directions. In any case, the need for strict economy is there, and I trust that Government will issue instructions to all their

Departments to keep down administrative charges as far as possible. That is my first suggestion. In this connection I may add this. Care must now be taken never again to allow the normal rate of growth of expenditure to go beyond the normal rate of growth of revenue. Indeed it must be kept well within the limits of the latter, if we are not to disregard the ordinary requirements of solvent finance. If special expenditure is wanted for special purposes, as may happen in the case of an invasion or similar trouble, special taxation must be imposed, and we shall be prepared to face the situation and support the Government in doing so. But in ordinary circumstances, the normal rate of growth of expenditure must not exceed and should be well within the normal rate of growth of revenue.

Four Reasons for Demand for Inquiry

My Lord, I have done. I want this inquiry to be undertaken for four reasons. In the first place, this phenomenal increase in expenditure demands an investigation on its own account. Economy is necessary in every country, but more than anywhere else is it necessary in India. Certain observations, which were made by Lord Mayo forty years ago on this point, may well be recalled even at this distance of time. In speaking of the Army expenditure, he said in effect that even a single shilling taken from the people of India and spent unnecessarily on the Army was a crime against the people, who needed it for their moral and material development. Secondly, my Lord, expenditure must be strictly and rigorously kept down now, because we are at a serious juncture in the history of our finance. Our Opium revenue is threatened with extinction. Thirdly, I think we are on the eve of a large measure of financial decentralisation to Provincial Governments, and it seems certain that those Governments will be given larger powers over their own finances. If, however, this is to be done, there must first of all be a careful inquiry into the present level of their expenditure. That level must be reduced to what is fair and reasonable before they are started on their new career. Last, but not least, we are now entertaining the hope that we are now on the eve of a great expansion of educational effort-primary, technical and agricultural, in fact, in all directions. My Lord, I am expressing only the feeling of my countrymen throughout India when I say that we are earnestly looking forward to the next five years as a period of striking educational advance for this country. Now, if this advance is to be effected, very large funds will be required, and it is necessary that the Government of India should, first of ail, examine their own position and find out what proportion of their present revenues can be spared for the purpose. My Lord, these objects- education, sanitation, relief of agricultural indebtedness-are of such paramount importance to the country that I, for one, shall not shrink from advocating additional taxation to meet their demands, if that is found to be necessary. But before such additional taxation can be proposed by Government, or can be supported by non-official members, it is necessary to find out what margin can be provided out of existing resources. This is a duty which the Government owes to the country; and the representatives of the taxpayers in this Council owe it to those, on whose behalf they are here, to urge this upon the Government. It is on this account that I have raised this question before the Council today, and I earnestly trust the Government will consider my proposals in the spirit in which they have been brought forward. My Lord, I move the Resolution which stands in my name.

Welby Commission Evidence GOKHALE'S WRITTEN EVIDENCE April 12th and 13th, 1897

Education

Here, too, a large increase of expenditure is necessary if Government desires to discharge its duties adequately by the people. The charge under the head of education at present is about twenty

lakhs, of which three lakhs are consumed by direction and inspection. Our *percentages are, no doubt,* slightly better than those for the whole of India, but that is hardly a matter for congratulation, seeing that what is being done is almost as nothing compared with what ought to be done. So long as we have only 9,000 public primary schools for over 25,000 towns and villages, and about 80 children out of every 100 of school-going age are growing up in utter darkness, so long the educational policy of the Government will always be a reproach to it.

In this connection there is one point to which I am anxious to draw the particular attention of the Commission. That point is the absolutely inelastic character of the financial provision which is made for primary education in rural areas. In these areas primary education is now entrusted to Local Boards, Government contenting itself with a grant-in-aid to these Boards of one-third the total expenditure. Now the only revenue that these Boards have at their disposal is the proceeds of the one-anna cess, and these proceeds are devoted in certain fixed proportions to primary education, sanitation, and roads. As our revenue settlements are for periods of thirty years, it follows that during these periods the proceeds of the one-anna cess must be more or less stationary -which means that the amount that Local Boards can devote to primary education, being a fixed proportion of those proceeds, must also remain more or less stationary during the currency of each period of settlement. And as Government will, as a rule, contribute only one-third of the whole expenditure, i.e., one-half the amount spent by the Boards, it is clear that, the resources that are available for the spread of primary education are entirely inelastic for long periods. I believe Sir James Peile[1] had proposed, when he was Director of Public Instruction in Bombay, that local bodies should be empowered to levy special educational cesses, if they pleased. In the absence of Government finding more money for the education of the masses-a duty definitely accepted as a sacred trust - this seems to be the only possible solution of the difficulty.

Welby Commission
WRITTEN EVIDENCE (p.493)
Education

The meagreness of the Government assistance to public education in India is one of the gravest blots on the administration of Indian expenditure. No words can be too strong in condemning this neglect of what was solemnly accepted by the Court of Directors in 1854 as a sacred duty. During the last four or five years the Government grant to education has been absolutely stationary. In 1891-92 it was Rs. 88,91,73; in 1894-95 it was Rs. 91,09,72 showing an increase of only Rs. 3,18,000 in four years. But even the increase was only an addition to the salaries of European officials in the Department in the shape of exchange compensation allowance, as may be seen from the fact that, while there was no charge for this allowance in 1891-92, in 1894-95 the compensation to educational officers was Rs. 1,88,000. Side by side with this might be noted another fact, viz., that during these same four years the Government expenditure on public education in Great Britain and Ireland increased from five millions to nearly nine millions sterling, and the contrast is too powerful to need any comments. One cannot help thinking that it is all the difference between children and step-children. There are more than 537,000 towns and villages in India, with a total population of about 230 millions, and yet there are less than a hundred thousand public primary schools for them. The population of school-going age in India is about 35 millions, out of whom only about 4 millions, including those attending private or unaided

1. Sir James Braithwaite Peile, i.c.s., (1833-1906); Director of Public Instruction, Bombay (1869-73); Political Agent in Kathiawar (1873-78); member, Famine Commission (1878-80); member, Bombay executive council (1883-86); Vice-Chancellor, Bombay University (1884-86); member, Viceroy's executive council (1886-87); member, India Council (1887-1902); member, Welby Commission (1895-1900).

schools, are under instruction, which means that out of every 100 children of school-going age 88 are growing up in darkness and ignorance, and consequent moral helplessness. Comment on these figures is really superfluous.

I may add that in 1888 the Government of Lord Dufferin issued a resolution which amounted to a virtual change of policy in the matter of education. Only four years before that Lord Ripon had issued a resolution, addressed to all Local Governments, urging them to increase their expenditure on education, and even offering assistance from the Imperial Exchequer, where absolutely necessary. In 1888, however. Lord Dufferin directed the Local Governments in express terms to gradually reduce the share contributed by Government to public education.

LABOUR IN INDIAN FACTORIES

[A Bill to consolidate and amend the law regulating labour in Factories, based on the report of the Factories Commission of 1908, was introduced in July 1909 and published for eliciting public opinion. It was referred to a Select Committee on 3rd January 1911. The report of the Select Committee was submitted on 81st January 1911, and the Bill, as amended by the Select Committee, was taken into consideration at a meeting of the Council on 21st March 1911, Mr. J. L. Jenkins, the Vice-President, presiding, Gokhale moved an amendment to clause 23, making it obligatory on every factory, employing more than twenty children, to maintain an elementary school and provide them with free and compulsory instruction. In support of his amendment he spoke as follows:]

Sir, I beg to move:
That to clause 23 of the Bill as amended by the Select Committee, the following sub-clause be added:

(1) Every factory, in which more than twenty children between the ages of nine and twelve are employed, shall maintain an elementary school in proper condition for their benefit, and attendance at such school for not less than three hours every working day shall be compulsory in the case of each child so employed.

(2) No fees shall be charged for the instruction given in such school. Sir, I urge this amendment on the broad grounds of justice and humanity. The plea of justice is based on three considerations. In the first place, the very fact of the employment of these children in these factories disables them from availing themselves of the ordinary facilities that exist for receiving instruction at school. They have to be in the factories for certain stated hours and therefore they cannot suit themselves to the hours during which they can receive instruction in ordinary schools. Secondly, under what is known as the split shift system, their presence in the factories is not confined to the actual hours during which they have to work; but they are expected to be about the factories, on the premises or somewhere near by, because their work is divided into two parts and they have to do part of the work in the morning and the other part in the afternoon. Therefore, the total time for which they must be present in or near the factories is really much longer than the actual period for which they have to work. And thirdly, the parents of most of these children are employed in the factories, and being so employed they are prevented from exercising that supervision over their children which ordinarily they might be expected to exercise. Therefore, Sir, on these three grounds of justice, I urge that the factory-owners should be made responsible for the education of these children. This is only fair, because the factory-owners make money out of the children, make money also out of the children's parents, and further, work in their employ makes it impossible for the children's parents to exercise that supervision over the education and other interests of the children which they might otherwise have exercised.

Then, Sir, I urge my proposal on the ground of humanity. The sole justification for a measure like this is its humanity, and humane considerations must apply most to that section of the labouring population which is least able to take care of itself. Now, children are obviously the least able to take care of themselves, and therefore, if humane considerations are to apply anywhere and the State is to extend its protection on humane grounds to any section of the labour population, that ought to be in the case of children. If the children are to be left to themselves, if after six or seven hours' work has been exacted from them they are to be turned into the street, there to get into the ways of mischief-without anybody to look after them, their parents being engaged in the factories-then I say the humanity on which the State bases itself in introducing this legislation is not extended to the children.

Factory-Owner's Responsibility to educate Factory Children

I think, therefore, Sir, that some provision ought to be made for the education of the children employed in factories, after they have performed their work. The half-timers are between the ages of 9 and 14; I am quite willing that the provision to be made should be for children, between the ages of 9 and 12 only. Of course, it is true, as the last Factory Commission[1] has pointed out, that there is no compulsory education for anybody in this country. It is also true that the Commission has expressed itself against compulsory provision for the education of factory children; but even so, the Commission has recommended very strongly that something should be done to ensure the education of these children and that local bodies and the Government and the factory-owners should all concert measures together for the purpose. The earlier Factory Commission,[2] however-that of 1890 - is emphatic in its recommendation that provision ought to be made for the education of the factory children, and I prefer its recommendation to that of the later Factory Commission. This is what the earlier Factory Commission, which first provided that children should be employed as half-timers only, recommended:

If our suggestion that children should be employed as half-timers is adopted, it will be found most important to provide some means of instruction during two or three of the spare hours that the children are off work. It is not for us to discuss here the advantages of elementary education, and general control and supervision of the rising generation of operatives. Thase are too obvious to require any advocacy from us. What we would say is that Local Governments and municipalities should meet mill-owners half-way and, as is done in regard to children under other circumstances, contribute half the cost of teaching factory children. Supposing, for instance, that a mill, employing 100 children, spends 16 rupees a month for two teachers; the Municipality or Government should double this subscription and provide two or more teachers. Looking at it from a pecuniary point of view, the expenditure is so trifling that we cannot doubt that schools would be started without delay in connection with all mills employing a large number of children. It was not to be expected that schools started under the present circumstances could be a success. For it is impossible that a tired and jaded child (there was no class of half-timers before 1890) can work his brain to any useful purpose after his body has been thoroughly worn out with physical exertion.

1. The Indian Factory Labour Commission appointed by the Secretary of State for India with Mr. W. T. Morison as President (1908). Sir Vithaldas Thackersey served on the Commission as a representative of the Bombay Chamber of Commerce and the Bombay Millowners' Association, and appended a dissenting minute to the report of the Commission,

2. The Indian Factory Commission appointed by the Government of India with Surgeon-Major A. S. Lethbridge as Chairman (1890). The other members were Raja Piyare Mohan Mukharji, Mr. Sorabjee S. Bengallee and Mir Muhammad Hussain.

Then, Sir, our friend, the Hon'ble Mr. Fremantle,[1] in a very interesting report which he submitted some time ago to the Government of the United Provinces on the condition of labour in Upper India, takes up this question and makes a very strong recommendation. I think he puts the case so well that I cannot do better than read to the Council what he says:

The first step," says Mr. Fremantle, "is to compel observance of the law as to the employment of children. When the children are really employed for only half the day, their parents will, as a rule, be only too pleased that they should be under instruction for part of the rest of the time. The schools might be maintained by the mill-managers on their premises and partly supported by grants-in-aid. With proper inspection, there should be no risk of the instruction given being insufficient. Later, if the school became popular, it might be possible to provide by law that no boy or girl under 14 should be employed in a mill unless he or she were under instruction. If this were the law, it would not be the first attempt at compulsory education in India. The Gaekwar[3] has introduced it in parts of the Baroda State, " (so it is not only I who refer to the analogy of what the Gaekwar has done; sometimes officials also do the same thing;) "and the East Indian Railway Company in their fine estate of Giridh

2. see foot-note on p, 121. [The said footnote reads: *Maharaja Sayaji Rao Gaikwad,* Ruler of Baroda State, (1863-1938). His State took the lead in the whole country in introducing compulsory primary education, first as an experimental measure, in Amreli District (1893) and later extending it to the whole State (1906); the separation of judicial and executive functions was another important reform carried out by him.

enforce attendance at school with excellent results. In Ceylon "(here, again, we have an official mentioning the example of Ceylon) " wherever there are Government schools, education is compulsory, and the Commission on Elementary Education1 which sat recently recommended that planters should be held responsible for the instruction of the children of their Tamil coolies. Managers of mills and factories in Upper India have never yet had their attention specially directed to this matter, and it is quite time that a beginning were made."

What Mr. Fremantle says about managers in Upper India applies equally to managers all over the country. Sir, it is true that on the Bombay side some of the mills have made attempts to provide educational facilities for the children employed in those mills; but the last Commission has come to the conclusion that these facilities were not efficiently provided, and very often they were only a thin disguise for keeping the children on the premises in order that they might be worked more than half time. One essential condition, therefore, in connection with any educational facilities offered is that there must be efficient supervision, and that supervision must be provided, by the Education Department or whatever body it is that inspects and supervises local schools. But I think. Sir, the first thing to do in this matter is to throw a definite responsibility on factory- owners. It is not an unfair thing to expect, as I have pointed out, that the factory-owners, who make money out of the children, should hold themselves responsible for the education of those children. Of course, it is only fair that the Government and the local bodies should, come to the assistance of the factory-owners; the cost may be divided among the three bodies-the factory-owners, the local body concerned and the Government-in such proportions as may appear to be most equitable; but somebody must first be made responsible for the education of these children, and I think it should be the factory-owners. Even though there is no general compulsory law in India, it is necessary that there should be special provision for factory children for the simple reason that these children are disabled from availing themselves of the ordinary facilities that exist. I therefore trust that the amendment which I have moved will be accepted by this Council.

1. S.H. Fremantle, i, c. s,, was placed on special duty by the U. P. Government in 1905 and asked to inquire into "the shortage of labour in various industries and localities". His report was submitted to Government early in 1905.

THE ELEMENTARY EDUCATION BILL

Gopal Krishna Gokhale

The Hon'ble Mr. Gokhale said: "My Lord, I rise to ask for leave to introduce a Bill to make better provision for the extension of elementary education throughout India. Hon'ble Members will recollect that about this time last year, the Council considered a resolution which I had ventured to submit to its judgment, recommending that elementary education should gradually made compulsory and free throughout the country, and that a mixed Commission of officials and non-otficials should be appointed to frame definite proposals. In the debate, which ensued on the occasion, fifteen Members, including the Home Member, the Home Secretary and the Director General of Education, took part. There was then no separate portfolio of Education, and educational interests rubbed shoulders with jails and the police, in the all-comprehensive charge of the Home Department. In the end, on an assurance being given by the Home Member that the whole question would be carefully examined by the Government, the resolution was withdrawn. Twelve months, my Lord, have elapsed since then, and the progress which the question has made during the interval has not been altogether disappointing. In one important particular, indeed, events have moved faster than I had ventured to hope or suggest. One of the proposals urged by me on the Govemmeut last year was that Education should, to begin with, have a separate Secretary, and that eventually there should be a separate Member for Education in the Governor General's. Executive Council. The Government, however, have given us at one bound a fullfledged Department of Education, and the Hon'ble Mr. Butler has already been placed in charge of it. My Lord, the Hon'ble Member's appointment to the new office has been received with general satisfaction, and it is recognised on all sides that he brings to his task a reputation for great practical capacity. What I value, however, even more than his practical capacity, is the fact that the Indian sun has not dried the Hon'ble Member and that he has not yet shed those enthusiasms with which perhaps we all start in life, and without which no high task for the improvement of humanity has ever been undertaken. I think, my Lord, the creation of a separate portfolio for Education brings us sensibly nearer the time when elementary education shall be universal throughout India. That there is a strong demand for this in the country-a demand, moreover, daily growing stronger-may be gathered from the fact that, since last year's debate, the question has been kept well to the fore by the Indian Press, and that last December resolutions in favour of compulsory and free primary education were passed not only by the Indian National Congress at Allahabad, but also by the Moslem League, which held its sittings at Nagpur. On the Government side, too, the declaration made in the House of Commons last July by the Under Secretary of State for India that one of the objects of the creation of the new Education Department was to spread education, throughout the country, the significant language employed by Your Lordship on the subject of education in your reply to the Congress address at the beginning of this year, and the Educational Conference, summoned by the Hon'ble Mr. Butler last month at Allahabad-all point to the fact that the Government are alive to the, necessity of moving faster and that it will not be long before vigorous measures are taken in hand to ensure a more rapid spread of mass education in the land The present thus is a singularly favourable juncture for submitting to the Council and the country the desirability of a forward move, such as my Bill proposes, and I earnestly trust the Council will not withhold from me the leave I ask to introduce, the Bill.

"My Lord, I expect the Government have now concluded their examination of my proposals of last year, and perhaps the Hon'ble Member will

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Extracts from "The Elementary Education Bill, The Hon. Mr. G.K. Gokhale's Speech and The Debate Thereon", Poona, 1911. Printed at Arya Bhushan Press.

tell us to-day what conclusions have been arrived at. The part of the scheme to which I attached the greatest importance was that relating to the gradual introduction of the principle of compulsion into the system of elementary education in the country, and that put is now embodied in the Bill which I wish to introduce to-day. My Lord, an American legislator, addressing his countrymen more than half a century ago, once said that if he had the Archangel's trump, the blast of which could startle the living, of all nations, he would sound it in their ears and say: 'Educate your children, educate all your children, educate every one of your children.' The deep wisdom and passionate humanity of this aspiration is now generally recognised, and in almost every civilised country, the State to-day accepts the education of the children as a primary duty resting upon it. Even if the advantages of an elementary education be put no higher than a capacity to read and write, its universal diffusion is a matter of prime importance, for literacy is better than illiteracy any day, and the banishment of a whole people's illiteracy is no mean achievement. But elementary education for the mass of the people means something more than a mere capacity to read and write. It means for them a keener enjoyment of life and a more refined standard of living. It means the greater moral and economic efficiency of the individual. It means a higher level of intelligence for the whole community generally. He who reckons these advantages lightly may as well doubt the virtue of light or fresh air in the economy of human health. I think it is not unfair to say that one important test of the solicitude of a Government for the true wellbeing of its people is the extent to which, and the manner in which, it seek to discharge its duty, in the matter of mass education. And judged by this test, the Government of this country must wake up to its responsibilities much more than it has hitherto done, before it can take its proper place among the civilised Governments of the world. Whether we consider the extent of literacy among the population, or the proportion of those actually at school, or the system of education adopted, or the amount of money expended on primary education, India is far, far behind other civilised countries. Take literacy. While in India, according to the figures of the census of 1901, less than 6 per cent of the whole population could read and write, even in Russia, the most backward of European countries educationally, the proportion of literates at the last census was about 25 per cent, while in many European countries, as also the United States of America, and Canada and Australia, almost the entire population is now able to read and write. As regards attendance at school, I think it will be well to quote once more the statistics which I mentioned in moving my resolution of last year. They are as follows :- 'In the United States of America, 21 per cent of the whole population is receiving elementary education; in Canada, in Australia, in Switzerland, and in Great Britian and Ireland, the proportion ranges from 20 to 17 per cent; in Germany, in Austria-Hungary, in Norway and in the Netherlands the proportion is from 17 to 15 per cent; in France it is slightly above 14 per cent; in Sweden it is 14 per cent; in Denmark it is 13 per cent; in Belgium it is 12 per cent; in Japan it is 11 per cent; in Italy, Greece and Spain it ranges between 8 and 9 per cent; in Portugal and Russia it is between 4 and 5 per cent; whereas in British India it is only 1.9 per cent.' Turning next to the systems of education adopted in different countries, we find that while in most of them elementary education is both compulsory and free, and in a few, though the principle of compulsion is not strictly enforced or has not yet been introduced, it is either wholly or for the most part gratuitous, in India alone it is neither compulsory nor free. Thus in Great Britian and Ireland, France, Germany, Switzerland, Austria-Hungary, Italy, Belgium, Demark, Norway, Sweden, the United States of America, Canada, Australia and Japan, it is both compulsory and free, the period of compulsion being generally six years, though in some of the American States it is now as long as nine years. In Holland, elementary education is compulsory,

but not free. In Spain, Portugal, Greece, Bulgaria, Servia and Roumania, it is free, and, in theory, compulsory, though compulsion is not strictly enforced. In Turkey, too, it is free and nominally compulsory, and in Russia, though compulsion has not yet been introduced, it is for the most part gratuitous. Lastly, it we take the expenditure on elementary education in different countries per head of the population, even allowing for different money values in different countries, we find that India is simply nowhere in the comparison. The expenditure per head of the population is highest in the United States, being no less than 16s.; in Switzerland, it is 13s. 8d. per head; in Australia, 11s. 3d.; in England and Wales, 10s.; in Canada, 9s. 8d.; in Scotland, 9s. $7\frac{1}{2}$d; in Germany, 6s. 10d.; in Ireland, 6s. 5d.; in the Netherlands, 8s. $4\frac{1}{2}$d.; in Sweden, 5s. 7d.; in Belgium, 5s. 4d.; in Norway, 5s. 1d.; in France, 4s. 10d.; in Austria, 3s. $1\frac{1}{2}$d.; in Spain, 1s. $7\frac{1}{2}$d.; in Servia and Japan 1s. 2d.; in Russia. $7\frac{1}{2}$d.; while, in India, it is barely one penny.

My Lord, it may be urged, and with some show of reason, that as mass education is essentially a Western idea, and India has not been under Western influences for more than a century, it is not fair to compare the progress made by her with the achievements of Western nations in that field. I am not sure that there is really much in this view, for even in most Western countries, mass education is a comparatively recent development, and even in the East, we have before us the example of Japan, which came under influence of the West less than half a century ago, and has already successfully adopted a system of universal education. Assuming, however, for the sake of argument, that it is not fair to compare India with Western countries in this matter, no such objection can, I believe, be urged against a comparison of Indian progress with that made in the Philippines, or Ceylon, or Baroda. The Philippines came under American rule only thirteen years ago, it cannot be said that its natural intelligence or desire for education, the Filipinos are superioir to the people of India; and yet the progress in mass education made in the Islands during this short period has been so great that it constitutes a remarkable tribute to the energy and enthusiasm of American ideals. Under Spanish rule, there was no system of popular education in the Philippines. As soon as the Islands passed into the possession of the United States, a regular programme of primary education came to be planned and has been steadily adhered to. The aim is to make primary, education universal. Instruction is free, and the education authorities advise compulsion, though no compulsery law has yet been enacted. So great, however, is the enthusiasm that has been aroused in the matter that many Municipalities have introduced compulsion by local ordinances. And though there is room for doubt if the ordinances are strictly legal, no question has been raised, and the people are acquiescing cheerfully in their enforcement. How rapidly things are advancing in the Philippines may be judged by the fact that in five years-from 1903 to 1908-the number of pupils attending school more than doubled itself, having risen from 150,000 to 360,000. The proportion of children receiving instruction to the whole population of the Mends is now nearly 6 per cent, as against 2 in British India.

"The conditions of Ceylon approximate closely to those of Southern India, and the fact that it is directly administered by England as a Crown colony need not make any difference in its favour. In regard to mass education, however, Ceylon is far ahead to-day of India. Elementary instruction in Ceylon is imparted by two classes of schools, Government and Aided, the Government schools covering about one-third, and the Aided schools two-thirds of the area. In Government schools, a system of compulsory attendance has long been in force, the defaulting

parent being brought by the teacher before a Village Tribunal, who can inflict small fines. In 1901, a Committee was appointed by the Government to advise what steps should be taken to extend primary education in the Island, and the Committee strongly recommended 'that Government should take steps to compel parents to give their children a good vernacular education.' Again, in 1905, a Commission was appointed to make further enquiries into the matter, and the recommendations of this body were accepted in the main by the Colonial Secretary. These recommendations were: (1) That attendance at school should be compulsory for boys during a period of six years in areas proclaimed by the Governor; (2) that no fees should be charged; (3) that girls' education should be pushed on vigorously; (4) that district and Divisional Committees should be constituted to look after the education of children in their areas; and (5) that the Road Tax should be handed over to these bodies to form the nucleus of an Education Fund. Action was first taken under the new scheme in 1908, when 16 Districts were proclaimed by the Governor; and the official report for 1909 thus speaks of its working: 'There has been no difficulty so far, and there seems to be every reason to hope that none of the difficulties, which were anticipated by some of the managers of aided schools, will arise. It is hoped that in the course of the present year, it will be brought into working Order in all the Districts'. In 1909 the total number of pupils, attending primary schools in Geylon, was 237,000, which gives a proportion of 6.6 per cent to the whole population of the Island.

"Within the borders of India itself, the Maharaja of Baroda has set an example of enthusiasm in the cause of e location, for which he is entitled to the lasting gratitude of the people of the country. His Highness began his first expertment in the matter of introducing compulsory and free education into his State eighteen years ago in ten villages of the Amreli Taluka. After watching the experiment for eight years, it was extended to the whole taluka in 1901, and finally, in 1906, primary education was made compulsory and free throughout the State for boys between the ages of 6 and 12, and for girls between the ages of 6 and 10. The age limit for girls has since been raised from 10 to 11. The last two Education Reports of the State explain with considerable fullness the working of the measure, and furnish most interesting reading. In 1909, the total number of pupils at school was 165,000, which gives a proportion of 8.6 per cent to the total population of the State. Taking the children of school-going age, we find that 79.6 per cent boys of such age were at school, as against 21.5 per cent in British India; while the percentage of girls was 47.6, as against our 4 per cent only. The total expenditure on primary schools in Baroda in 1909 was about $7\frac{1}{2}$ lakhs of rupees, which gives a proportion of about $6\frac{1}{2}$d. per head of the population, as against one penny in British India. The population of Baroda is drawn from the same classes as that of the adjoining British territories, and every day that passes sees the subjects of the Gaekwar outdistancing more and more British subjects in the surrounding districts.

"My Lord, if the history of elementary education throughout the world establishes one fact more clearly than another, it is this, that without a resort to compulsion no State can ensure a general diffusion of education among its people. England, with her strong love of individualism, stood out against the principle of compulsion for as long as she could, but she had to give way in the end all the same. And when the Act of 1870, which introduced compulsion into England and Wales, was under discussion, Mr. Gladstone made a frank admission in the matter in language which I would like to quote to this council. 'Well, Sir,' said he, 'there is another principle, and undoubtedly, of the gravest character, which I can even now hardly hope-though I do hope after all that we had seen-is accepted on the other side of the House-I mean the principle that compulsion

must be applied in some effective manner to the promotion of education. I freely and frankly own that it was not without an effort that I myself accepted it. I deeply regret the necessity. I think that it is a scandal and a shame to the country that in the midst of our, as we think, advanced civilization, and undoubtedly of our enormous wealth, we should at this time of day be obliged to entertain this principle of compulsion. Nevertheless, we have arrived deliberately at the conclusion that it must be entertained, and I do not hesitate to as that, being entertained, it ought to be entertained with every consideration, with every desire of avoiding haste and precipitancy, but in a manner that shall render it effectual . . .' A Royal Commission, appointed in 1886 to report on the working of the measures adopted to make attendance at school compulsory in England and Wales, bore ungrudging testimony to the great effect which compulsion had produced on school attendance. 'It is to compulsion', they wrote, 'that the increase of the numbers on the roll is largely attributable. Among the witness before us Mr. Stewart appears to stand alone in his opinion that, provided the required accommodation bad been furnished, the result would have been much the same if attendance had not been obligatory. But to estimate fairly the influence, which compulsion has had upoh the great increase in the number of children attending school, we must speak of it under the three heads into which its operation may be divided. There is first, the direct influence of compulsion. This is exerted over parents, who are indifferent to the moral and intellectual welfare of their children, who are very eager to obtain what advantage they can from their children's earnings, but who never look beyond .... But, secondly, compulsion exercises an indirect influence. Many parents are apathetic, yield weakly to their children's wish not to go to school. . . . But they are keenly alive to the disgrace of being brought before a Magistrate, the fear of which supplies a stimulus sufficient to make them do their duty in this respect. In addition, the existence of a compulsory law has considerably affected public opinion and has done much to secure a larg,ar school attendance by making people recognise that the state regards them as neglecting their duty, if their children remain uneducated. The Ceylon Commission of 1905, in dealing with the question whether attendance at school should be made compulsory, expressed themselves as follows 'With the exception of one or two districts of the Island, little good will be done by any system which does not enforce oompulsory at tendance. The Dutch, who had an extensive and successful system of Vernacular schools throughout the portions of the Island which were under their rule, found it necessary to enforce attendance by fines, and did so regularly. Parents, throughout a large portion of the Island, exercise very little control over their children, and will linve them to do as they like in the matter of school attendance. The result is that where there is no compulsion, boys attend very irregularly and leave school very early. That compulsory attendance is desirable we have no doubt.' My Lord, primary education has rested on a voluntary basis in this country for more than half a century, and what is the extent of the progress it has made during the time? For answer one has to look at the single fact that seven children Out of eight are yet allowed to grow up in ignorance and darkness, and four villages out of five are without a school. During the last six or seven years, the pace has been slightly more accelerated than before, but, even so, bow extremely saran it is may be seen from what Mr. Orange says of it in the last quinquennial report, issued two years ago But the rate of increase for time fast twenty-five years or for the last five is more slow than when compared with the distance that bas to be trevelled before primary education can be universally diffused. If the number of boys at school continued to increase even at the rate of increase that has taken place in the last five years, and even if there was no increase in population, even then several generations would still elapse before all the boys of school age were in school." My Lord, I respectfully submit that this state of things must

be remedied; that India must follow in the wake of other civilised countries in the matter, if her children are to enjoy anything like the advantages which the people of those countries enjoy in the race of life; that a beginning at least should now be made in the direction of compulsion; and that the aim should be to cover the whole field in the lifetime of a generation. When England introduced compulsion in 1870, about 43 per cent of her children of school-going age were at school, and ten years sufficed for her to bring all her children to school. When Japan took up compulsion, about 28 per cent of her school-going population was at school, and Japan covered the whole field in about twenty years. Our difficulties are undoubtedly greater than those of any other country, and our progress, even with the principle of compulsion introduced, is bound to be slower. But if a beginning, is made at once, and we resolutely press forward towards the goal, the difficulties great as they are, will vanish before long, and the rest of the journey will be comparatively suuple and easy. My Lord, it is urged by those who are opposed to the nansduction of compulsion in this country that though the Gaekwar, as an Indian Prince could force compulsion on his subjects without serious opposition, the British Government, as a foreign Government, cannot afford to risk the unpopularity which the measure will entail. Personally I do not think that the fear which lies behind this view is justified, because the Government in Ceylon is as much a foreign Government as that in India, and in Ceylon the authorities have not shrunk from the introduction of compulsion. But to meet this objection, I am quite willing that the first steps in the direction of compulsion should be taken by our Local Bodies, which reproduce in British territory conditions similar to those which obtain in Feudatory states. And even here I am willing that the first experiment should be made in carefully selected and advanced areas only. When the public mind is familiarised with the idea of compulsion, the Government may take they succeeding steps without any hesitation or misgiving. In view, also, of the special difficulties likely to be experienced in extending the principle of compulsion at once to girls. I am willing that, to begin with, it should be applied to boys only, though I share the opinion that the education of girls is with us even a greater necessity than that of boys, and I look forward to the time when compulsion will be extended to all children alike of either sex. To prevent injudicious zeal on the part of Local Bodies, even in so good a muse as the spread of elementary eduction, I am willing that ample powers of control should be retained by the Provincial and Impetial Govenments in their own hands. What I earnestly and emphatically insist on, however, is that no more time should now be lost in making a beginning in this all important matter.

"My Lord, I now come to the Bill, which I hope the Council will let me introduce today, and I ask the indulgence of the Council while I explain briefly its main provisions. The Bill, I may state at once has been framed with a strict regard to the limitations of the position, to which I have already referred. It is a purely permissive Bill, and it merely proposes to empower Municipalities and District Boards, under certain circumstances, to introduce compulsion within their areas, in the first instance, in the case of boys, and latter, when the time is ripe, in the case of girls. Before a Local Body aspires to avail itself of the powers contemplated by the Bill, it will have to fulfil such conditions as the Government of India may by rule lay down as regards the extent to which education is already diffused within its area. Last year, in moving my resolution on this subject, I urged that where one-third of the boys of school-going age were already at school, the question of introducing compulsion might be taken up for consideration by the Local Body. I think this is a fair limit, but if the Government of India so choose, they might impose a higher limit. In practice, a limit of 33 per cent. will exclude for several years to come all District Boards, and bring within the range only a few of the more

advanced Municiplities in the larger towns in the different Provinces. Moreover, a Local Body, even when it satisfies the limit laid down by the Government of India, can come under the Bill only after obtaining previously the sanction of the Local Government. I submit, my Lord, that these are ample safeguards to prevent any ill-considered or precipitate action on the part of a Local Body. Then the Bill provides for a compulsory period of school attendance of four years only. Most countries have a period of six years, and even Ceylon and Baroda provide six years; Italy, which began with three, and Japan, which began with four years, have also raised their period to six years. But considering that the burden of additional expenditure involved will in many cases be the principal determining factor in this matter, I am content to begin with a compulsory period of four years only. The next point to which I would invite the attention of the Council is that the Bill makes ample provision for exemption from compulsory attendance on reasonable grounds, such as sickness, domestic necessity or the seasonal needs of agriculture. A parent may also claim exemption for his child on the ground that there is no school within a reasonable distance from his residence, to which he can send the child without exposing him to religious instruction to which he objects; and a distance of one mile is laid down as a reasonable distance. This, however, is a matter of detail, which, perhaps, may better be left to Local Governments. When a Local Body comes under the Bill, the responsibility is thrown upon it to provide suitable school accommodation for the children within its area, in accordance with standards which may be laid down by the Education Department of the Local Government. On the question of fees, while I am of opinion that where attendance is made compulsory, instruction should be gratuitous, the Bill provides for gratuitous instruction only in the case of those children whose parents are extremely poor, not earning more than Rs. 10 a mouth, all above that line being required to pay or not in the discretion of the Local Body. This is obviously a compromise, rendered necessary by the opposition offered by so many Local Governments to the proposal of abolishing fees in primary schools, on the ground that it means an unnecessary sacrifice of a necessary and useful income. Coming to the machinery for working the compulsory provisions the Bill provides for the creation of special school attendance committees, whose duty it will be to make careful enquiries and prepare and maintain lists of children who should be at school within their respective areas, and take whatever steps may be necessary to ensure the attendance of children at school, including the putting into operation of the penal clauses of the Bill against defaulting parents. The penal provisions, it will be seen, are necessarily, light. To ensure the object of the Bill being fulfilled, the employment Of child labour below the age of ten is prohibited, and penalty is provided for any infringement of the provision. Lastly, it is provided that the Government of India should lay down by rule the proportion in which the heavy cost of compulsory education should be divided between the Local Government and the Local Body concerned, it being assumed that the Supreme Government will place additional resources at the disposal of the Local Government, to enable it to defray its share, the Local Body baio on its side empowered to levy a special Education Rate, if neeeasary, to meet its share of the expenditure, It is obvious that the whole working of this Bill must depend, in the first instance, upon the, share, which the Government is prepared to bear, of the cost of compulsory education, wherever it is introduced. I find that in England the Parliamentary grant covers about two-third of the total expenditure on elementary schools. In Scotland it amounts to more. than that portion, whereas in Ireland it meta practically the whole cost. I think we are entitled to ask that in India at least two-thirds of the new expenditure should be borne by the State.

"This, my Lord, is briefly the whole of my Bill. It is a small and humble attempt to suggest the first steps of a journey, which is bound to prove long and tedious but which must be performed, if the mass of our people are to emerge from their present condition It is not intended that all parts of the Bill should be equally indispensable to the scheme, and no one will be more ready than myself to undertake any revision that may be found to be necessary in the light of helpful criticism. My Lord, if I am so fortunate as to receive from the Council the leave I ask at its hands, it will probably be a year before the Bill comes up here again for its farther stages. Meanwhile, its consideration will be transferred from the Council to the country, and all sections of the community will have ample opportunities to scrutinise its provisions with care My Lord, this question of a universal diffusion of education in India depends, almost more than any other question, on the hearty and sympathetic co-operation of the Government and the leaders of the people. The Government must, in the first instance, adopt definitely the policy of such diffusion as its own, and it must, secondly, not grudge to find the bulk of the money, which will be required for it, as Governments in most other civilised countries are doing. And this is what we are entitled. to ask at the hands of the Government in the name of justice, for the honour of the Government itself, and in the highest interests of popular well-being. The leaders of the people, on their side, must bring to this task high enthusiasm, which will not be chilled by difficulties, courage which will not shrink from encountering unpopularity, if need be, and readiness to make sacrifices, whether of money, of time or energy, which the cause may require. I think my Lord, if this Bill passes into law, the educated classes of the country will be on their trial. It is my earnest hope that neither they nor the Government will fail to raise to the requirements of this essentially modest and cautious measure. My Lord, one great need of the situation, which I have ventured again and again to point out in this Council for several years past, is that the Government should enable us to feel that, though largely foreign in personnel, it is national in spirit and sentiment; and this it can only do by undertaking towards their people of India all those responsibilities, which National Governments in other countries undertake towards their people. We, too, in our turn, must accept the Government as a national Government, giving it that sense of security which national Governments are entitled to claim, and utilising the peace and order, which it Las established, for the moral and material advancement of our people. And of all the great national tasks which lie before the country, and in which the Government and the people can co-operate to the advantage of both, none is greater than this task of promoting the universal diffusion of education in the land, bringing by its means a ray of light, a touch of refinement, a glow of hope into lives that sadly need them all. The work, I have already said, is bound to be slow, but that only means that it must be taken in hand at once. If a beginning is made without further delay, if both the Government and the people persevere with the task in the right spirit, the whole problem may be solved before another generation rise to take our place. If this happens, the next generation will enter upon its own special work with a strength which will be its own security of success. AR for us, it will be enough to have laboured for such an end-laboured even when the end is not in sight. For, my Lord, I think there is not only profound humility but also profound wisdom in the faith which says:- 'I do not ask to sea distant scene: One step enough for me'

" The Hon'ble MR. Gokhale: "Sir, I have surely no reason to be dissatisfied with the reception which the Bill has met with at the hands of the Members of this council. No man has the right to expect -and I certainly did not expect-that any proposals that he brings forward on a subject of such importance would be accepted by a body like this council without any criticism; and if I else, Sir, just now, to speak a second time, it is for

two reasons. In the first place, I wish to express my sense of obligation to the Hon'ble Mr. Butler personally, and to the Government of India generally for the attitude they have adopted towards this Bill. The attitude is no doubt cautious but it is not unfriendly, and it certainly goes as far as I had ventured to expect-I had net expected thot it would go further, than that. The second reason why I wish to say a few words before this debate is brought to a close is that I want to clear certain misconceptions to which expression has been given to-day, about some of the provisions of the Bill, as also about my object in bringing the Bill forward. Sir as I pointed out in the course of the remarks with which I asked for leave to introduce flue Bill, if there is one fact established more clearly than another in the history of primary education, it is this, that, without compulsion, there can be no universal diffusion of education. You may shake your heads-anybody can shake his head-and say that the time for compulsion has not come; that we shall try the experiment on a voluntary basis; that we shall wait for some time; that we shall achieve here what nobody else has achieved elsewhere. Anybody may say this, but, as sure as we are here, as sure as we are discussing the question in this Council to-day, I say that everybody will in the end recognise that without compulsion it is impossible to secure the universal diffusion of education throughout the country. That being so, the only effective and proper course is to suggest that the Government should introduce compulsion. And if the Government of India had not been beset with its peculiar difficulties, I should have urged it to take up this question and introduce compulsion on its own account. But as I have already observed, there are several considerations which render such a course difficult, if not impossible. And since that cannot be, I am content to proceed on other lines and to try a measure such as I have brought forward to-day. Sir, my Hon'ble friend Mr. Dadabhoy says that District Officers hold a very strong position on District Boards, and therefore, if this Bill is allowed to become law, District Officers, who may find no difficulty in getting the sanction of the Local Government, may use their position on the Boards to introduce compulsion. If this really happens, I say at once that I shall rejoice, because it will really mean that the Government will be accepting its own responsibility and introducing compulsion. I do want the Government to introduce compulsion if only it will do so; but as the Government will not do it, we have got to see what else we can do, and that is why I want this Bill.

"Sir, as far as I have been able to gather from to-day's discussion, hardship apprehended in regard to three matfeee in mrrying out the provisions of this Bill. The first is that District Boards, which are largely under official influence, might introduce compulsion, though the people may not be prepared for it. But I have already pointed out that the Government of India will first of all lay down the standard which must be satisfied by any local body before it introduces the principle of compulsion. I myself have suggested a limit of 33 per cent, but as the matter has been left to the Government of India, I think, if ever this Bill becomes law, that they are likely to adopt a higher limit than 33 per cent of the school-going population being at school. And a limit of even 33 per cent, not only now but for several years to come, will not be satisfied by any District Board. It will no doubt be satisfied by several Municipalities, but that is another matter. Therefore I do not think thaqt the fear expressed about hasty action by District Boards is well-founded. If after the country has been familiarised with the idea of compulsion for some time, District Boards also follow in the wake of Municipalities, I do not think that there would be any reason to regret such a development. Then Sir, a great deal has been said about the hardship which may be caused by empowering these bodies to levy a special education cess. My friends who have spoken have ignored the fact that the cess, when levied, is to be levied by the local bodies, and that it will require the sanction of the Local Government before it is levied. Those who

say that the local bodies might consist of idealists and might be hasty in their action stand on a different footing from those who object to any special cess at all. To the former, I think it is a sufficient answer to point out that there is the Local Governmeet to check idealism if there is any tendency in that direction. But there are those who object to any cess at all, and they have strongly urged to-day that would be a calamity, a disaster, if any cess is ever levied in order that primary education might be made compulsory. Sir, I am unable to accept this opinion. On the other hand, I feel strongly that, if primary eudcation is ever to be compulsory, local bodies will have to bear a fairly large share of the burden which it will impose. This is the case in all countries where the system of compulsory edueation prevails; and those friends of mine who object to the levy of a cess might as well object to compulsory education and be done with it. I admire, Sir, my Hon'ble friend Mr. Dadebhoy's candour and consistency. Mr. Dadabhoy is against the levy of a local cess which may have to be imposed in order that the children of poor people may be educated. Mr. Dadabhoy the other day proposed that the excise-duty on cotton goods should be done away with, not on the ground that its burden falls on the consumers who are the poorest of the poor, but because the amount, if added to the profits of the mill industry, will mean a better return for the mill-owners. Mr. Dadabhoy also wants unrestricted hours for factory labour, for that means better dividends for capitalists. He is consistent all through; but his consistency need not appeal to this Council; and I think an attitude like his will hardly commend itself to those who wish well to the masses of the people. Sir, my fear is that, if this Bill ever becomes law, our financial difficulties will then only begin. It is not the cess that will constitute the real difficulty; it is the share that will have to be borne by the Government. The bulk of the money has to be found by the Finance Department of the Government of India, and I fear in the Hon'ble Sir Guy Fleetwood Wilson (I am sorry he is not in his place-I should have liked to say this ihi his presence) we shall probably find a dragon in the path. However, we shall have to agitate in this matter as in other matters, and I think an important lever has now been put into our hands by the Government by the creation of the new Education Deparement. Surely the Education Member must have something to do, and if he is to do anything, they must give him money to spend. I think that that will be ear lever, and if we use the lever properly, the Government will find the money we want in the end. There is no reason why we should not entertain this hope. That is what every civilized Government is doing for its own people, and that is what we are entitled to expect from our Government. The third fear expressed is about extending compulsion to girls at the present stage. Sir, I have already expressly stated that the intention is that the education of girls should for the present continue on a voluntary basis, though I certainly hope that before long the necessity of putting that education on the same footing as that of boys will be recognized, and the Bill only takes powers for that time when it comes. Remember that Baroda has compulsion even to-day for girls as well as boys. My Hon'ble friend Sir Sassoon David says that the time for compulsion has not yet come. Will he tell us when the time for compulsion arrives? Will he tell us how and why it has arrived Baroda and not in British territory? Will he tell us how it has arrived in Ceylon and not in British territory? Will he tell us why, when the Philippino, Municipalities have introduced compulsiono, our own Municipalities should not? Of course, if you merely assert that the time has not arrived and stop there, it is not possible to argue with you. The Hon'ble Mr. Butler declines to accept my analogies and says that the state of things in this country is different to what it is elsewhere; and as regards Baroda, he says that it is governed autocratically and that makes a great difference. Western countries will not do because they are governed domocratically! Baroda will no do, because it is governed autocratically! I suppose the Hon'ble Member will not be satisfied

unless produce the analogy of a country, governed bureaucratically; and as there is no other country governed as India is, he is safe in insisting on such an analogy, and I must say give it up. Sir, I will now address only two words in conclusion-one to the Government and the other to my non-official colleagues, and then resume my seat. To the Government I will merely put this question: are you content to lag behind Baroda? Every day that passes, while Baroda has a system of compulsory education, and we have not-every day that passes like that, material is produced which will go to build up a judgment against you; and I am quite sure the conscience of the Government will, before long, be roused to this question. You may say what you like in defence of the existing situation; but you are bound to realize that you cannot lag behind Baroda, and I am convinced that the question of compulsion is for us now only a question of time. To my non-official colleagues I will say this: if we are not prepared to bear a cess for educating the children of the mass of our own people, if we are not prepared to make sacrifices for so great an object, if we expect the money to drop from somewhere-and remember, even if the Government raise it by additional taxation, after all it is we who shall pay it, -we may as well cease tanking about improving the lot of the mass of the people. Sir, if we want our country to advance, there is only one way, and that is that the mass of the people in this country must be raised to a higher level. This can only be achieved by the spread of education, which in its turn requires a large expenditure of money. And a reasonable part of this money must be raised locally, as is being done in other countries, or else we may leave the matter well alone. Sir, I do not wish to say anything more. I once again beg to express my obligations to the Hon'ble Mr. Butler and to the Government for the attitude they have adopted towards this Bill, and I am also most grateful to those Hon'ble Members who have accorded this measure their cordial support."

The motion was put and agreed to.

The Hon'ble Mr. GOKHALE introduced the Bill end moved that the Bill, together with the Statement of Objects nnd Reasons relating thereto, be published in the *Gazette of India* in English and in the local official Gazettes in English and in such other languages as the Local Governments think fit.

The motion was put and agreed to.

NAI TALIM
I

M.K. Gandhi

Nai Talim was popularly and correctly described as education through handicrafts. This was part of the truth. The root of this new education went much deeper. It lay in the application of truth and love in every variety of human activity, whether in individual life or a corporate one. The notion of education through handicraft rose from the contemplation of truth and love permeating life's activities. Love required that true education should be easily accessible to all and should be of use to every villager in his daily life. Such education was not derived from nor did it depend upon books. It had no relation to sectional religion. If it could be called religious, it was universal religion from which all sectional religions were derived. Therefore, it was learnt from the Book of Life which cost nothing and which could not be taken away from one by any force on earth.

H., 21-12-'47, p. 480

I hold that true education of the intellect can only come through a proper exercise and training of the bodily organs, e.g., hands, feet, eyes, ears, nose, etc. In other words an intelligent use of the bodily organs in a child provides the best and quickest way of developing his intellect. But unless the development of the mind and body goes hand in hand with a corresponding awakening of the soul, the former alone would prove to be a poor lop-sided affair. By spiritual training I mean education of the heart. A proper and all-round development of the mind, therefore, can take place only when it proceeds pari passu with the education of the physical and spiritual faculties of the child. They constitute an indivisible whole. According to this theory, therefore, it would be a gross fallacy to suppose that they can be developed piecemeal or independently of one another.

The baneful effects of absence of proper coordination and harmony among the various faculties of body, mind and soul respectively are obvious. They are all around us; only we have lost perception of them owing to our present perverse associations. Take the case of our village folk. From their childhood upward they toil and labour in their fields from morning till night like their cattle in the midst of whom they live. Their existence is a weary endless round of mechanical drudgery unrelieved by a spark of intelligence or higher graces of life. Deprived of all scope for developing their mind and soul, they have sunk to the level of the beast. Life to them is a sorry bungle which they muddle through anyhow. On the other hand what goes by the name of education in our schools and colleges in the cities today is in reality only intellectual dissipation. Intellectual training is there looked upon as something altogether unrelated to manual or physical work. But since the body must have some sort of physical exercise to keep it in health, they vainly try to attain that end by means of artificial and otherwise barren system of physical culture which would be ridiculous beyond words if the result was not so tragic. The young man who emerges from this system can in no way compete in physical endurance with an ordinary labourer. The slightest physical exertion gives him a headache; a mild exposure to the sun is enough to cause him giddiness. And what is more, all this is looked upon as quite 'natural'. As for the faculties of the heart, they are simply allowed to run to seed or to grow anyhow in a wild undisciplined manner. The result is moral and spiritual anarchy. And it is regarded as something laudable!

As against this, take the case of a child in whom the education of the heart is attended to from the very beginning. Supposing he is set to some useful occupation like spinning, carpentry, agriculture,

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etc., for his education and in that connection is given a thorough comprehensive knowledge relating to the theory of the various operations that he is to perform and the use and construction of the tools that he would be wielding. He would not only develop a fine healthy body but also a sound, vigorous intellect that is not merely academic but is firmly rooted in and is tested from day to day by experience. His intellectual education would include a knowledge of mathematics and the various sciences that are useful for an intelligent and efficient exercise of his avocation. If to this is added literature by way of recreation, it would give him a perfect well-balanced, all-round education in which the intellect, the body and the spirit have all full play and develop together into a natural, harmonious whole. Man is neither mere intellect, nor the gross animal body, nor the heart or soul alone. A proper and harmonious combination of all the three is required for the making of the whole man and constitutes the true economics of education.

H., 8-5-'37, p. 104

If we want to impart education best suited to the needs of villagers, we should take the Vidyapith to the villages. We should convert it into a training school in order that we might be able to give practical training to teachers in terms of the needs of villagers. You cannot instruct the teachers in the needs of villagers through a training school in a city. Nor can you so interest them in the condition of villages. To interest city-dwellers in villages and make them live in them is no easy task. I am finding daily confirmation of this in Segaon. I cannot give you the assurance that our year's stay in Segaon has made of us villagers or that we have become one with them for the common good.

Then as to primary education, my confirmed opinion is that the commencement of training by teaching the alphabet and reading and writing hampers their intellectual growth. I would not teach them the alphabet till they have had an elementary knowledge of history, geography, mental arithmetic and the art (say) of spinning. Through these three I should develop their intelligence. Question may be asked how intelligence can be developed through the takli or the spinning wheel. It can to a marvellous degree if it is not taught merely mechanically. When you tell a child the reason for each process, when you explain the mechanism of the *takli* or the wheel, when you give him the history of cotton and its connection with civilization itself and take him to the village field where it is grown, and teach him to count the rounds he spins and the method of finding the evenness and strength of his yarn, you hold his interest and simultaneously train his hands, his eyes and his mind. I should give six months to this preliminary training. The child is probably now ready for learning how to read the alphabet, and when he is able to do so rapidly, he is ready to learn simple drawing, and when he has learnt to draw geometrical figures and the figures of the birds etc., he will draw, not scrawl, the figures of the alphabet. I can recall the days of my childhood when I was being taught the alphabet. I know what a drag it was. Nobody cared why my intellect was rusting. I consider writing as a fine art. We kill it by imposing the alphabet on little children and making it the beginning of learning. Thus we do violence to the art of writing and stunt the growth of the child when we seek to teach him the alphabet before its time.

H., 5-6-'37, p.130

As to the necessity and value of regarding the teaching of village handicrafts as the pivot and centre of education I have no manner of doubt. The method adopted in the institutions in India I do not call education, i.e., drawing out the best in man, but a debauchery of the mind. It informs the mind anyhow, whereas the method of training the mind through village handicrafts from the beginning as the central fact would promote the real, disciplined development of the mind resulting in conservation of the intellectual energy and indirectly also the spiritual.

H., 5-6-'37, p. 131

In my scheme of things the hand will handle tools before it draws or traces the writing. The eyes will read the pictures of letters and words as they will know other things in life, the ears will catch the names and meanings of things and sentences. The whole training will be natural, responsive, and therefore the quickest and the cheapest in the land. The children of my school will therefore read much more quickly than they will write. And when they write they will not produce daubs as I do even now (thanks to my teachers) but they will trace correct letters even as they will trace correct figures of the objects they may see. If the schools of my conception ever come into being, I make bold to say that they will vie with the most advanced schools in quickness, so far as reading is concerned, and even writing if it is common ground that the writing must be correct and not incorrect as now is in the vast majority of cases.

H., 28-8-'37, p. 225

The course of primary education should be extended at least to seven years and should include the general knowledge gained up to the matriculation standard less English and plus a substantial vocation.

For the all-round development of boys and girls all training should so far as possible be given through a profit-yielding vocation. In other words vocations should serve a double purpose-to enable the pupils to pay for his tuition through the products of his labour and at the same time to develop the whole man or woman in him or her through the vocation learnt at school.

Land, buildings and equipment are not intended to be covered by the proceeds of the pupil's labour.

All the processes of cotton, wool and silk, commencing from gathering, cleaning, ginning (in the case of cotton), carding, spinning, dyeing, sizing, warp-making, double-twisting, designing and weaving, embroidery, tailoring, paper-making, cutting, bookbinding, cabinet-making, toy-making, gar-making are undoubted occupations that can easily be learnt and handled without much capital outlay.

This primary education should equip boys and girls to earn their bread by the State guaranteeing employment in the vocations learnt or by buying their manufactures at prices fixed by the State.

H., 2-10-'37, p. 282

But as a nation we are so backward in education that we cannot hope to fulfill our obligations to the nation in this respect in the given time during this generation, if the programme is to depend on money. I have therefore made bold, even at the risk of losing ail reputation for constructive ability, to suggest that education should be self-supporting. By education I mean an all-round drawing out of the best in child and man-body, mind and spirit. Literacy is not the end of education nor even the beginning. It is only one of the means whereby man and woman can be educated. Literacy in itself is no education. I would therefore begin the child's education by teaching it a useful handicraft and enabling it to produce from the moment it begins its training. Thus every school can be made self-supporting, the condition being that the State takes over the manufactures of these schools.

I hold that the highest development of the mind and the soul is possible under such a system of education. Only every handicraft has to be taught not merely mechanically as is done today but scientifically, i.e., the child should know the why and the wherefore of every process. I am not writing this without some confidence, because it has the backing of experience. This method is being adopted more or less completely wherever spinning is being taught to workers. I have myself

taught sandal-making and even spinning on these lines with good results. This method does not exclude a knowledge of history and geography. But I find that this is best taught by transmitting such general information by word of mouth. One imparts ten times as much in this manner as by reading and writing. The signs of the alphabet may be taught later when the pupil has learnt to distinguish the wheat from the chaff and when he has somewhat developed his or her tastes. This is a revolutionary proposal but it saves immense labour and enables a student to acquire in one year what he may take much longer to learn. This means all-round economy. Of course the pupil learns mathematics whilst he is learning his handicraft.

I attach the greatest importance to primary education which according to my conception should be equal to the present matriculation less English. If all the collegians were all of a sudden to forget their knowledge, the loss sustained by the sudden lapse of the memory of say a few lakhs of collegians would be as nothing compared to the loss that the nation has sustained and is sustaining through the ocean of darkness that surrounds three hundred millions. The measure of illiteracy is 110 adequate measure of the prevailing ignorance among the millions of villagers.

I would revolutionize college education and relate it to national necessities. There would be degrees for mechanical and other engineers. They would be attached to the different industries which should pay for the training of the graduates they need. Thus the Tatas would be expected to run a college for training engineers under the supervision of the State, the mill associations would run among them a college for training graduates whom they need. Similarly for the other industries that may be named. Commerce will have its college. There remain arts, medicine and agriculture. Several private arts colleges are today self-supporting. The State would, therefore, cease to run its own. Medical colleges would be attached to certified hospitals. As they are popular among moneyed men they may be expected by voluntary contributions to support medical colleges. And agricultural colleges to be worthy of the name must be self-supporting. I have a painful experience of some agricultural graduates. Their knowledge is superficial. They lack practical experience. But if they had their apprenticeship on farms which are self-sustained and answer the requirements of the country, they would not have to gain experience after getting their degrees and at the expense of their employers.

H., 31-7-'37, p. 197

Given the right kind of teachers, our children will be taught the dignity of labour and learn to regard it as an integral part and a means of their intellectual growth, and to realize that it is patriotic to pay for their training through their labour. The core of my suggestion is that handicrafts are to be taught, not merely for productive works, but for developing the intellect of the pupils. Surely, if the State takes charge of the children between seven and fourteen, and trains their bodies and minds through productive labour, the public schools must be frauds and teachers idiots, if they cannot become self-supporting.

H., 11-9-'37, p. 256

We have up to now concentrated on stuffing children's minds with all kinds of information, without ever thinking of stimulating and developing them. Let us now cry a halt and concentrate on educating the child properly through manual work, not as a side activity, but as the prime means of intellectual training.

H., 18-9-'37, p. 261

In the schools I advocate, boys have all that boys learn in high schools less English but plus drill, music, drawing, and, of course, a vocation.

H., 18-9-'37, p. 42

I am a firm believer in the principle of free and compulsory primary education for India. I also hold that we shall realize this only by teaching the children a useful vocation and utilizing it as a means for cultivating their mental, physical and spiritual faculties. Let no one consider these economic calculations in connection with education as sordid, or out of place. There is nothing essentially sordid about economic calculations. True economics never militates against the highest ethical standard, just as all true ethics to be worth its name must at the same time be also good economics.

H., 9-10-'37, p. 292

What kind of vocations are the fittest for being taught to children in urban schools? There is no hard and fast rule about it. But my reply is clear. I want to resuscitate the villages of India. Today our villages have become a mere appendage to the cities. They exist, as it were, to be exploited by the latter and depend on the latter's sufferance. This is unnatural. It is only when the cities realize the duty of making an adequate return to the villages for the strength and sustenance which they derive from them, instead of selfishly exploiting them, that a healthy and moral relationship between the two will spring up. And if the city children are to play their part in this great and noble work of social reconstruction, the vocations through which they are to receive their education ought to be directly related to the requirements of the villages. So far as I can see the various processes of cotton manufacture from ginning and cleaning of cotton to the spinning of yarn, answer this test as nothing else does. Even today cotton is grown in the villages and is ginned and spun and converted into cloth in the cities. But the chain of processes which cotton undergoes in the mills from the beginning to the end constitutes a huge tragedy of waste in men, materials and mechanical power.

My plan to impart primary education through the medium of village handicrafts like spinning and carding etc. is thus conceived as the spearhead of a silent social revolution fraught with the most far- reaching consequences. It will provide a healthy and moral basis of relationship between the city and the village and thus go a long way toward eradicating some of the worst evils of the present social insecurity and poisoned relationship between the classes. It will check the progressive decay of our villages and lay the foundation of a juster social order in which there is no unnatural division between the 'haves' and 'have-nots' and everybody is assured of a living wage and the right to freedom. And all this would be accomplished without the horrors of a bloody class war or a colossal capital expenditure such as would be involved in the mechanization of a vast continent like India. Nor would it entail a helpless dependence on foreign imported machinery or technical skill. Lastly, by obviating the necessity for highly specialized talent, it would place the destiny of the masses, as it were, in their own hands. But who will bell the cat? Will the city-folk listen to me at all? Or, will mine remain a mere cry in the wilderness? Replies to these and similar questions will depend more on lovers of education living in cities than on me.

H., 9-10-'37, p. 293

If such education is given, the direct result will be that it will be self-supporting. But the test of success is not its self-supporting character, but that the whole man has been drawn out through the teaching of the handicraft in a scientific manner. In fact I would reject a teacher who would promise to make it self-supporting under any circumstances. The self-supporting part will be the logical corollary of the fact that the pupil has learnt the use of every one of his faculties. If a boy who works at a handicraft for three hours a day will surely earn his keep, how much more a boy who adds to the work a development of his mind and soul!

H., 11-6-'38, p. 143

This basic education has grown out of the atmosphere surrounding us in the country and is in response to it. It is, therefore, designed to cope with that atmosphere. This atmosphere pervades India's seven hundred thousand villages and its millions of inhabitants. Forget them and you forget India. India is not to be found in her cities. It is in her innumerable villages.

The following are the fundamentals of basic education:

1. All education to be true must be self-supporting, that is to say, in the end it will pay its expenses excepting the capital which will remain intact.
2. In it the cunning of the hand will be utilized even up to the final stage, that is to say, hands of the pupils will be skilfully working at some industry for some period during the day.
3. All education must be imparted through the medium of the provincial language.
4. In this there is no room for giving sectional religious training. Fundamental universal ethics will have full scope.
5. This education, whether it is confined to children or adults, male or female, will find its way to the homes of the pupils.
6. Since millions of students receiving this education will consider themselves as of the whole of India, they must learn an inter-provincial language. This common inter-provincial speech can only be Hindustani written in Nagari or Urdu script. Therefore, pupils have to master both the scripts.

H., 2-11-'47, p. 393

II

All instruction must be linked with some basic craft. When you are imparting knowledge to a child of 7 or 10 through the medium of an industry, you should, to begin with, exclude all those subjects which cannot be linked with the craft. By doing so from day to day you will discover ways and means of linking with the craft many things which you had excluded in the beginning. You will save your own energy and the pupil's if you follow this process of exclusion to begin with. We have today no books to go by, no precedents to guide us. Therefore we have to go slow. The main thing is that the teacher should retain his freshness of mind. If you come across something that you cannot correlate with the craft, do not fret over it and get disheartened. Leave it, and go ahead with the subjects that you can correlate. May be another teacher will hit upon the right way and show how it can be correlated. And when you have pooled the experience of many, you will have books to guide you, so that the work of those who follow you will become easier.

How long, you will ask, are we to go on with this process of exclusion. My reply is, for the whole life-time. At the end you will find that you have included many things that you have excluded at first, that practically all that was worth including has been included, and whatever you have been obliged to exclude till the end was something very superficial that deserved exclusion. This has been my experience of life. I would not have been able to do many things that I have done if I had not excluded an equal number.

Our education has got to be revolutionized. The brain must be educated through the hand. If I were a poet, I could write poetry on the possibilities of the five fingers. Why should you think that the mind is everything and the hands and feet nothing? Those who do not train their hands, who go through the ordinary rut of education, lack 'music' in their life. All their faculties are not trained. Mere book knowledge does not interest the child so as to hold his attention fully. The brain gets weary of mere words, and the child's mind begins to wander. The hand does the things it ought not to do, the eye sees the things it ought not to see, the ear hears the things it ought not to hear, and they do not do, see, or hear, respectively, what they ought to. They are not taught to make

the right choice and so their education often proves their ruin. An education which does not teach us to discriminate between good and bad, to assimilate the one and eschew the other is a misnomer.

The old idea Was to add a handicraft to the ordinary curriculum of education followed in the schools. That is to say, the craft was to be taken in hand wholly separately from education. To me that seems a fatal mistake. The teacher must learn the craft and correlate his knowledge to the craft, so that he will impart all that knowledge to his pupils through the medium of the particular craft that he chooses.

Take the instance of spinning. Unless I know arithmetic I cannot report how many yards of yarn I have produced on the takli, or how many standard rounds it will make or what is the count of the yarn that I have spun. I must learn figures to be able to do so, and I also must learn addition and subtraction and multiplication and division. In dealing with complicated sums I shall have to use symbols and so get my algebra. Even here, I would insist on the use of Hindustani letters instead of Roman.

Take geometry next. What can be a better demonstration of a circle than the disc of the takli? I can teach all about the circle in this way, without-even mentioning the name of Euclid.

Again, you may ask how I can teach my child geography and history through spinning. Some time ago I came across a book called Cotton-The Story of *Mankind*. It thrilled me. It read like a romance. It began with the history of ancient times, how and when cotton was first grown, the stages of its development, the cotton trade between the different countries and so on. As I mention the different countries to the child, I shall naturally tell him something about the history and geography of these countries. Under whose reign the different commercial treaties were signed during the different periods? Why has cotton to be imported by some countries and cloth by others? Why can every country not grow the cotton it requires? That will lead me into economics and elements of agriculture. I shall teach him to know the different varieties of cotton, in what kind of soil they grow, how to grow them, from where to get them, and so on. Thus takli spinning leads me into the whole history of the East India Company, what brought them here, how they destroyed our spinning industry, how the economic motive that brought them to India led them later to entertain political aspirations, how it became a causative factor in the downfall of the Moghuls and the Marathas, in the establishment of the English Raj_5 and then again in the awakening of the masses in our times. There is thus no end to the educative possibilities of this new scheme. And how much quicker the child will learn all that, without putting an unnecessary tax on his mind and memory.

Let me further elaborate the idea. Just as a biologist, in order to become a good biologist must learn many other sciences besides biology, basic education, if it is treated as a science, takes us into interminable channels of learning. To extend the example of the *takli*, a pupil teacher, who rivets his attention not merely on the mechanical process of spinning, which of course he must master, but on the spirit of the thing, will concentrate on the *takli* and its various aspects. He will ask himself why the *takli* is made out of a brass disc and has a steel spindle. The original *takli* had its disc made anyhow. The still more primitive *takli* consisted of a wooden spindle with a disc of slate or clay. The *takli* has been developed scientifically, and there is a reason for making the disc out of brass and the spindle out of steel. He must find out that reason. Then, the teacher must ask himself why the disc has that particular diameter, no more and no less. When he has solved these questions satisfactorily and has gone into the mathematics of the thing, your pupil becomes a good engineer. The *takli*

becomes his Kamadhenu-the 'cow of plenty'. There is no limit to the possibilities of knowledge that can be imparted through this medium. It will be limited only by the energy and conviction with which you work. You have been here for three weeks. You will have spent them usefully if it has enabled you to take to this scheme seriously, so that you will say to yourself, 'I shall either do or die'.

I am elaborating the instance of spinning because I know it. If I were a carpenter, I would teach my child all these things through carpentry, or through cardboard work if I were a worker in cardboard.

What we need is educationists with originality, fired with true zeal, who will think out from day to day what they are going to teach their pupils. The teacher cannot get this knowledge through musty volumes. He has to use his own faculties of observation and thinking and impart his knowledge to the children through his lips, with the help of a craft. This means a revolution in the method of teaching, a revolution in the teacher's outlook. Up till now you have been guided by inspectors' reports. You wanted to do what the inspector might like so that you might get more money yet for your institutions or higher salaries for yourselves. But the new teacher will not care for all that. He will say, 'I have done my duty by my pupil if I have made him a better man and in doing so I have used all my resources. That is enough for me.'

H., 18-2-'39, p. 14-15

III

This education is meant to transform village children into model villagers. It is principally designed for them. The inspiration for it has come from the villages. Congressmen who want to build up the structure of Swaraj from its very foundation dare not neglect the children. Foreign rule has unconsciously, though none the less surely, begun with the children in the field of education. Primary education is a farce designed without regard to the wants of the India of the villages and for that matter even of the cities. Basic education links the children, whether of the cities or the villages, to all that is best and lasting in India. It develops both the body and the mind, and keeps the child rooted to the soil with a glorious vision of the future in the realization of which he or she begins to take his or her share from the very commencement of his or her career in school.

SOURCES H : Harijan Y.I. : Young India

SELECTED PASSEGES ON PRIMARY EDUCATION

Karmaveer Bhaurao Patil

From Vol. 2:
Self-reliant and Self-respecting Education is the Need of the Hour

[Karmaveer] Anna's speech on the occasion of presentation of a Joint Address of welcome to Annasaheb Karve, Karmaveer Bhaurao Patil, Shri Baburao Jagtap and Shri Kakasaheb Barve by the Ahmednagar District Local Board at Ahmednagar on 17 March 1949.

As a high school student, I invited a Mahar boy from the primary school at Islampur to my house for lunch. My mother served the food for both of us. When I told her later on that she had served food to a Mahar boy, she beat me with a poker. How things change! The same mother of mine is now staying in the Laxmibai Hostel for Girls at Satara where Harijan girls serve her food which she accepts gladly.

When I opened the cosmopolitan Shahu Boarding House at Satara in 1924, my orthodox wife was outraged. She used to take a purificatory bath after our meals. I conveyed my displeasure to her. Gradually, she realized the value of my humanitarian work and began to sympathize with it. Once, I was out of station and there were no food-grains for the students' meals. When the Secretary informed her of it, she gladly gave away her Mangal Sutra for the students' meals. What a radical transformation was this! What supreme sacrifice for a noble cause!

We find many so-called social workers who do not want to give up their orthodox ways, so they take shelter behind their mothers' or wives' or sisters' old-fashioned prejudices as a convenient excuse for their cowardice. Ladies should expose the hypocrisy of their menfolk.

Initially, the budget of my boarding house was only Rs 30. Today, it has shot up to a few lakhs. And it is a matter of great joy to me that it is the hard-working, poor peasants who contribute their mite faithfully to my cause. I am of the view that politics should be kept severely out of the holy precincts of education.

It is my sincere desire to transplant a branch of my banyan tree in the fertile soil of the Nagar District. I had undertaken a tour of the Nagar District some months ago but unfortunately, the police promulgated Section 144 and hence, public meetings were out of the question. But I had long chats with the farmers, whose response was enthusiastic. I see that there are very few high schools in your district. Self-reliant and self-respecting education from the primary to the collegiate levels is the need of the day. Many more such high schools must be opened in your district. Fortunately, the President of the Nagar District Local Board (Smt Hirabai Bhapkar) has held forth a fine promise for me and my Sanstha. So, I have great pleasure in declaring that, with the willing cooperation of herself and of her colleagues, I shall be able to translate my promise into reality soon.

I thank Smt Bhapkar and all her colleagues, the members of the Nagar District Local Board, for the rousing reception they have given to us this evening!

From the Daily Dnyanprakash, 23 March 1949

Self-Help and Dignity of Labour

Satara
23 March 1951

The Bountiful Banyan: Biography of Karmaveer Bhaurao Patil, by Barrister P.G. Patil, Macmillan Publishers India; First edition (2000) Vols. 1-4. Vol. 2 and Vol. 3.

To,
The Honorable Shri K.M. Munshi
The Minister of Food and Agriculture
Government of India
New Delhi

Sir,

My delight knew no bounds when I read in a newspaper that you have prepared a scheme to make the college residential students self-sufficient by way of food by producing the same and you have sent the said scheme to different universities. I heartily congratulate you on this novel and essential experiment in the educational system.

You know that I have been working in the field of education for the last 25 years, through the Rayat Shikshan Sanstha, Satara. My Sanstha has been conducting one Arts College at Satara, which is free from tuition fees and completely residential. In respect of the scheme you proposed, I assure you that I shall make this scheme a complete success in this college. The only thing the Sanstha requires in this respect is land in order to produce food. There are central government lands and the Bombay State's lands, waste as well as agricultural, just near the college. If sufficient acres of land be given to our Sanstha, the Sanstha will not only make this scheme a success but it will produce food sufficient for the students concerned.

The idea underlying your scheme is a cherished idea of mine and I am very much delighted to know that it will now become prevalent in India. I give my assurance to you that I shall try my best to make this scheme a complete success as far as our college is concerned. I shall also see that the same principle is successfully worked out in the field of secondary education also. I am sure that the principle of self-help and the dignity of labour underlying this scheme will go a long way to solve the food problem of our nation.

Our Sanstha has developed its activities in different spheres. This development is due to an encouragement once given to me by the late Shri A.B. Latthe and yourself. From the report I am sending herewith, you can see the working and the development of our Sanstha.

I am personally acquainted with you for many years. You have taken in hand this matter for which I have got a personal liking. I am very much delighted to know of the same and hence, in order to give vent to my delight, I venture to write this personal letter. I shall be greatly obliged if you kindly send me a copy of the said scheme.

Please convey my sincerest regards to Saubhagyavati Lilavati Munshi.

Hoping to be excused,

Yours sincerely,
Bhaurao Patil
Rayat Sevak

Spread of the Sanstha's High Schools in the Ahmednagar District

The Ahmednagar District is divided into two clear cut sections-one irrigated and rich, the other drought-affected and poor (Nagar, Shrirampur, Rahuri, Kopergaon irrigated, and Parner, Jamgaon, Karjat, etc., unirrigated.) The Rayat Shikshan Sanstha had no schools of its own in this district till 1948. Then Anna came into contact with a dynamic person from Karjat Taluq, Shri Dadasaheb Patil of Taldi Khandeshwari and the educational work of the Sanstha got a good fillip here.

Because of irrigation facilities, many farmers took to sugarcane cultivation in the four rich Taluqs mentioned above. Nagar District has about 5-6 cooperative sugar factories currently. Another dynamic personality from this area was Padmashri Vikhe Patil of Loni Budruk. He was a

simple farmer, with drive, initiative and zeal. He was an active cooperator. He dreamt of opening a cooperative sugar factory at Pravaranagar. Many people made fun of him but, undaunted, he went ahead with it, and with the cooperation of Vaikunthlal Mehta, Dr Dhananjayrao Gadgil and others, he succeeded in starting the first cooperative sugar factory at Pravaranagar in 1950. Karmaveer Bhaurao Patil used to hear of this useful work through Dr Gadgil and was interested in it.

Once Karmaveer Bhaurao Patil asked Shri Bapusaheb Nalavade if he knew any influential farmer from the Satara District who had migrated to Nagar for agricultural purposes. Shri Nalavade knew one Shankarrao Eknathrao Dhumal, a rich farmer and his relations. Anna made a mental note of it and when he went on a tour of the Nagar District, he saw Shri Dhumal and gave him an account of his educational work and requested him to extend full cooperation to him in his mission to be undertaken in the Nagar District. Shri Dhumal was pleased to know of the good work being done by Karmaveer Bhaurao Patil in the Satara District, and promised his fullest cooperation to him in his work.

Shri Dhumal then introduced Karmaveer Bhaurao Patil to the influential sugarcane growers at Pravaranagar and other main centres. All of them were deeply impressed by Karmaveer's beard, his vow of going bareheaded and barefooted and the noble work he was doing in the field of mass education-all these appealed to the people most powerfully and they promised to help him in his work in the Nagar District. Shri Dhumal also introduced Karmaveer Bhaurao Patil to Padmashri Vikhe Patil, the founder of the Pravaranagar Sugar Factory and an active cooperator from that area. When Shri Dhumal gave a graphic description of Anna's work to Vikhe Patil, he was so overwhelmed by it all that he actually prostrated himself before Karmaveer Bhaurao Patil in the factory in the presence of many directors. Everyone was greatly impressed with Anna's good work. Then Anna took Vikhe Patil into his confidence and told him that he wanted to open a number of high schools in the Nagar District on the principle of self-help-as practised in his schools in the Satara District.

Just then, a meeting of the Board of Directors of this factory was scheduled to be held at Pravaranagar, under the Chairmanship of Dr D.R. Gadgil at the Gokhale Institute, Poona. Anna placed before him his novel idea. He wanted to open a number of high schools in the Nagar District. This work would require funds, but he did not want to tax the pockets of the rich landlords only. He expected every sugarcane grower supplying his cane to the Pravara factory to contribute 4 annas per tonne of cane thus supplied to the factory. That was all. It would not be too much taxation for the cane-growers, and if everyone accepted this principle, Bhaurao would get a few thousand rupees every season-which could be utilized for running these high schools. Dr Gadgil's first reaction was a little cold. 'It is a matter to be decided by the Board of Directors. I won't press this point with them. Personally, I feel that they won't accept my advice in this behalf.' At this, Anna said that he would meet the different cane-growers individually and try to persuade them to accept his proposal. He would request the members of the Board to table a resolution to that effect at the forthcoming meeting. 'My personal request to you is that you should not raise any objection to such a resolution on technical grounds. Let it be discussed freely and it will be accepted by a majority of the Board members.' Dr Gadgil agreed to do so, as per the request of Karmaveer Bhaurao Patil.

In the meanwhile, Karmaveer Bhaurao met Shri Dhumal and Shri Vikhe Patil, explained the proposal of a levy of 4 annas per tonne, and requested both of them to use their good offices to persuade the other board members to toe the

line. They gladly agreed to it. He also met a number of the other shareholders and explained his proposal at great length to them.

The resolution was duly moved at the said meeting. Dr Gadgil and Vikhe Patil solidly supported it, speaking highly of the self-sacrificing nature of Karmaveer Bhaurao's work in the field of mass education. All the directors were duly impressed and the resolution was passed unanimously. Karmaveer Bhaurao Patil was waiting anxiously for the result in the office of the sugar factory. After the meeting was over, Dr Gadgil met Anna, patted him on his back warmly and congratulated him on the success of his proposal. Anna thanked Dr Gadgil profusely for his timely help. He also thanked all the members of the Board of Directors for their loyal support.

The Pravaranagar Sugar Factory was a pioneer in the field of cooperative enterprise in Maharashtra. Formerly, the so-called economists and experts used to make fun of these simple farmers attempting to start a cooperative sugar factory. Shri Raja Mangalwedhekar in his inspiring biography of Padmashri Vikhe-Patil, *Bhoomi-Putra* (Son of the soil) has given a graphic account of the untiring efforts of Vikhe Patil in realizing his dream. This initial example was later on copied by other sugarcane growers in the Nagar District and a number of cooperative sugar factories were established there by these farmers during the course of the next 8-10 years. A large part of the credit must be given to Dr Gadgil and Padmashri Vikhe Patil for their guidance and assistance to these budding factories.

The proposal of levying an education cess to the tune of annas 4 per tonne was accepted willingly and also implemented sincerely by the Pravara-nagar Sugar Factory. The other cooperative sugar factories used to look to Dr Gadgil and his Gokhale Institute for guidance in their endeavour. All the other .sugar factories in the Nagar District followed the good example of the Pravara Factory and, thus, a handome amount was collected from the sugarcane growers for the day-to-day expenses as also for the capital construction of the Sanstha's high schools opened in that area from that time onwards. The shareholders and others supplying cane to the factories used to sign letters of authority, authorizing the factory to deduct the amount at the rate of 4 annas per tonne for the gross-tonnage supplied by them to the factories. The factories would then remit this amount to the various high schools of the Sanstha situated in their areas. In some villages, primary schools were started by the Sanstha in addition to the high schools. The children of the factory workers and labourers were the chief beneficiaries. This was a unique educational experiment in India. It shows the brilliant brainwave of Karmaveer Bhaurao Patil in conceiving such an idea and in getting it sanctioned by the Board of Directors of the different factories. Anna used to think of his Sanstha by day, and dream of it by night. Hence, he could hit upon such brilliant ideas and proposals for the development and expansion of his institutions. Some of the high schools which were in receipt of such aid were as follows:

1. Pravaranagar High School, Pravaranagar, Taluq Shrirampur.
2. Chhatrapati Shivaji Maharaj High School at Vadala Mahadev, Taluq Shrirampur.
3. Chhatrapati Shivaji Vidyalaya at Kolpewadi, Taluq Shrirampur.

From Vol. 3:
Bhaurao's Letter to Mahatmaji

17 July 1944

Dear Mahatmaji,

I understand that it is not good to put a great man like yourself, busily engaged in solving the great problem of independence of India and that of worldpeace, to great trouble and inconvenience

by making you go through my letter. However, in my humble opinion, I will fail to do my duty if I do not write it.

I was overjoyed to read in newspapers that you were to come down to Panchgani, a village in my Satara District. I was very anxious to participate in the hearty welcome that was accorded to you at Wai and Panchgani. I was still more desirous to see you personally, if allowed, and lay before you a short report of the educational services rendered to the poor Rayats of Maharashtra in general and Satara District in particular during the last 25 years. But I am very sorry to write that I could do neither, as I have been confined to bed for the last complete one month on account of severe pain in legs due to rheumatism. I cannot even stand up. I shall have to lie in this condition for a month or more, in the opinion of doctors. Thus, physically being quite helpless, I am paying my respects to you through words and adding a few words more regarding the work that I have been able to do, with your everlasting blessings, as under:

Let me remind you of your visit so kindly paid to the Shri Chhatrapati Shahu Boarding House, Satara, the first branch of the Rayat Shikshan Sanstha, Satara on 25 February 1927, when the name-giving ceremony was successfully carried out at your auspicious hands. The seed then sown by you-I am glad to tell you-has now grown into a tree. The Rayat Shikshan Sanstha, Satara, which is the mother institution, is at present, conducting different branches namely; (1) Shri Chhatrapati Shahu Boarding House (2) Union Boarding House, Poona, (3) Silver Jubilee Rural Training College, (4) Kale Memorial Practising School, (5) Primary Schools Committee, (6) Maharaja Sayajirao Free and Residential High School, (7) Jijamata Adhyapika Vidyalaya, (8) Laxmibai Patil Vasatigrih, (9) Lonand A. V School and (10) Ashta A. V School. The budget of the Sanstha during the last year was of Rs 2,50,000 for all its branches: The network of the Sanstha is practically spread all over the Satara District, because the Sanstha has opened 425 primary voluntary schools in small villages in the backward hilly and dry areas of this District.

The Chhatrapati Shahu Boarding House, Satara, which was started in 1924 with one Harijan boy, now has 272 students belonging to all castes, including Muslims. Jains, and Christians, There are 134 backward class students, 121 of them belonging to the scheduled castes. The boarding house has produced nearly 160 matriculates and 35 graduates and double-graduates out of whom 13 have become life members of the Sanstha. Further, they have undertaken to do any kind of work for the Sanstha on any salary that it can afford to pay. Out of these 13 members, 5 are Marathas, 2 Salis, 1 Shimpi, 1 Koshti, 1 Dhangar, 1 Mang, 1 Mahar and 1 Muslim. These life members are looking after the managements of different branches of the Sanstha. The students do physical work on the farm, etc., and produce vegetables for themselves.

The Sanstha is of the firm opinion that well-trained primary teachers alone can be proper guides in villages in every respect. So, if we take sufficient care to produce deserving village-guides, i.e. primary teachers, all national problems will take care of themselves. The Sanstha, therefore, started a primary training college to train such deserving teachers in 1935 with 7 students only; but now there are about 200 teachers, including 15 per cent backward class students, 60 per cent intermediate and 25 per cent comprising the rest. The college has, uptil now, trained about 750 teachers.

The Kale Memorial Practicing School (Primary School), Satara was started in June 1936 in commemoration of the late Rao Bahadur R.R. Kale, Satara who took a keen interest in the activities of the Sanstha and made a Trust of Rs 10,000 for the Sanstha. There are about 200 boys out of whom 90 per cent belong to backward and intermediate classes. Agricultural bias has been

introduced here since June 1942. The education here is absolutely free; moreover all the teachers are trained.

According to the Mass Literacy Scheme that was launched by the Congress Ministry in 1938, the Sanstha began to open new primary schools in villages where the District School Board had not opened any before. At present, 425 such schools are conducted by the Sanstha in all the Taluqs, particularly in Jawali, Patan, Man and Khatav of the Satara District. Nearly 14,000 children, including 95 per cent backward class and intermediates are being educated in all these schools by 513 teachers. In the opinion of government supervisors, these schools are managed better than those conducted by the District School Board.

In order to make secondary education cheap and available to poor but deserving students of the masses, the Sanstha has started the Maharaja Sayajirao Free and Residential High School in June, 1940, in memory of the late Shri Sayajirao Maharaja of Baroda who, when living, supported the idea of this high school and promised to render every possible help to it. Now the school is recognized and it teaches up to the Matric class. No fees are charged to any students for education. However, every student has to put in physical labour for two hours daily instead. Being residential, all students stay in the residency of the high school and thus, they are under control and care of the staff for 24 hours of the day. There are about 150 students, including 90 per cent. backward and intermediate classes, and 10 per cent the Muslim and the rest.

The Sanstha firmly believes that the well-educated women alone will teach lessons of humanity to men and bring about real progress in society. With this high aim in view, the Sanstha has started, since June 1942, the Jijamata Adhyapika Vidyalaya, Satara, for producing model primary lady teachers, good wives, mothers and good lady guides. It is named after Jijamata, the mother of Shivaji the Great. There are three classes and the total number of lady students is 31 including 6 backward class, 15 intermediate, 9 advanced class students and 1 comprising the rest. The Vidyalaya has been recognized by the Government Educational Department. The Sanstha spends about Rs 10,000 every year on it. The Sanstha has attached a female hostel, namely Laxmibai Patil Vasatigrih, Satara to this Vidyalaya. It is named after my wife who spent everything she possessed, including 50 tolas of gold in the form of ornaments and even the sacred Mangal Sutra, for the Sanstha. She left this world 12 years back. This hostel has been recognized by the Backward Class Department and is run on cosmopolitan lines. There are 30 girls, including 18 backward class girls, 6 intermediate, 1 Jain, 3 Muslims, and 2 Christians. The Sanstha has to spend about Rs 6,000 every year on this hostel. The girls have to do grinding, cooking, cleaning and washing, etc., for themselves turn by turn. Here no servant is employed for any work of the girls. The Sanstha has opened two A.V. Schools in the mofussil at Lonand and Ashta in this District from this year.

In my humble opinion, the institutions started for girls, namely Jijamata Adhyapika Vidyalaya and Laxmibai Patil Vasatigrih, Satara in 1942 are worth seeing. I, therefore, request you to find the time for paying a kind visit to both of these institutions which are located in one and the same building in the heart of Satara city. I would like to press you strongly to come to visit these two institutions if you definitely come to Satara.

Hoping to be excused for the trouble.

Yours obediently,
Sd/-
Bhaurao Patil

Letter from Shri V.S. Khandekar to Bhaurao

Kolhapur
2 January 1958

Dear Karmaveer Bhaurao,

I write this to tell you that the two hours I spent in your company, when you took me round the various branches of your Rayat Shikshan Sanstha last Monday, will always be treasured by me as most significant. I say that your Rayat Shikshan Sanstha is a place of pilgrimage and it takes its rightful place in the long list of such holy centres in the whole of our country. All of us have read of the brave exploits of King Bhagirath who brought down the Ganges from the high heavens for redeeming his own ancestors. You have excelled King Bhagirath (in that you have brought down the Ganges not for personal redemption but for the redemption and amelioration of thousands of poor but deserving pupils of the masses of Maharashtra). I pray to the Almighty to grant you a long life of fruitful service of the lowest the lowliest and the lost in our country.

May it banish all ignorance, poverty, superstition and mental sloth of the masses in the years to come!

Kindly take care of yourself.
What more can I say now?

Yours sincerely,
Sd/-
V S. Khandekar

The Dussehra Gathering at the Maratha Mandir, Bombay

The Maratha Mandir, Bombay, a social and cultural organization, used to celebrate the Dussehra festival by holding a huge public meeting in Bombay. The organizers had invited Karmaveer Bhaurao as the chief speaker on one occasion. Shri Yashwantrao Chavan, the Chief Minister of Bombay State, was to preside over the function. Shri Mansingrao Jagtap, a leading social worker of Bombay (who hailed from Kenjal, a small village in the Satara District) was also to be felicitated at that function.

Now, those were the hectic days of the Samyukta Maharashtra Movement. Public feelings were running at high tension on this issue. Shri Chavan was supporting the official policy of the Congress High Command, which was antagonistic to Samyukta Maharashtra. As a result, Shri Chavan had become very unpopular with the general public in Maharashtra. It was against this background that the Dussehra Sammelan was being held at the Maratha Mandir.

Karmaveer Bhaurao's views on this issue were all too patent and well known. He stood for Samyukta Maharashtra at any cost and at the earliest. Though he held such strong views, his position as the founder of the Rayat Shikshan Sanstha imposed, perforce, certain restrictions on his activities and utterances. But Anna was not one to be much bothered by such considerations. Whenever he found it possible to air his views on this subject, he expressed them bluntly and gruffly. This used to antagonize him to the Congress leadership in Maharashtra. But Anna could not care less. He said:

Dussehra has a special significance in our mental and spiritual make-up in Maharashtra. It represents the victory of good over evil-of Rama over Ravana. It was on this auspicious day that the Maratha warriors used to sally forth on their conquests, after the long enforced inactivity during the monsoon months. We also give the leaves of the shami (Apta) tree as 'gold' to our friends and relations on this sacred day. But all these customs have lost their original significance and we continue to observe them as empty symbols. When we haven't got even a gram of gold in our home, what is the propriety of exchanging such 'leaves' with our friends and relations? This thought should make us sober, introspective and considerate.

How have we come to this pitiable pass? The British conquered us— not because they were superior to us in every field but because of internal dissensions and quarrels. We could not present a united front to them. Indian society had lost its homogeneity long ago and we were fragmented into various castes and creeds. The Brahmins had kept all the learning to themselves and the vast masses of people were cruelly deprived of the healing balm of education. Mahatma Phule was the first Indian thinker who raised his powerful voice on behalf of the common man against these injustices. His evidence before the Hunter Commission on Education (1882) deserves to be studied carefully by all of us. He requested the British Government to provide free and compulsory primary education to all the children in the land, say up to the age of fourteen. That dream of that great visionary has not materialized even a hundred years after his evidence was tendered to the Hunter Commission.

Far be it from me to blame any particular government or section of society for this sorry spectacle. We are all partly responsible for it. We cannot absolve ourselves of its guilt and onus. I had worked as a fiery Satya Shodhak agitator for more than 15 years in western Maharashtra. I tried to arouse the people to their perilous predicament through public meetings and also through S.S. *jalsa*. Not many of you would know that I used to play on the dulchi in the S.S. *jalsa* for many years. That is how I was able to enter the hearts of the common people in Maharashtra.

Taking a cue from my mentor, Rajarshi Shahu Chhatrapati of Kolhapur, I started the Shahu Boarding House at Satara in 1924. Before that, I had worked as the Sales Promoter of the Kirloskars and Ogles and as a partner with D.B. Cooper at Satara Road. I was entrusted the job of popularizing the iron ploughs produced by the Kirloskars and Cooper, respectively. But when I realized that these industrialists were not keen on helping the children of the workers in their iron factories to get education, I severed my connections with them. My propaganda work of the S.S. Samaj brought home to me starkly the colossal poverty and ignorance of the farmers in Maharashtra. Their squalor, ignorance, superstition, indebtedness, fatalist attitude-all these were shocking. So I decided to devote my whole life to the cause of promotion of mass education. I founded the Rayat Shikshan Sanstha at the annual conference of the S.S. Samaj held at Kale, near Karad, on Dussehra day in 1919. I am ever so happy to be able to narrate this incident on another Dussehra day today.

Students from all castes are admitted to my boarding house. No caste or creed distinctions have been observed by the pupils right from the beginning. I insisted that the students must earn their education by the sweat of their brows. So, 'Education through self help' is the motto of my Sanstha. Children of poor parents must not be deprived of the benefits of education. They have to do 'manual labour' in the hostel everyday. They do their own cooking and serving. They live together as blood brothers.

I am happy to state that the christening ceremony of my boarding house was performed at the hands of Mahatma Gandhi on 25 February 1927 at Satara. When Gandhiji saw the name of Shahu Maharaj on the name-board, he asked me, 'How much donation , has the Maharaja given you?' I said, 'Not a pie, Bapuji, but I have derived my inspiration for my cause from his illustrious example in the Kolhapur state.' Today, my Sanstha runs more than a hundred high schools, seven training colleges, a number of hostels, Sanskar Kendras and three colleges (2 Arts and Science and one B.Ed.). I am an humble follower of Mahatma Gandhi, but I have been deeply influenced by the illustrious examples of Mahatma Phule, Shahu Maharaj, Maharshi Vithal Ramji Shinde, Sadguru Gadge Maharaj, Booker T. Washington (the Americal Negro educator) and others. The annual budget of my Sanstha runs

into lakhs of rupees, but at the end of the financial year, the bank balance is nil. When I met Mahatma Gandhi at the Parnakuti (the palatial bungalow of the Thackerseays) on a hillock in the Yeravada area of Poona (near the Bund Garden), he asked me how much bank balance my boarding house had. I replied that it was nil. (there being no bank account, the question of a bank balance didn't arise.) Gandhiji turned to Vallabhbhai Patel and said, 'Note this austere example. This institution will go far. Institutions banking on a fat bank balance come to grief soon.' It is my firm faith that no worthwhile work will ever be suffered by God to perish for want of finances. The common people are the final arbiters and judges of our mission. Once they are convinced of the justice and usefulness of a cause, they will always rally round you and see to it that your work does not suffer. This has been my experience again and again all along my life in my Sanstha. It is truly a wonder as to from where the finances are furnished. Government grants are there, but they account for a fraction of the total expenditure. Education has to be self-supporting and partially productive. That is the basic philosophy of Gandhiji's Wardha Scheme of Education (Basic Education). Unfortunately, we defeated it in its implementation. I have always emphasized the importance of Manual Labour in my institutions. Only a student who puts in hard labour (for 3-4 hours a day) on the college farm, gets free education and also free meals in return for it. And a number of needy students are availing themselves of this facility. That seems to me to be the solution in a poor country like ours. I have always declared, 'Give me wasteland and I will turn it into the best land,' 'Rub your hands with the land' is my advice to my young students.

The caste system in India is the root cause of these ills. He who first invented it put stones round our necks and ensured the fragmentation of Indian society for all times. We have to end it at all costs. The Buddha tried to end it. Shivaji the Great, Mahatma Phule, Shahu Maharaj, Maharshi Shinde, Sadguru Gadge Maharaj, Dr Ambedkar and most of all, Mahatma Gandhi, in modern times, waged a ceaseless war against the caste system. But so deep-rooted is the poison that it refused to yield to treatment. I am trying to eradicate the caste system in hundreds of my boarding houses, where students are admitted irrespective of their caste, creed or colour; where they live together, cook and eat together, study together and thus imbibe true national integration. Fraternal ties are developed in their minds and they last a whole lifetime. In a small way, I am trying to unify this fragmented society into one harmonious whole. Marathas, Jains, Mahars, Malis, Salis, etc., from the same village live together as blood brothers in my hostels and the success of this experiment of mine is the hope of India's tomorrow.

'There was some misunderstanding between the Government of Bombay and me. To put it bluntly, the government went out of its way to misunderstand me in a controversy after the assassination of Mahatma Gandhi. It stopped the payment of its grants-in-aid to my schools and colleges. A great hardship was caused to our teachers and students for more than a year, but I refused to yield because I was convinced of the justice of my stand. The common people stood by my Sanstha most heroically through this trying period and the government had to retract and withdraw its unjust order. My mentor, Shahu Maharaj of Kolhapur used to declare, 'I will break but shall not bend'. I tried to put it in practice and it succeeded.

The Marathas are the dominant caste in Maharashtra. But they should please try to forget the days of social, political and cultural domination now. New times have rendered all that anachronistic. If the Marathas and the Mahars and, along with them, all the untouchables come together, cooperate with one another, forgetting the many sins of omissions and commissions of the past and turn over a new leaf, they will write

a golden chapter in the history of modern India. This is not an idle dream, nor a reverie or even a daydream. I have faith that such a fulfilment will take place within the not too distant future: In that case, the whole of India will be the beneficiary of such a unification of the hearts. The common people are willing to cooperate, but it is the politicians also who must come forward and help hasten the process of unification and integration.

I am grateful to you for having invited me to address you on this auspicious occasion. Dussehra is usually celebrated as a day of 'crossing the frontiers'. Let us resolve this day to cross the various frontiers between man and man and step out into a world which will be truly one and indivisible. Nothing could be more precious than that.

Shri Mansingrao Jagtap was felicitated for his social work spanning a quarter of a century. He was given a small clay statue of Chhatrapati Shivaji Maharaj as a memento. He also addressed the gathering and at the end, handed over the statue of Shivaji Maharaj to Shri Y.B. Chavan for safe keeping. Shri Yashwantrao also spoke very appealingly on that occasion. He recalled the difficult days referred to by Karmaveer Bhaurao Patil in his speech and observed that he was rendered helpless because of his own limitations and political compulsions. 'But I am happy that the controversy ended on a happy note.' He offered the statue of Shivaji Maharaj to Anna. Anna rose and said, 'Thank you, Yashwantarao, kindly keep the statue for yourself. You are passing through a political crisis and the same will be a source of secret inner strength to tide over these difficult times. It will inspire you. Once the crisis is over, I shall come to 'Sahyadri'. (the then official residence of the C.M. of Maharashtra) and take it away to Satara from you.

But just now, its rightful place is at 'Sahyadri'. There was a thunderous applause at this exchange and Yashwantrao gracefully submitted to Anna's wishes. Samyukta Maharashtra (with Bombay as its capital) became a reality on I May 1960, but the Karmaveer had breathed his last on 9 May, 1959. So, though the statue of Shivaji Maharaj could not be claimed back by Anna at that time, his words proved prophetic in more senses than one. That is why it is said about the sages - *Wachmarthoonudhavati'* (sense runs after their utterance).

Every way, the Dussehra Sammelan proved a truly memorable occasion. I had the first hand information from Anna on his return from Bombay when he recounted the details to Shri Bapusaheb Nalavade, the Sanstha President and a few other senior life members. I checked it up with Shri Mansingrao Jagtap, Shri Mane Master, Barrister M.G. Mane, Shri Singte Master, Shri M.V. Kale, Shri D.M. Shinde and others. I am so happy that the occasion supplied a suitable pretext for Anna to put on record some of his most pertinent and precious thoughts on the burning problems of the day. On such occasions, we feel the gods throw incense on us.

Dr D.R. Gadgil on Bhaurao's Educational Philosophy

As pointed out above, Karmaveer is essentially in the old social reform tradition. He exhibits the earnestness and high seriousness of purpose, the essentially religious attitude, the deep sympathy with the oppressed and the poor, which are characteristics of that tradition. He exhibits, in his own life, an austere simplicity of living which also is a part of that tradition and is an essential requisite for popular appreciation in India. Also, in common with founders of the Poona Education Societies, Karmaveer has been more concerned with the organization of education than with its content, more concerned with the problem of running institutions than with, say pedagogics. This has had one notably unfortunate consequence. His remarkable experiments and experiences in self-help and productive activity for

students have not been studied in their economic, educational or psychological aspects. They are, thus, not sufficiently known even to educationists in the country, and the full value of their results can yet be hardly appreciated.

Bhaurao is essentially a practical idealist. While not given to theoretical formulations, he has an uncanny ability to find practical solutions to each problem and yet make no compromises which will take him away from his main purpose. In Maharashtra, he is today the personal embodiment of a great tradition holding forth a message of hope.

For the country at large, Bhaurao's work is valuable, at least in two important directions. Firstly, he has given practical demonstration, over years, of a fruitful, perhaps the only effective approach—in the long run—to the key problem of a society dominated by the hierarchy of caste. To denounce caste or to deny it is easy enough. In certain circles, in close coteries or interest groups it may even appear as if caste has, at least temporarily, lost its influence. All this is superficial and self-deceiving. What is important is to recognize it for the living and potent force that it is, and to bring up the younger generation, at least partly, in an environment where they see it purposefully and habitually ignored. It is only such open and deliberate effort conducted over a length of time that could slowly eradicate the conscious and unconscious effects of caste on our society. It is a great thing to have had the demonstration of these efforts of Bhaurao, and to realize, in particular, that they have been made in the rural mass medium which ultimately is the medium in which all our efforts have to be proved.

Secondly, Bhaurao has shown how it is possible to build, what is virtually a system of rural education, from the primary stage to the university, which, on the one hand, requires no more state aid or assistance than is available today, and, which not only retains the educand in the country environment, but also inculcates in him habits of manual work and self-help. It is generally agreed upon that the main characteristics required in an Indian system of rural education are precisely those which have been prominent in Bhaurao's pattern. And the great merit of his achievement is that it has been accomplished with no special advantages of money or talent, and that it has shown itself capable of being replicated in varying circumstances.

THE RIGHT OF CHILDREN TO FREE AND COMPULSORY EDUCATION ACT, 2009 35 of 2009
[AS ON 01.05.2014]

[26th August, 2009]

An Act to provide for free and compulsory education to all children of the age of six to fourteen years. Be it enacted by Parliament in the Sixtieth Year of the Republic of India as follows:-

1. Short title, extent and commencement: (1) This Act may be called the Right of Children to Free and Compulsory Education Act, 2009.

(2) It shall extend to the whole of India except the State of Jammu and Kashmir.

(3) It shall come into force on such date[1] as the Central Government may, by notification in the Official Gazette, appoint.

[2][(4) Subject to the provisions of articles 29 and 30 of the Constitution, the provisions of this Act shall apply to conferment of rights on children to free and compulsory education

(5) Nothing contained in this Act shall apply to Madras as, Vedic Pathsalas and educational institutions primarily imparting religious instruction.]

2. Definitions: In this Act, unless the context otherwise requires,-

(a) "appropriate Government" means-

(i) in relation to a school established, owned or controlled by the Central Government, or the administrator of the Union territory, having no legislature, the Central Government;

(ii) n relation to a school, other than the school referred to in sub-clause (i), established within the territory of-

(A) a State, the State Government;

(B) a Union territory having legislature, the Government of that Union territory;

(b) "capitation fee" means any kind of donation or contribution or payment other than the fee notified by the school;

(c) "child" means a male or female child of the age of six to fourteen years;

(d) "child belonging to disadvantaged group" means [3][a child with disability or] a child belonging to the Scheduled Caste, the Scheduled Tribe, the socially and educationally backward class or such other group having disadvantage owing to social, cultural, economical, geographical, linguistic, gender or such other factor, as may be specified by the appropriate Government, by notification;

(e) "child belonging to weaker section" means a child belonging to such parent or guardian whose annual income is lower than the minimum limit specified by the appropriate Government, by notification;

[4][(ee) "child with disability" includes,-

(A) a child with "disability" as defined in clause (i) of section 2 of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995,

1 of 1996

(B) a child, being a person with disability as defined in clause (j) of section 2 of the National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999;

44 of 1999

(C) a child with "severe disability" as defined in clause (o) of section 2 of the National Trust for Welfare of Persons with

Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999.]

44 of 1999

(f) "elementary education" means the education from first class to eighth class;

(g) "guardian", in relation to a child, means a person having the care and custody of that child and includes a natural guardian or guardian appointed or declared by a court or a statute;

(h) "local authority" means a Municipal Corporation or Municipal Council or Zila Parishad or Nagar Panchayat or Panchayat, by whatever name called, and includes such other authority or body having administrative control over the school or empowered by or under any law for the time being in force to function as a local authority in any city, town or village;

(i) "National Commission for Protection of Child Rights" means the National Commission for Protection of Child Rights constituted under section 3 of the Commissions for Protection of Child Rights Act, 2005;

4 of 2006

(j) "notification" means a notification published in the Official Gazette;

(k) "parent" means either the natural or step or adoptive father or mother of a child;

(l) "prescribed" means prescribed by rules made under this Act;

(m) "Schedule" means the Schedule annexed to this Act;

(n) "school" means any recognised school imparting elementary education and includes-

(i) a school established, owned or controlled by the appropriate Government or a local authority;

(ii) an aided school receiving aid or grants to meet whole or part of its expenses from the appropriate Government or the local authority;

(iii) a school belonging to specified category; and

(iv) an unaided school not receiving any kind of aid or grants to meet its expenses from the appropriate Government or the local authority;

(o) "screening procedure" means the method of selection for admission of a child, in preference over another, other than a random method;

(p) "specified category", in relation to a school, means a school known as Kendriya Vidyalaya, Navodaya Vidyalaya, Sainik School or any other school having a distinct character which may be specified, by notification, by the appropriate Government;

(q) "State Commission for Protection of Child Rights" means the State Commission for Protection of Child Rights constituted under section 3 of the Commissions for Protection of Child Rights Act, 2005.

4 of 2006

3. Right of child to free and compulsory education: [5][(1) Every child of the age of six to fourteen years, including a child referred to in clause (d) or clause (e) of section 2, shall have the right to free and compulsory education in a neighbourhood school till the completion of his or her elementary education.] [6]*

[7][(3) A child with disability referred to in sub-clause (A) of clause (ee) of section 2 shall, without prejudice to the provisions of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995, and a child referred to in sub-clauses (B) and (C) of

clause (ee) of section 2, have the same rights to pursue free and compulsory elementary education which children with disabilities have under the provisions of Chapter V of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995:

1 of 1996

Provided that a child with "multiple disabilities" referred to in clause (h) and a child with "severe disability" referred to in clause (o) of section 2 of the National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999 may also have the right to opt for home-based education.]

44 of 1999

4. Special provisions for children not admitted to, or who have not completed, elementary education: Where a child above six years of age has not been admitted in any school or though admitted, could not complete his or her elementary education, then, he or she shall be admitted in a class appropriate to his or her age:

Provided that where a child is directly admitted in a class appropriate to his or her age, then, he or she shall, in order to be at par with others, have a right to receive special training, in such manner, and within such time-limits, as may be prescribed:

Provided further that a child so admitted to elementary education shall be entitled to free education till completion of elementary education even after fourteen years.

5. Right of transfer to other school: (1) Where in a school, there is no provision for completion of elementary education, a child shall have a right to seek transfer to any other school, excluding the school specified in sub-clauses (iii) and (iv) of clause (n) of section 2, for completing his or her elementary education.

(2) Where a child is required to move from one school to another, either within a State or outside, for any reason whatsoever, such child shall have a right to seek transfer to any other school, excluding the school specified in sub-clauses (iii) and (iv) of clause (n) of section 2, for completing his or her elementary education.

(3) For seeking admission in such other school, the Head-teacher or in-charge of the school where such child was last admitted, shall immediately issue the transfer certificate:

Provided that delay in producing transfer certificate shall not be a ground for either delaying or denyingadmission in such other school:

Provided further that the Head-teacher or in-charge of the school delaying issuance of transfer certificate shall be liable for disciplinary action under the service rules applicable to him or her.

6. Duty of appropriate Government and local authority to establish school: For carrying out the provisions of this Act, the appropriate Government and the local authority shall establish, within such area or limits of neighbourhood, as may be prescribed, a school, where it is not so established, within a period of three years from the commencement of this Act.

7. Sharing of financial and other responsibilities: (1) The Central Government and the State Governments shall have concurrent responsibility for providing funds for carrying out the provisions of this Act.

(2) The Central Government shall prepare the estimates of capital and recurring expenditure for the implementation of the provisions of the Act.

(3) The Central Government shall provide to the State Governments, as grants-in-aid of revenues,

such percentage of expenditure referred to in sub-section (2) as it may determine, from time to time, in consultation with the State Governments.

(4) The Central Government may make a request to the President to make a reference to the Finance Commission under sub-clause (d) of clause (3) of article 280 to examine the need for additional resources to be provided to any State Government so that the said State Government may provide its share of funds for carrying out the provisions of the Act.

(5) Notwithstanding anything contained in sub-section (4), the State Government shall, taking into consideration the sums provided by the Central Government to a State Government under sub-section (3), and its other resources, be responsible to provide funds for implementation of the provisions of the Act.

(6) The Central Government shall-

(a) develop a framework of national curriculum with the help of academic authority specified under section 29;

(b) develop and enforce standards for training of teachers;

(c) provide technical support and resources to the State Government for promoting innovations, researches, planning and capacity building.

8. Duties of appropriate Government: The appropriate Government shall-

(a) provide free and compulsory elementary education to every child:

Provided that where a child is admitted by his or her parents or guardian, as the case may be, in a school other than a school established, owned, controlled or substantially financed by funds provided directly or indirectly by the appropriate Government or a local authority, such child or his or her parents or guardian, as the case may be, shall not be entitled to make a claim for reimbursement of expenditure incurred on elementary education of the child in such other school.

Explanation--The term "compulsory education" means obligation of the appropriate Government to-

(i) provide free elementary education to every child of the age of six to fourteen years; and

(ii) ensure compulsory admission, attendance and completion of elementary education by every child of the age of six to fourteen years;

(b) ensure availability of a neighbourhood school as specified in section 6;

(c) ensure that the child belonging to weaker section and the child belonging to disadvantaged group are not discriminated against and prevented from pursuing and completing elementary education on any grounds;

(d) provide infrastructure including school building, teaching staff and learning equipment;

(e) provide special training facility specified in section 4;

(f) ensure and monitor admission, attendance and completion of elementary education by every child;

(g) ensure good quality elementary education conforming to the standards and norms specified in the Schedule;

(h) ensure timely prescribing of curriculum and courses of study for elementary education; and

(i) provide training facility for teachers.

9. Duties of local authority: Every local authority shall: (a) provide free and compulsory elementary education to every child:

Provided that where a child is admitted by his or her parents or guardian, as the case may be, in a school other than a school established, owned, controlled or substantially financed by funds provided directly or indirectly by the appropriate Government or a local authority, such child or his or her parents or guardian, as the case may be, shall not be entitled to make a claim for reimbursement of expenditure incurred on elementary education of the child in such other school;

(b) ensure availability of a neighbourhood school as specified in section 6;

(c) ensure that the child belonging to weaker section and the child belonging to disadvantaged group are not discriminated against and prevented from pursuing and completing elementary education on any grounds;

(d) maintain records of children up to the age of fourteen years residing within its jurisdiction, in such manner as may be prescribed;

(e) ensure and monitor admission, attendance and completion of elementary education by every child residing within its jurisdiction;

(f) provide infrastructure including school building, teaching staff and learning material;

(g) provide special training facility specified in section 4;

(h) ensure good quality elementary education conforming to the standards and norms specified in the Schedule;

(i) ensure timely prescribing of curriculum and courses of study for elementary education;

(j) provide training facility for teachers;

(k) ensure admission of children of migrant families;

(l) monitor functioning of schools within its jurisdiction; and

(m) decide the academic calendar.

10. Duty of parents and guardian: It shall be the duty of every parent or guardian to admit or cause to be admitted his or her child or ward, as the case may be, to an elementary education in the neighbourhood school.

11. Appropriate Government to provide for pre-school education: With a view to prepare children above the age of three years for elementary education and to provide early childhood care and education for all children until they complete the age of six years, the appropriate Government may make necessary arrangement for providing free pre-school education for such children.

12. Extent of school's responsibility for free and compulsory education: (1) For the purposes of this Act, a school,

(a) specified in sub-clause (i) of clause (n) of section 2 shall provide free and compulsory elementary education to all children admitted therein;

(b) specified in sub-clause (ii) of clause (n) of section 2 shall provide free and compulsory elementary education to such proportion of children admitted therein as its annual recurring aid or grants so received bears to its annual recurring expenses, subject to a minimum of twenty-five per cent.;

(c) specified in sub-clauses (iii) and (iv) of clause (n) of section 2 shall admit in class I, to the extent of at least twenty-five per cent. of the strength of that class, children belonging to weaker section and disadvantaged group in the neighbourhood and provide free and compulsory elementary education till its completion:

Provided further that where a school specified in clause (n) of section 2 imparts pre-school education, the provisions of clauses (a) to (c) shall apply for admission to such pre-school education.

(2) The school specified in sub-clause (iv) of clause (n) of section 2 providing free and compulsory elementary education as specified in clause (c) of sub-section (1) shall be reimbursed expenditure so incurred by it to the extent of per-child-expenditure incurred by the State, or the actual amount charged from the child, whichever is less, in such manner as may be prescribed:

Provided that such reimbursement shall not exceed per-child-expenditure incurred by a school specified in sub-clause (i) of clause (n) of section 2:

Provided further that where such school is already under obligation to provide free education to a specified number of children on account of it having received any land, building, equipment or other facilities, either free of cost or at a concessional rate, such school shall not be entitled for reimbursement to the extent of such obligation.

(3) Every school shall provide such information as may be required by the appropriate Government or the local authority, as the case may be.

13. No capitation fee and screening procedure for admission: (1) No school or person shall, while admitting a child, collect any capitation fee and subject the child or his or her parents or guardian to any screening procedure.

(2) Any school or person, if in contravention of the provisions of sub-section (1),-

(a) receives capitation fee, shall be punishable with fine which may extend to ten times the capitation fee charged;

(b) subjects a child to screening procedure, shall be punishable with fine which may extend to twentyfive thousand rupees for the first contravention and fifty thousand rupees for each subsequent contraventions.

14. Proof of age for admission: (1) For the purposes of admission to elementary education, the age of a child shall be determined on the basis of the birth certificate issued in accordance with the provisions of the Births, Deaths and Marriages Registration Act, 1886 or on the basis of such other document, as may be prescribed.

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(2) No child shall be denied admission in a school for lack of age proof.

15. No denial of admission: A child shall be admitted in a school at the commencement of theacademic year or within such extended period as may be prescribed:

Provided that no child shall be denied admission if such admission is sought subsequent to theextended period:

Provided further that any child admitted after the extended period shall complete his studies in such manner as may be prescribed by the appropriate Government.

16. Prohibition of holding back and expulsion: No child admitted in a school shall be held back in any class or expelled from school till the completion of elementary education.

17. Prohibition of physical punishment and mental harassment to child: (1) No child shall be subjected to physical punishment or mental harassment.

(2) Whoever contravenes the provisions of sub-section (1) shall be liable to disciplinary action under the service rules applicable to such person.

18. No School to be established without obtaining certificate of recognition: (1) No school, other than a school established, owned or controlled by the appropriate Government or the local authority, shall, after the commencement of this Act, be established or function, without obtaining a certificate of recognition from such authority, by making an application in such form and manner, as may be prescribed.

(2) The authority prescribed under sub-section (1) shall issue the certificate of recognition in such form, within such period, in such manner, and subject to such conditions, as may be prescribed:

Provided that no such recognition shall be granted to a school unless it fulfils norms and standards specified under section 19.

(3) On the contravention of the conditions of recognition, the prescribed authority shall, by an order in writing, withdraw recognition:

Provided that such order shall contain a direction as to which of the neighbourhood school, the children studying in the derecognised school, shall be admitted:

Provided further that no recognition shall be so withdrawn without giving an opportunity of being heard to such school, in such manner, as may be prescribed.

(4) With effect from the date of withdrawal of the recognition under sub-section (3), no such school shall continue to function.

(5) Any person who establishes or runs a school without obtaining certificate of recognition, or continues to run a school after withdrawal of recognition, shall be liable to fine which may extend to one lakh rupees and in case of continuing contraventions, to a fine of ten thousand rupees for each day during which such contravention continues.

19. Norms and standards for school: (1) No school shall be established, or recognised, under section 18, unless it fulfils the norms and standards specified in the Schedule.

(2) Where a school established before the commencement of this Act does not fulfil the norms and standards specified in the Schedule, it shall take steps to fulfil such norms and standards at its own expenses, within a period of three years from the date of such commencement.

(3) Where a school fails to fulfil the norms and standards within the period specified under sub-section (2), the authority prescribed under sub-section (1) of section 18 shall withdraw recognition granted to such school in the manner specified under sub-section (3) thereof.

(4) With effect from the date of withdrawal of recognition under sub-section (3), no school shall continue to function.

(5) Any person who continues to run a school after the recognition is withdrawn, shall be liable to fine which may extend to one lakh rupees and in case of continuing contraventions, to a fine of ten thousand rupees for each day during which such contravention continues.

20. Power to amend Schedule: The Central Government may, by notification, amend the Schedule by adding to, or omitting therefrom, any norms and standards.

21. School Management Committee: (1) A school, other than a school specified in sub-clause (iv) of clause (n) of section 2, shall constitute a School Management Committee consisting of the elected representatives of the local authority, parents or guardians of children admitted in such school and teachers:

Provided that at least three-fourth of members of such Committee shall be parents or guardians:

Provided further that proportionate representation shall be given to the parents or guardians of children belonging to disadvantaged group and weaker section:

Provided also that fifty per cent. of Members of such Committee shall be women.

(2) The School Management Committee shall perform the following functions, namely:-

(a) monitor the working of the school;

(b) prepare and recommend school development plan;

(c) monitor the utilisation of the grants received from the appropriate Government or local authority or any other source; and

(d) perform such other functions as may be prescribed.

[8][Provided that the School Management Committee constituted under sub-section (1) in respect of,-

(a) a school established and administered by minority whether based on religion or language; and
(b) all other aided schools as defined in sub-section (ii) of clause (n) of section 2,shall perform advisory function only.]

22. School Development Plan: (1) Every [9][School Management Committee, except the School Management Committee in respect of a school established and administered by minority, whether based on religion or language and an aided school as defined in sub-clause (ii) of clause (n) of section 2, constituted] under sub-section (1) of section 21, shall prepare a School Development Plan, in such manner as may be prescribed.

(2) The School Development Plan so prepared under sub-section (1) shall be the basis for the plans and grants to be made by the appropriate Government or local authority, as the case may be.

23. Qualifications for appointment and terms and conditions of service of teachers: (1) Any person possessing such minimum qualifications, as laid down by an academic authority, authorised by the Central Government, by notification, shall be eligible for appointment as a teacher.

(2) Where a State does not have adequate institutions offering courses or training in teacher education, or teachers possessing minimum qualifications as laid down under sub-section (1) are not available in sufficient numbers, the Central Government may, if it deems necessary, by notification, relax the minimum qualifications required for appointment as a teacher, for such period, not exceeding five years, as may be specified in that notification:

Provided that a teacher who, at the commencement of this Act, does not possess minimum qualifications as laid down under sub-section (1), shall acquire such minimum qualifications within a period of five years.

(3) The salary and allowances payable to, and the terms and conditions of service of, teachers shall be such as may be prescribed.

24. Duties of teachers and redressal of grievances: (1) A teacher appointed under sub-section (1) of section 23 shall perform the following duties, namely:-

(a) maintain regularity and punctuality in attending school;
(b) conduct and complete the curriculum in accordance with the provisions of sub-section (2) of section 29;
(c) complete entire curriculum within the specified time;
(d) assess the learning ability of each child and accordingly supplement additional instructions, if any, as required;
(e) hold regular meetings with parents and guardians and apprise them about the regularity in attendance, ability to learn, progress made in learning and any other relevant information about the child; and
(f) perform such other duties as may be prescribed.

(2) A teacher committing default in performance of duties specified in sub-section (1), shall be liable to disciplinary action under the service rules applicable to him or her:

Provided that before taking such disciplinary action, reasonable opportunity of being heard shall be afforded to such teacher.

(3) The grievances, if any, of the teacher shall be redressed in such manner as may be prescribed.

25. Pupil-Teacher Ratio: (1) [10][Within three years] from the date of commencement of this Act, the appropriate Government and the local authority shall ensure that the Pupil-Teacher Ratio, as specified in the Schedule, is maintained in each school.

(2) For the purpose of maintaining the Pupil-Teacher Ratio under sub-section (1), no teacher posted in a school shall be made to serve in any other school or office or deployed for any non-educational purpose, other than those specified in section 27.

26. Filling up vacancies of teachers: The appointing authority, in relation to a school established, owned, controlled or substantially financed by funds provided directly or indirectly by the appropriate Government or by a local authority, shall ensure that vacancy of teacher in a school under its control shall not exceed ten per cent/of the total sanctioned strength.

27. Prohibition of deployment of teachers for non-educational purposes: No teacher shall be deployed for any non-educational purposes other than the decennial population census, disaster relief duties or duties relating to elections to the local authority or the State Legislatures or Parliament, as the case may be.

28. Prohibition of private tuition by teacher: No teacher shall engage himself or herself in private tuition or private teaching activity.

29. Curriculum and evaluation procedure: (1) The curriculum and the evaluation procedure for elementary education shall be laid down by an academic authority to be specified by the appropriate Government, by notification.

(2) The academic authority, while laying down the curriculum and the evaluation procedure under subsection (1), shall take into consideration the following, namely:-

(a) conformity with the values enshrined in the Constitution;
(b) all round development of the child;
(c) building up child's knowledge, potentiality and talent;
(d) development of physical and mental abilities to the fullest extent;
(e) learning through activities, discovery and exploration in a child friendly and child-centered manner;

(f) medium of instructions shall, as far as practicable, be in child's mother tongue;
(g) making the child free of fear, trauma and anxiety and helping the child to express views freely;
(h) comprehensive and continuous evaluation of child's understanding of knowledge and his or her ability to apply the same.

30. Examination and completion certificate: (1) No child shall be required to pass any Board examination till completion of elementary education.

(2) Every child completing his elementary education shall be awarded a certificate, in such form and in such manner, as may be prescribed.

31. Monitoring of child's right to education: (1) The National Commission for Protection of Child Rights constituted under section 3, or, as the case may be, the State Commission for Protection of Child Rights constituted under section 17, of the Commissions for Protection of Child Rights Act, 2005 (4 of 2006), shall, in addition to the functions assigned to them under that Act, also perform the following functions, namely:-

(a) examine and review the safeguards for rights provided by or under this Act and recommend measures for their effective implementation;
(b) inquire into complaints relating to child's right to free and compulsory education; and
(c) take necessary steps as provided under sections 15 and 24 of the said Commissions for Protection of Child Rights Act.

(2) The said Commissions shall, while inquiring into any matters relating to child's right to free and compulsory education under clause (c) of sub-section (1), have the same powers as assigned to them respectively under sections 14 and 24 of the said Commissions for Protection of Child Rights Act.

(3) Where the State Commission for Protection of Child Rights has not been constituted in a State, the appropriate Government may, for the purpose of performing the functions specified in clauses (a) to (c) of sub-section (1), constitute such authority, in such manner and subject to such terms and conditions, as may be prescribed.

32. Redressal of grievances: (1) Notwithstanding anything contained in section 31, any person having any grievance relating to the right of a child under this Act may make a written complaint to the local authority having jurisdiction.

(2) After receiving the complaint under sub-section (1), the local authority shall decide the matter within a period of three months after affording a reasonable opportunity of being heard to the parties concerned.

(3) Any person aggrieved by the decision of the local authority may prefer an appeal to the State Commission for Protection of Child Rights or the authority prescribed under sub-section (3) of section 31, as the case may be.

(4) The appeal preferred under sub-section (3) shall be decided by State Commission for Protection of Child Rights or the authority prescribed under sub-section (3) of section 31, as the case may be, as provided under clause (c) of sub-section (1) of section 31.

33. Constitution of National Advisory Council: (1) The Central Government shall constitute, by notification, a National Advisory Council, consisting of such number of Members, not exceeding fifteen, as the Central Government may deem necessary, to be appointed from amongst persons

having knowledge and practical experience in the field of elementary education and child development.

(2) The functions of the National Advisory Council shall be to advise the Central Government on implementation of the provisions of the Act in an effective manner.

(3) The allowances and other terms and conditions of the appointment of Members of the National Advisory Council shall be such as may be prescribed.

34. Constitution of State Advisory Council: (1) The State Government shall constitute, by notification, a State Advisory Council consisting of such number of Members, not exceeding fifteen, as the State Government may deem necessary, to be appointed from amongst persons having knowledge and practical experience in the field of elementary education and child development.

(2) The functions of the State Advisory council shall be to advise the State Government on implementation of the provisions of the Act in an effective manner.

(3) The allowances and other terms and conditions of appointment of Members of the State Advisory Council shall be such as may be prescribed.

35. Power to issue directions: (1) The Central Government may issue such guidelines to the appropriate Government or, as the case may be, the local authority, as it deems fit for the purposes of implementation of the provisions of this Act.

(2) The appropriate Government may issue guidelines and give such directions, as it deems fit, to the local authority or the School Management Committee regarding implementation of the provisions of this Act.

(3) The local authority may issue guidelines and give such directions, as it deems fit, to the School Management Committee regarding implementation of the provisions of this Act.

36. Previous sanction for prosecution: No prosecution for offences punishable under sub-section (2) of section 13, sub-section (5) of section 18 and sub-section (5) of section 19 shall be instituted except with the previous sanction of an officer authorised in this behalf, by the appropriate Government, by notification.

37. Protection of action taken in good faith: No suit or other legal proceeding shall lie against the Central Government, the State Government, the National Commission for Protection of Child Rights, the State Commission for Protection of Child Rights, the local authority, the School Management Committee or any person, in respect of anything which is in good faith done or intended to be done, in pursuance of this Act, or any rules or order made thereunder.

38. Power of appropriate Government to make rules: (1) The appropriate Government may, by notification, make rules, for carrying out the provisions of this Act.

(2) In particular, and without prejudice to the generality of the foregoing powers, such rules may provide for all or any of the following matters, namely:-

(a) the manner of giving special training and the time-limit thereof, under first proviso to section 4; (b) the area or limits for establishment of a neighbourhood school, under section 6; (c) the manner of maintenance of records of children up to the age of fourteen years, under clause (d) of section 9; (d) the manner and extent of reimbursement of expenditure, under sub-section (2) of section 12; (e) any other document for determining the age of child under sub-section (1) of section 14; (f) the

extended period for admission and the manner of completing study if admitted after the extended period, under section 15; (g) the authority, the form and manner of making application for certificate of recognition, under sub-section (1) of section 18; (h) the form, the period, the manner and the conditions for issuing certificate of recognition, under sub-section (2) of section 18; (i) the manner of giving opportunity of hearing under second proviso to sub-section (3) of section 18; (j) the Other functions to be performed by School Management Committee under clause of subsection (2) of section 21; (k) the manner of preparing School Development Plan under sub-section (1) of section 22; (l) the salary and allowances payable to, and the terms and conditions of service of, teacher, under sub-section (3) of section 23; (m) the duties to be performed by the teacher under clause (f) of sub-section (1) of section 24; (n) the manner of redressing grievances of teachers under sub-section (3) of section 24; (o) the form and manner of awarding certificate for completion of elementary education under sub-section (2) of section 30; (p) the authority, the manner of its constitution and the terms and conditions therefor, under sub-section (3) of section 31; (q) the allowances and other terms and conditions of appointment of Members of the National Advisory Council under sub-section (3) of section 33; (r) the allowances and other terms and conditions of appointment of Members of the State Advisory Council under sub-section (3) of section 34. (3) Every rule made under this Act and every notification issued under sections 20 and 23 by the Central Government shall be laid, as soon as may be after it is made, before each House of Parliament, while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid, both Houses agree in making any modification in the rule or notification or both Houses agree that the rule or notification should not be made, the rule or notification shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule or notification.

(4) Every rule or notification made by the State Government under this Act shall be laid, as soon as may be after it is made; before the State Legislatures.

[11][39. Power of Central Government to remove difficulties: (1) If any difficulty arises in giving effect to the provisions of this Act, the Central Government may, by order, published in the Official Gazette, make such provisions not inconsistent with the provisions of this Act, as may appear to it to be necessary for removing the difficulty:

Provided that no order shall be made under this section after the expiry of three years from the commencement of the Right of Children to Free and Compulsory Education (Amendment) Act, 2012.

(2) Every order made under this section shall be laid, as soon as may be after it is made, before each House of Parliament.]

NOTES

1. 1st April, 2010, vide Notification No. S.O. 428(E), dated the 16th February, 2010, see Gazette of India, Extraordinary, 2010, Pt.II, s.3, sub-section (i).
2. Ins. by Act 30 of 2012, s. 2 (w.e.f 25-07-2012).
3. Ins. by s. 3, ibid (w.e.f 25-07-2012).
4. Ins. by s. 3, ibid (w.e.f 25-07-2012).
5. Subs. by s. 4, ibid for sub-section (1) (w.e.f 25-07-2012).
6. Proviso omitted by s. 4, ibid (w.e.f 25-07-2012).
7. Ins. by s. 4, ibid (w.e.f 25-07-2012).
8. Ins. by s. 5, ibid (w.e.f 25-07-2012).
9. Subs. by s. 6, ibid for "School Management Committee, constituted" (w.e.f 25-07-2012).
10. Subs. by s. 7, ibid for "within six months" (w.e.f 25-07-2012).
11. Ins. by s. 8, ibid (w.e.f 25-07-2012).

THE SCHEDULE
(See sections 19 and 25)
NORMS AND STANDARDS FOR A SCHOOL

Sl. No.	Item	Norms and Standards	
1.	Number of teachers: (a) For first class to fifth class	Admitted children	Number of teachers
		Up to Sixty	Two
		Netween sixty-one to ninety	three
		Between Ninety-one to one hundred and twenty	Four
		Between One hundred and twenty-one to two hundred	Five
		Above One hundred and fifty children	Five plus one Head-teacher
		Above Two hundred children	Pupil-Teacher Ratio (excluding Head-teacher) shall not exceed forty
	(b) For sixth class to eighth class	(1) At least one teacher per class so that there shall be at least one teacher each for- (i) Science and Mathematics (ii) Social Studies; (iii) Languages	
		(2) At least one teacher for every thirty-five children	
		(3) Where admission of children is above one hundred- (i) a full time head-teacher; (ii) part time instructors for- (A) Art Education; (B) Health and Physical Education; (c) Work Education	
2.	Building	All-weather building consisting of- (i) at least one class-room for every teacher and an office-cum-store-cum- head teacher's room; (ii) barrier-free access; (iii) separate toilets for boys and girls; (iv) safe and adequate drinking water facility to all children (v) a kitchen where mid-day meal is cooked in the school; (vi) Playground; (vii) arrangements for securing the school building by boundary wall or fencing.	
3.	Minimum mumber of working days/instructional hours in an academic year	(i) two humdred working days for first class to fifth class;	
		(ii) two hundred and twenty working days for sixth class to eighth class;	
		(iii) eight hundred instructional hours per academic year for first class to fifth class;	
		(iv) one thousand instructional hours per academic year for sixth class to eighth class	
4.	Minimum number of working hours per week for the teacher	forty-five teaching including preparation hours.	
5.	Teaching learning equipment	Shall be provided to each class as required	
6.	Library	There shall be a library in each school providing newspaper, magazines and books on all subjects, including story-books.	
7.	Play material, games and sports equipment	Shall be provided to each class as required.	

T.K. Viswanathan,
Secretary to the Govt. of India

MODEL RULES UNDER THE RIGHT OF CHILDREN TO FREE AND COMPULSORY EDUCATION ACT, 2009 PART I - PRELIMINARY

Short title, extent and commencement

1 (1) These Rules may be called the Right of Children to Free and Compulsory Education Rules, 2009.

(2) They shall come into force from (Date)

(3) They shall extend to the whole of (Name of State)

Definitions

2

(1) In these rules, unless the context otherwise requires,

(a) "Act" means the Right of Children to Free and Compulsory Education Act, 2009.

(b) "Anganwadi" means an Anganwadi Centre established under the Integrated Child Development Scheme of the Ministry of Women and Child Development of the Government of India

(c) "appointed date" means the date on which the Act comes into force, as notified in the Official Gazette

(d) "Chapter", "section" and Schedule" means respectively Chapter, section of, and Schedule to, the Act.

(e) "Child" means any child of the age of 6 to 14 years

(f) "Pupil Cumulative Record" means record of the progress of the child based on comprehensive and continuous evaluation

(g) "school mapping" means planning school location to overcome social barriers and geographical distance

(2) All references to "forms" in these Rules shall be construed as references to forms set out in Appendix I hereto.

(3) All other words and expressions used herein and not defined but defined in the Act shall have the same meanings respectively assigned to them in the Act.

PART II - RIGHT OF CHILDREN TO FREE AND COMPULSORY EDUCATION

Special Training for the purposes of first proviso to section 4

3 (1) The School Management Committee/ local authority shall identify children requiring special training and organise such training in the following manner, namely:

(a) The special training shall be based on specially designed, age appropriate learning material, approved by the academic authority specified in section 29(1).

(b) It shall be provided in classes held on the premises of the school, or through classes organised in safe residential facilities

(c) It shall be provided by teachers working in the school, or by teachers specially appointed for the purpose.

(d) The duration shall be for a minimum period of three months which may be extended, based on periodical assessment of learning progress, for a maximum period not exceeding two years.

(2) The child shall, upon induction into the age appropriate class, after special training, continue to receive special attention by the teacher to enable him/her to successfully integrate with the rest of the class, academically and emotionally.

PART III - DUTIES OF STATE GOVERNMENT, LOCAL AUTHORITY

Areas or limits for the purposes of section 6

4 (1) The areas or limits of neighbourhood within which a school has to be established by the State Government shall be as under

(a) Inrespect of children in classes I-V, a school shall be established within a walking distance of one km of the neighbourhood.

(b) In respect of children in classes VI-VIII, a school shall be established within a walking distance of 3 km of the neighbourhood.

(2) Wherever required, the State Government shall upgrade existing schools with classes I-V to include classes VI-VIII. In respect of schools which start from class VI onwards, the State Government shall endeavour to add classes I - V, wherever required.

(3) In areas with difficult terrain, risk of land-slides, floods, lack of roads and in general, danger for young children in the approach from their homes to the school, the State Government/Local Authority shall locate the school in such a manner as to avoid such dangers, by reducing the limits specified under sub-rule (1).

(4) For children from small hamlets, as identified by the State Government/Local Authority, where no school exists within the area or limits of neighbourhood specified under sub-Rule (1) above, the State Government/Local Authority shall make adequate arrangements, such as free transportation, residential facilities and other facilities, for providing elementary education in a school, in relaxation of the limits specified under sub-Rule (1).

(5) In areas with high population density, the State Government/local authority may consider establishment of more than one neighbourhood school, having regard to the number of children in the age group of 6-14 years in such areas.

(6) The Local Authority shall identify the neighbourhood school(s) where children can be admitted and make such information public for each habitation within its jurisdiction.

(7) In respect of children with disabilities which prevent them from accessing the school the State Government/Local Authority will endeavour to make appropriate and safe transportation arrangements for them to attend school and complete elementary education.

(8) The State Government/Local Authority shall ensure that access of children to the school is not hindered on account of social and cultural factors.

Duties of State Government and Local Authority for the purposes of Sections 8 and 9

5. (1) A child attending a school of the State Government or local authority referred to in sub-clause (i) of clause (n) of section 2, a child attending a school referred to in sub-clause (ii) of clause (n) of section 2 in pursuance of clause (b) of sub section (1) of section 12, and a child attending a school referred to in sub-clause (iii) and (iv) of clause (n) of section 2 in pursuance of clause (c) of sub section (1) of section 12 shall be entitled to free text books, writing materials and uniforms.

Provided that a child with disabilities shall also be provided free special learning and support material.

Explanation: In respect of the child admitted in pursuance of clause (b) of sub-section (1) of section 12 and a child admitted in pursuance clause (c) of sub-section (1) of section 12, the responsibility of providing the free entitlement shall be of the school referred to in sub-clause (ii) of clause (n) of section 2 and of sub-clauses (iii) and (iv) of clause (n) of section 2, respectively.

(2) For the purpose of determining and for establishing neighbourhood schools, the State government/local authority shall undertake school mapping, and identify all children, including children in remote areas, children with disabilities, children belonging to disadvantaged groups, children belonging to weaker sections and children referred to in section 4, within a period of one year from the appointed date, and every year thereafter.

(3) The State government/local authority shall ensure that no child is subjected to caste, class, religious or gender abuse in the school.

(4) For the purposes of clause (c) of section 8 and clause (c) of section 9, the State Government and the Local Authority shall ensure that a child belonging to a weaker section and a child belonging to disadvantaged group is not segregated or discriminated against in the classroom, during mid day meals, in the play grounds, in the use of common drinking water and toilet facilities, and in the cleaning of toilets or classrooms.

Maintenance of records of children by local authority for the purposes of clause (d) of section 9

6 (1) The Local Authority shall maintain a record of all children, in its jurisdiction, through a household survey, from their birth till they attain 14 years.

(2) The record, referred to in sub-Rule (1), shall be updated each year.

(3) The record, referred to in sub-Rule (1), shall be maintained transparently, in the public domain, and used for the purposes of clause (e) of section 9

(4) The record, referred to in sub-Rule (1) shall, in respect of every child, include

(a) name, sex, date of birth, (Birth Certificate Number), place of birth;
(b) parents' / guardians' names, address, occupation;
(c) pre-primary school/Anganwadi centre that the child attends (upto age 6);
(d) elementary school where the child is admitted;
(e) present address of the child;
(f) class in which the child is studying (for children between age 6-14), and if education is discontinued in the territorial jurisdiction of the Local Authority, the cause of such discontinuance;
(g) whether the child belongs to the weaker section within the meaning of clause (e) of section 2 of the Act;
(h) whether the child belongs to a disadvantaged group within the meaning of clause (d) of section 2 of the Act;
(i) details of children requiring special facilities / residential facilities on account of migration and sparse population; age appropriate admission; disability.

(5) The Local authority shall ensure that the names of all children enrolled in the schools under its jurisdiction are publicly displayed in each school.

PART IV - RESPONSIBILITIES OF SCHOOLS AND TEACHERS

Admission of children belonging to weaker section and disadvantaged group for the purposes of clause (c) to section 12 (1)

7 (1) The school referred to in clauses (iii) and (iv) of clause (n) of section 2 shall ensure that children admitted in pursuance of clause (c) to section 12 (1) shall not be segregated from the other children in the classrooms nor shall their classes be held at places and timings different from the classes held for the other children.

(2) The school referred to in clauses (iii) and (iv) of clause (n) of section 2 shall ensure that children admitted in pursuance of clause (c) to section 12 (1) shall not be discriminated from the rest of the children in any manner pertaining to entitlements and facilities such as text books, uniforms, library and ICT facilities, extra-curricular and sports.

(3) The areas or limits of neighborhood specified in Rule 4 (1) shall apply to admissions made in pursuance of clause (c) to section 12 (1).

Provided that the school may, for the purposes of filling up the requisite percentage of seats for

children referred to in clause (c) to section 12 (1), extend these limits with the prior approval of the State Government.

Reimbursement of per-child expenditure by the State Government for the purposes of section 12(2)

8 (1) The total annual recurring expenditure incurred by the State Government, whether from its own funds, or funds provided by the Central Government or by any other authority, on elementary education in respect of all schools established, owned or controlled by it or by the local authority, divided by the total number of children enrolled in all such schools, shall be the per-child expenditure incurred by the State Government.

Explanation - For the purpose of determining the per-child expenditure, the expenditure incurred by the State Government or local authority on schools referred to in sub-clause (ii) of clause (n) of section 2 and the children enrolled in such schools shall not be included.

(2) Every school referred to in clauses (iii) and (iv) of clause (n) of section 2 shall maintain a separate bank account in respect of the amount received by it as reimbursement under subsection (2) of section 12.

Documents as age proof for the purpose of section 14

9 Wherever a birth certificate under the Births, Deaths and Marriages Certification Act, 1886 is not available, any one of the following documents shall be deemed to be proof of age of the child for the purposes of admission in schools -

(a) Hospital / Auxiliary Nurse and Midwife (ANM) register record

(b) Anganwadi record

(c) Declaration through an affidavit of the age of the child by the parent or guardian

Extended period for admission for the purposes of section 15

10 (1) Extended period of admission shall be six months from the date of commencement of the academic year of a school.

(2) Where a child is admitted in a school after the extended period, he or she shall be eligible to complete studies with the help of special training, as determined by the head of the school.

Recognition of schools for the purposes of section 18

11 (1) Every school, other than a school established, owned or controlled by the State Government or Local Authority, established before the commencement of this Act shall make a self declaration within a period of three months of the commencement of the Act, in Form No. 1 to the concerned District Education Officer regarding its compliance or otherwise with the norms and standards prescribed in the Schedule and the following conditions:

(a) the school is run by a society registered under the Societies Registration Act, 1860 (21 of 1860), or a public trust constituted under any law for the time being in force;

(b) the school is not run for profit to any individual, group or association of individuals or any other persons;

(c) the school conforms to the values enshrined in the Constitution;

(d) the school buildings or other structures or the grounds are used only for the purposes of education and skill development;

(e) the school is open to inspection by any officer authorized by the State Government/ Local Authority;

(f) the school furnishes such reports and information as may be required by the Director of Education/District Education Officer from time to time and complies

with such instructions of the State Government/ Local Authority as may be issued to secure the continued fulfillment of the condition of recognition or the removal of deficiencies in working of the school;

(2) Every self declaration received in Form 1 shall be placed by the District Education Officer in public domain within fifteen days of its receipt.

(3) The District Education Officer shall conduct on-site inspection of such schools which claim in Form No. 1 to fulfill the norms and standards and the conditions mentioned in sub-Rule (1) within three months of the receipt of the self declaration.

(4) After the inspection referred to in sub-Rule (3) is carried out, the inspection report shall be placed by the District Education Officer in public domain and schools found to be conforming to the norms, standards and the conditions shall be granted recognition by the District Education Officer in Form No. 2 within a period of 15 days from the date of inspection.

(5) Schools that do not conform to the norms, standards and conditions mentioned in sub rule (1) shall be listed by the District Education Officer through a public order to this effect, and any time within the next two and a half years, such schools may request the District Education Officer for an on-site inspection for grant of recognition.

(6) Schools which do not conform to the norms, standards and conditions mentioned in sub rule (1) after three years from the commencement of the Act, shall cease to function

(7) Every school, other than a school established, owned or controlled by the State Government or local authority established after the commencement of this Act shall conform to the norms and standards and conditions mentioned in sub-Rule (1) in order to qualify for recognition.

Withdrawal of recognition to schools for the purposes of sections 18(3) and 12(3)

12 (1) Where the District Education Officer on his own motion, or on any representation received from any person, has reason to believe, to be recorded in writing, that a school recognised under rule 12, has violated one or more of the conditions for grant of recognition or has failed to fulfill the norms and standards prescribed in the Schedule, he shall act in the following manner:

(a) Issue a notice to the school specifying the violations of the condition of grant of recognition and seek its explanation within one month.

(b) In case the explanation is not found to be satisfactory or no explanation is received within the stipulated time period, the District Education Officer may cause an inspection of the school, to be conducted by a Committee of three to five members comprising of educationists, civil society representatives, media, and government representatives, which shall make due inquiry and submit its Report, along with its recommendations for continuation of recognition or its withdrawal, to the District Education Officer.

(c) The District Education Officer shall forward the Report of the Committee, along with his comments, to the State Commission for Protection of Child or the Right to Education Protection Authority, as the case may be, with a copy to the State Education Department.

(2) The State Commission for Protection of Child Rights or the Right to Education Protection Authority, as the case may be, shall, after seeking explanation from the concerned school and after due examination, prepare and send its recommendations to the State Education Department.

(3) The State Education Department, shall, on the basis of the recommendations referred to in sub-Rule (2) convey its decision to the District Education Officer.

(4) The District Education Officer shall, on the basis of the decision of the State Education Department, pass an order cancelling the recognition granted to the school. The order of de-recognition shall be operative from the immediately succeeding academic year and shall specify the neighbourhood schools to which the children of the de-recognised schools shall be admitted.

PART V -SCHOOL MANAGEMENT COMMITTEE

Composition and functions of the School Management Committee for the purposes of section 21

13 (1) A School Management Committee shall be constituted in every school, other than an unaided school, within its jurisdiction, within six months of the appointed date, and reconstituted every two years.

(2) Seventy five percent of the strength of the School Management Committee shall be from amongst parents or guardians of children.

(3) The remaining twenty five percent of the strength of the SMC shall be from amongst the following persons

a) one third members from amongst the elected members of the local authority, to be decided by the local authority;
b) one third members from amongst teachers from the school, to be decided by the teachers of the school;
c) remaining one third from amongst local educationists / children in the school, to be decided by the parents in the Committee

(4) To manage its affairs, the School Management Committee shall elect a Chairperson and Vice Chairperson from among the parent members. The Head teacher of the school or where the school does not have a head teacher, the senior most teacher of the school, shall be the ex-officio Member-Convener of the School Management Committee.

(5) The School Management Committee shall meet at least once a month and the minutes and decisions of the meetings shall be properly recorded and made available to the public.

(6) The School Management Committee shall, in addition to the functions specified in clauses (a) to (d) of section 21 (2), perform the following functions, for which it may constitute smaller working groups from amongst its Members:

(a) communicate in simple and creative ways to the population in the neighbourhood of the school, the rights of the child as enunciated in the Act; as also the duties of the State Government, local authority, school, parent and guardian;
(b) Ensure the implementation of clauses (a) and (e) of section 24 and section 28,
(c) Monitor that teachers are not burdened with non academic duties other than those specified in section 27;
(d) Ensure the enrolment and continued attendance of all the children from the neighbourhood in the school;
(e) Monitor the maintainance of the norms and standards prescribed in the Schedule;
(f) Bring to the notice of the local authority any deviation from the rights of the child, in particular mental and physical harassment of children, denial of admission, and timely provision of free entitlements as per section 3(2).
(g) Identify the needs, prepare a Plan, and monitor the implementation of the provisions of Section 4.
(h) Monitor the identification and enrolment of, and facilities for learning by disabled children, and ensure their participation in, and completion of elementary education
(i) Monitor the implementation of the Mid-Day Meal in the school.

(j) Prepare an annual account of receipts and expenditure of the school.

(7) Any money received by the School Management Committee for the discharge of its functions under this Act, shall be kept in a separate account, to be made available for audit every year.

(8) The accounts referred to in clause (j) to sub-Rule (6) and sub-Rule (7) should be signed by the Chairperson/ Vice-Chairperson and Convenor of the School Management Committee and made available to the local authority within one month of their preparation.

Preparation of School Development Plan for the purpose of section 22

14. (1) The School Management Committee shall prepare a School Development Plan at least three months before the end of the financial year in which it is first constituted under the Act.

(2) The School Development Plan shall be a three year plan comprising three annual sub plans

(3) The School Development Plan, shall contain the following details -

(a) Estimates of class-wise enrolment for each year;
(b) Requirement, over the three year period, of the number of additional teachers, including Head Teachers, subject teachers and part time teachers, separately for Classes I to V and classes VI to VIII, calculated, with reference to the norms specified in the Schedule
(c) Physical requirement of additional infrastructure and equipments over the three year period, calculated, with reference to the norms and standards specified in the Schedule
(d) Additional financial requirement over the three year period, year-wise, in respect of (b) and (c) above, including additional requirement for providing special training facility specified in section 4, entitlements of children such as free text books and uniforms, and any other additional financial requirement for fulfilling the responsibilities of the school under the Act.

(3) The School Development Plan should be signed by the Chairperson/Vice-Chairperson and Convenor of the School Management Committee and submitted to the local authority before the end of the financial year in which it is to be prepared.

PART VI - TEACHERS

Minimum Qualification for the purposes of section 23 (1)

15 (1) The academic authority notified in pursuance of sub-section (1) of section 23, shall, within three months of such notification, lay down the minimum qualifications for persons to be eligible for appointment as a teacher in an elementary school.
(2) The minimum qualifications laid down by the academic authority referred to in sub-Rule (1) shall be applicable for every school referred to in clause (n) of section 2.

Relaxation of minimum qualification for the purposes of section 23 (2)

16 (1) The State Government shall estimate the teacher requirement as per the norms in the Schedule for all schools referred to in clause (n) of section 2 within the State, within six months from the commencement of the Act.

(2) Where a State does not have adequate institutions offering courses or training in teacher education, or persons possessing minimum qualifications as laid down under sub-Rule (2) of Rule 15 are not available in sufficient numbers in relation to the requirement of teachers estimated under sub-Rule (1), the State Government shall request, within one year of the commencement of the Act, the Central Government for relaxation of the prescribed minimum qualification.

(3) On receipt of the request referred to in sub-Rule (2), the Central Government shall examine the request of the State Government and may relax the minimum qualifications by way of a Notification.

(4) The Notification referred to in sub-Rule (3) shall specify the nature of relaxation and the time period, not exceeding three years, but not beyond five years from the commencement of the Act, within which the teachers appointed under the relaxed conditions acquire the minimum qualifications prescribed by the academic authority notified under sub-section (1) of Section 23.

(5) After six months after the commencement of the Act, no appointment of teacher for any school can be made in respect of any person not possessing the minimum qualifications prescribed by the academic authority notified under sub-section (1) of Section 23 without the notification referred to in sub-Rule (3).

(6) A person appointed as a teacher within six months of the commencement of the Act, must possess at least the academic qualifications not lower than higher secondary school certificate or equivalent.

Acquiring minimum qualifications under proviso to section 23(2)

17 (1) The State Government shall provide adequate teacher education facilities to ensure that all teachers in schools referred to in sub-clauses (i) and (iii) of clause (n) of section 2, who do not possess the minimum qualifications laid down under sub-Rule (2) of Rule 15 at the time of commencement of the Act, to acquire such minimum qualifications within a period of five years from the commencement of the Act.

(2) For a teacher, of any school referred to in sub-clause (ii) and (iv) of clause (n) of section 2, who does not possess the minimum qualifications laid down under sub-Rule (2) of Rule 15 at the time of commencement of the Act, the management of such school shall enable such teacher to acquire such minimum qualifications within a period of five years from the commencement of the Act.

Salary and allowances and conditions of service of teachers for the purpose of section 23(3)

18 (1) The State Government or the local authority, as the case may be, shall notify terms and conditions of service and salary and allowances of teachers in order to create a professional and permanent cadre of teachers.

(2) In particular and without prejudice to sub rule (1), the terms and conditions of service shall take into account the following, namely -

(a) Accountability of teachers to the School Management Committee constituted under section 21.

(b) provisions enabling long term stake of teachers in the teaching profession

(3) The scales of pay and allowances, medical facilities, pension, gratuity, provident fund, and other prescribed benefits of teachers, including those employed for the purpose of imparting special training as specified in Section 4, shall be that of regular teachers, and at par for similar work and experience.

Duties to be performed by teachers for the purpose of clause (f) to section 24(1)

19 (1) In performance of the functions specified in sub-section (1) of section 24(1) and in order to fulfill the requirements of clause (h) of sub-section (2) of section 29, the teacher shall maintain a file containing the pupil cumulative record

for every child which will the basis for the awarding the completion certificate specified in sub-section (2) of section 30.

(2) In addition to the functions specified in clauses (a) to (e) of sub-section (1) of section 24, a teacher may perform the following duties assigned to him or her, without interfering with regular teaching:

(a) Participation in training programmes;
(b) Participation in curriculum formulation, and development of syllabi, training modules and text book development;

Grievance Redressal mechanism for teachers for the purposes of section 24(3)

20 (1) The School Management Committee constituted under section 21 shall be the first level of grievance redressal of teachers of schools specified therein.

(2) The State Government shall constitute School Tribunals at the State, District and Block levels which would act as the grievance redressal mechanism for the teachers.

Maintaining Pupil-Teacher Ratio in each school for the purposes of section 25

21 (1) Sanctioned strength of teachers in a school shall be notified by the State Government or the local authority, as the case may be, within a period of three months of the appointed date.
Provided that the State Government or the local authority, as the case may be, shall, within three months of such Notification, redeploy teachers of schools having a strength in excess of the sanctioned strength prior to the Notification referred to in sub-Rule (1).

(2) If any person of the State Government or the local authority violates the provisions of sub-section (2) of section 25, he or she shall be personally liable for disciplinary action.

PART VII - CURRICULUM AND COMPLETION OF ELEMENTARY EDUCATION

Academic Authority for the purposes of section 29

22 (1) The State Government shall notify the State Council of Educational Research and Training (or its equivalent), as the academic authority for the purposes of section 29.

(2) While laying down the curriculum and evaluation procedure, the academic authority notified under sub-Rule (1) shall

(a) formulate the relevant and age appropriate syllabus and text books and other learning material
(b) develop in-service teacher training design, and
(c) prepare guidelines for putting into practice continuous and comprehensive evaluation

(3) The academic authority referred to in sub-rule (1) shall design and implement a process of holistic school quality assessment on a regular basis

Award of certificate for the purposes of section 30

23 (1) The Certificate of completion of elementary education shall be issued at the school/block/district level within one month of the completion of elementary education.

(2) The Certificate referred to in sub-rule (1) shall-

(a) certify that the child has completed all courses of study prescribed under section 29.
(b) contain the Pupil Cumulative Record of the child and also specify achievements of the child in areas of activities beyond the prescribed course of study and may include music, dance, literature, sports, etc.

PART VIII - PROTECTION OF RIGHT OF CHILDREN

Performance of functions by the State Commission for Protection of Child Rights, for the purposes of section 31

24 (1) In respect of a State which does not have a State Commission for Protection of Child Rights, the State Government may take immediate steps to set up the Commission.

(2) Till such time as the State Government sets up the Commission, it shall constitute an interim authority known as the Right to Education Protection Authority (REPA) for the purposes of performing the functions specified in sub-section (1) of section 31, within six months of the commencement of Act or the constitution of the State Commission for Protection of Child Rights, whichever is earlier.

(3) The Right to Education Protection Authority (REPA) shall consist of the following, namely -

(a) A chairperson who is a person of high academic repute or has been a High Court Judge or has done outstanding work for promoting the rights of children; and

(b) Two Members, of whom at least one shall be a woman, from the following areas, from amongst persons of eminence, ability, integrity, standing and experience in -

i. education;
ii. child health care and child development;
iii. juvenile justice or care of neglected or marginalized children or children with disabilities;
iv. elimination of child labour or working with children in distress;
v. child psychology or sociology; or
vi. legal profession.

(4) The National Commission for Protection of Child Rights Rules, 2006 shall, so far as pertains to the terms and conditions, mutatis mutandis apply to Chairperson and other Members of the REPA.

(5) All records and assets of the REPA shall be transferred to the State Commission for Protection of Child Rights immediately after its constitution.

(6) In performance of its functions, the State Commission for Protection of Child Rights or the REPA, as the case may be, may also act upon matters referred to it by the State Advisory Council.

(7) The State Government shall enable constituting a Cell in the State Commission for Protection of Child Rights or the REPA, as the case may be, which may assist the Commission or the REPA in performance of its function under the Act.

Manner of furnishing complaints before the State Commission for Protection of Child Rights

25 (1) The State Commission for Protection of Child Rights, or the REPA, as the case may be, shall set up a child help line, accessible by SMS, telephone and letter, which would act as the forum for aggrieved child/guardian to register complaint regarding violation of rights under the Act, in a manner that records her identity but does not disclose it;

(2) All complaints to the helpline should be monitored through a transparent 'alert and action' online mechanism by the State Commission for Protection of Child Rights, or the REPA, as the case may be.

Constitution and Functions of the State Advisory Council for the purpose of section 34

26 (1) The State Advisory Council shall consist of a Chairperson and fourteen Members.

(2) The Minister in-charge of the Ministry/Department of School Education in the State Government shall be the ex-officio Chairperson of the Council

(3) Members of the Council, shall be appointed by the State Government from amongst persons having knowledge and practical experience in the field of elementary education and child development, as under

(a) At least four members should be from amongst persons belonging to SCs, STs and Minorities;
(b) At least one member should be from amongst persons having specialized knowledge and practical experience of education of children with special needs;
(c) One member should be from amongst persons having specialised knowledge in the field of pre-primary education
(d) At least two members should be from amongst persons having specialized knowledge and practical experience in the field of teacher education
(e) Fifty percent of such members shall be from amongst women

(4) The Department of School Education shall provide logistic support for meetings of the Council and its other functions.

(5) The procedure for transaction of Business of the Council shall be as under.
(i) The Council shall meet regularly at such times as the Chairperson thinks fit but three months shall not intervene between its last and the next meeting.
(ii) The meeting of the Council shall be presided by the Chairperson. If for any reason the Chairperson is unable to attend the meeting of the Council, he may nominate a member of the Council to preside over such meeting. Quorum of the meeting of the Council shall be considered complete if at least 50% of its members are present.

(6) The terms and conditions for appointment of Members of the Council shall be as under

(a) Every member shall hold office as such for a term of two years from the date on which he assumes office.
Provided that no member shall hold office more than two terms

(b) The member may be removed from his office by an order of the State Government on the ground of proved misbehaviour or incapacity, or on the happening of any one or more of the following events.

i. Is adjudged an insolvent; or
ii. Refuses to act or become incapable of acting; or
iii. Is of unsound mind and stands so declared by a competent Court; or
iv. Has so abused his office as to render his continuance in office detrimental to the public interest or
v. Is convicted for an offence by a competent Court; or
vii. Is without obtaining leave of absence from the Council, absent from two consecutive meetings of the Council

(c) No Member shall be removed from his office without being given an adequate opportunity of being heard.

(d) If vacancy occurs in the office of Members, whether by reason of his death, resignation or otherwise, such vacancy shall be filled within a period of 120 days by making a fresh appointment in accordance with the provisions of sub-Rule (2).

(e) Members of the Council shall be entitled to reimbursement of travelling and daily allowances for official tours and journeys in accordance with the orders issued by the State Government in relation to non-official members of the Committees and Commissions and such like categories of persons.

SARVA SHIKSHA ABHIYAN INTERVENTIONAL STRATEGIES FOR SPECIAL TRAINING

1. Section 4 of the RTE Act provides that where a child above six years of age has not been admitted to any school and though admitted, could not complete elementary education, then he /she shall be admitted to an age appropriate class provided that when a child is directly admitted in order to ensure that she is at par with others he/ she shall have a right to be provided special training. Strategies used for alternative or non-formal education in the past have been aligned to conform to the RTE provisions of Special Training (ST) for out of school children (OoSC) who must be academically assisted for admission to an age appropriate class in a regular school.

2. Definition of out of school child:-

2.2 "**A child 6-14 years of age will be considered out of school if he / she has never been enrolled in an elementary school or if after enrolment has been absent from school without prior intimation for reasons of absence for a period of 45 days or more**".

3. Out of school children:-

3.2 NSSO data shows that the number of out of school boys in 10-13 years age group is higher. In spite of the focus on inclusive education in SSA, children with special needs (CWSN) are still out of mainstream schooling. This was highlighted in the IMRB- SRI survey on OoSC in 2009 that estimated 29 lakh CWSN in the age group of 6-13 years, of which 34.12% were not in school. There are also children who do not fall into well recognised categories and are socially invisible or ostracised.

3.3 ... School dropouts cite lack of interest in school, negative experience in schools and a sense of under achievement, as the primary reasons for dropping out, in many surveys. Schools can also 'push out' children in a larger social context, where disadvantaged children feel a sense of alienation in the school's expectations, whether of hygiene, of regularity, of punctuality in reaching school and so on.

4. Role of Local Authority:

4.1 Section 9 of the RTE Act gives the Local Authority (basically PRIs and ULBs) the responsibility of identifying OoSC and organising ST. This will necessitate a close interaction of Local Authority with School headmasters/teachers on a sustained basis. ...

4.2 The Local Authority has also been vested with the function of listing the names of every child in the village/ habitation register. The register should be standardised to have age and gender wise details which will be reviewed in the meetings of Gram Panchayat or its education Sub-Committee, at regular intervals ... The Local Authority can also be a pressure group on employers, in case of child labour situations, to release the child and send her to school.

4.3 The Local Authority has to ensure coverage of all OoSC in ST in the neighbourhood or if circumstances so demand, in a residential Special Training facility. They must also monitor the attendance of OoSC in these centres their subsequent age appropriate mainstreaming in schools.

5. Special Training for 6- 14 years:

5.1 ST is a critical component under the RTE Act with a medium term vision. It should be approached not merely as a time-bound interim initiative, but as a mechanism to make the schooling system responsive to the needs of children from diverse back grounds. Other than

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Accessed from internate on July 4, 2017. From RTE Rules/Guidelines/Notifications, Guidelines for Special Training and Definition of Out of School Children, Department of School Education and Literacy Ministry of Human Resource Development, Government of India.

addressing needs of the OoSC in the medium term, the ST must feed back into the system to ensure that children are retained in regular classes.

5.2 ST must be provided in the same academic year as the one in which the identification of OoSC has taken place.

6. Implementation Approach:

6.1 ST should be guided by flexibility and innovation at multiple levels- in the curriculum, in the pedagogy, the strategy, its implementation, in teacher training and in the management. ...

6.2 Identification:

For identification, keeping track of children who are absent for long stretches is important as such children are at the risk of becoming school dropouts sooner or later if they are not tracked and sent back to school. The processes should be transparent and participatory with the involvement of parents and the local community. As part of this process, data from different sources - school records, panchayat records, household survey (undertaken as part of school mapping exercise) should ideally be presented in public fora to be verified and discussed...

6.3 Planning: ... The process of developing School Development Plans (SDPs) is now a mandated part of SMC activities and Special Training should be an essential part of the SDP. ...

6.4 The following issues may be considered while planning implementation of ST:

6.4.1 Location: In case ST is organised within the school then the School Headmaster needs to decide the learning hours of the same. This is important especially if children in the ST are also attending regular classes at school. The Headmaster will also have to plan for other management issues like attendance, providing textbooks and study material, maintaining a record of their academic progress, mid-day meal distribution, etc.

6.4.2 Teachers: ... In case ST is organised in the school and the numbers are not large then the classes for ST can be the responsibility of regular teachers. Additional teachers/ educational volunteers will be needed if the number of children enrolled in ST is large or if the ST is located at a place other than the school or is residential in nature.

6.4.3 For schools/panchayats where there are a large number of OoSC:

i. If a particular village/hamlet has a large number of OoSC then ST should be established in the school premises. An additional classroom could be allocated, while the other existing resources would be shared.
ii. If a particular hamlet (serviced by a particular school) does not have a large number of OoSC but the panchayat as a whole has a significant number of OoSC, then one of the schools in the panchayat be the nodal school and a Special Training centre be set up there. Transport (if children coming from beyond 1 km) should be provided or arrangement to assign a volunteer to accompany the children be made. The nodal school could also function as a centre to offer other activities (like after school classes).

6.4.4 Cluster or block level residential facility: For clusters where the number of OoSC require residential ST facility (due to migration, civil strife or other reasons), it can be established at the cluster level. The following approaches may be considered -

i. Hostel facilities be provided and attached to a nodal school. The child would attend the ST, participate in the school activities and stay at the hostel.

ii. Local Residential Facility: The home of a community member or community building like those belonging to panchayats can be identified, which could house the children. Financial and security norms for this would have to be established.

iii. NGO Residential Facility: NGOs could provide residential facilities as well as run the ST, at cluster or block levels. However, the formal processes of enrolling the child in the neighbourhood school and liaising with the school etc. would have to be followed. In such cases, the NGO could also provide after-school support programmes and orientation of teachers. ...

iv. Attaching Special Training centres to existing residential facilities/ KGBVs (Kasturba Gandhi Balika Vidyalayas): In blocks where KGBVs are operational, ST could be added to this facility. KGBVs are already running bridging activities, so this extension may not be difficult. As KGBVs run are seen as regular schools, children would get oriented to the school routine. Once they reach the age appropriate level the girls could be integrated into the neighbourhood school. Older girls, if they wish, may continue in the KGBV.

v. Existing residential facilities like KGBVs, residential schools and hostels, Ashram shalas etc can be used to run residential ST with the clear understanding that the OoSC will be mainstreamed therein in age appropriate classes. In other cases of residential special training, the enrolment of the child has to be done in a day school and the child/ parents should all be aware of where the ultimate mainstreaming will be done.

6.4.5 For urban areas: An urban context is different. Large number of children in urban areas are without adult supervision (street children, orphans, homeless children); some are working especially in vulnerable professions (like rag picking); children accompany parents who have insecure jobs or are themselves working in factories, tea shops, bus stops, railway stations (such children would not have a permanent home or address making enumeration difficult). Such children, are exposed to difficult circumstances (crime, substance abuse, violence) and often unable to adjust to the regular routine and discipline necessary for schooling. As suggested in the SSA Framework, this requires sharing of infrastructure rather than the creation of new infrastructure and STs may be set up by:

i. Sharing of resources at the school level: Schools that have space and additional rooms can be selected for running of Special Training centres.

ii. Use of vacant public buildings: Vacant and abandoned public building be identified and used to run either residential or non-residential centres.

iii. Convergence of facilities provided by different departments: Other State Govt/Central Govt departments may have infrastructure that could be made available for setting up such centres.

iv. Homeless and Street children: For children staying in Shelter Homes, children may stay at the shelter and go to the nearby Government or Private school (under the 25% reservation for disadvantaged and weaker sections). ...

v. Drop in Centres: Special Training centres could act as drop in centres where OoSC would come and participate in activities, as a way of familiarising children with the school. These can be run after school hours (second shift) and children could be allowed and encouraged to come to school during school hours as well. Such programmes could also be run by NGOs.

6.5 Mobilisation:

Mobilisation of OoSC requires a social atmosphere in favor of the Right of every child to elementary education. ...

6.6 Enrolment:

6.6.1 As the RTE Act stipulates that children be enrolled throughout the academic year, **therefore clear and simple procedures for an "any-time admission" process has to be put in place**. This is important to facilitate enrolment of OoSC from migrant communities, nomadic tribes, street children and urban deprived children etc.

i. The ST has to be preceded by enrolment in a regular neighbourhood school.
ii. As far as possible the ST should be conducted within regular school premises. This not only improves monitoring and supervision of the ST, but also creates aspirations of mainstreaming in the children. It ensures optimum use of school infrastructure. Sharing of the morning assembly, MDM and sessions with regular classes facilitates peer learning and mainstreaming in the age appropriate class.
iii. ST should be conducted with the supervision of the regular school where the child has been enrolled and will be mainstreamed.
iv. ST has an upper time limit, as prescribed under the State/UT Rules, after which the child will have to be mainstreamed. This time period must be clearly tracked for each child.
v. Schools in which OoSC are enrolled for ST must maintain a clear record of such children.
vi. CWSN will need specific planning to factor in the type of disability. ... Additional cost of ST which include CWSN in terms of assessment of disability, aids and appliances and teaching resources, over and above ST norms of the State/UT, may be met from IE and accordingly indicated in district/State AWP&B.
vii. In difficult circumstances it may be necessary for ST to be undertaken outside the regular school premises though children are enrolled in that school. In such cases, the supervision and oversight of the Headmaster of the school in which such children have been enrolled prior to ST and the Local Authority concerned will be necessary.
viii. National Child Labour Project (NCLP) schools/ centres are now to be treated as ST Centres for preparing children for age appropriate admission in regular schools. Though the fund support to these NCLP centres will continue from under that scheme of the Ministry of Labour, Govt. of India, coordination between the State/ UT Education Department and the National Child Labour Project must be ensured. Registration of NCLP children in regular schools and mainstreaming after completion of ST period, must be coordinated in particular.
ix. Keeping in mind the complexity of the exercise of bringing children from extremely marginalised and vulnerable groups to the school system, collaboration with NGOs, local language experts, researchers, other State/Departments etc are necessary to ensure that the Special Training program addresses a range of issues that work at the local and State level.

6.7 Organising/ Conduct of special training:

6.7.1 Learning time during ST should focus on building both academic and social skills. Age and grade appropriate entry means recognition of the experience and knowledge of a child, regardless of its 'non-formal' nature and in the process locating his or her entry into the system at an appropriate level. Age and grade appropriate entry into the formal system does not or should not be understood to mean organising in age exclusive groups. Learning may be approached

as a social process where children can learn in mix-aged groups by interacting with and learning from their more able peers.

6.7.2 A planned process of induction of all OoSC into the school system must be an integral part of the curriculum and pedagogic processes. OsSC when brought into the system must feel wanted and a relationship of trust developed among them and between children and teaching staff. The first 15-20 days are crucial for any child entering school and may be devoted to 'non- academic' work and the following activities may be undertaken, irrespective of the mode in which the ST is delivered, residential or non- residential, duration etc.

* *Understanding the child:* The teacher should *collect information* about each child- his/her background, family support, previous working conditions etc. in a non-threatening manner through talking and discussion.
* *Building a trusting relationship and the ST Centre as a 'safe' space:* To reduce fear (of authority and punishment, fear of academics etc.) and to introduce children to an unfamiliar routine, the days should not be too regimented and discipline should not be demanded. Time needs to be spent just talking and mingling, between teachers and children and with other school children. Organisation of cultural activities, games and sports, shared MDM etc may be emphasised.
* *Creating the desire to learn:* Often first time learners or dropouts are full of apprehensions, yet they have a desire to study. During the initial phase, the children should see the classroom activities and get drawn into the learning environment. It is common that within two weeks' time, children begin to demand that they are taught to read and write as they grow in confidence and develop a sense of security. All children will not start to read and write on the same time and no attempt should be made to force or compel them to read and write.
* *Readiness for school:* A child who comes to school for the first time feels that every aspect of the school is new and alien. A child has to 'make herself over' in order to succeed in school or even 'unlearn' aspects her own cultural and social world. Sensitivity to their context will reduce the alienating impact of schooling
* *Integration:* In order to guard against isolation and 'labeling', conscious efforts must be made to integrate them into the school environment through participation in sports, extra- curriculum activities, meals etc.
* *Involvement of parents and community:* Parents and community members who have been responsible for motivating the children to come to the ST should be allowed access to the Centre until such time as they feel secure and comfortable. ST centres should have a culture of openness, where adults/community is welcome to participate in the activities.

6.7.3 Some principles for the induction phase:

* Treat the child with respect and dignity
* Make efforts to bring together children to build a sense of community
* Encourage children to take part in activities.
* If a child is homesick, make arrangements to take them home and for their return.
* Develop an interest in active learning through the process of play and a print-rich exciting environment.

6.7.4 The schedule of the ST will essentially be designed by the local circumstances, based on the number of children, availability of teachers etc. However, the guiding principle has to be that the child is mainstreamed as quickly as possible. The process should be flexible allowing multiple entry and exit points and not rigidly scheduled.

6.8 Monitoring/ tracking and support activities

The roles assigned to the School Head Master/Teacher, SMC and Local Authority should be clearly defined. For example, the Head Teacher may be assigned academic supervision specifically, the SMC to ensure regular attendance of the child and the Local Authority an overarching review at regular intervals. The roles will have to be defined as per local issues and challenges. Support services where there are overlapping problems of drug addiction, child labour, disability etc will need specific planning.

6.9 Review of the process and mainstreaming into schools after completion of ST

6.9.1 A child in an ST, if conducted in a regular school can be mainstreamed into age appropriate subjects if he reaches the competencies in a few subject areas and can continued to be taught in the ST for the rest. This will need the ST and regular class teacher to coordinate closely. ...

6.9.2 Learning Assessment in ST needs to be based on indicators of student progress, ... It is best that the teacher be responsible for her students learning and assessment, based on her knowledge about her students, and their needs and learning pace.

6.9.3 For each of the graded materials, a grade appropriate set of descriptive indicators (which may overlap for different subject areas especially in the primary grades) needs to be developed. NCERT/ State guidelines for CCE may be used as a base to develop similar indicators for each theme/unit in the special training. For instance, **Indicators for Assessing EVS Learning (Class III to V)** are:

1. **Observation and Recording** - Reporting, narrating and drawing; picture-reading, making pictures, tables and maps.
2. **Discussion** - Listening, talking, expressing opinions, finding out from others.
3. **Expression** - Drawing, body movements, creative writing, sculpting, etc.
4. **Explanation** - Reasoning, making logical connections.
5. **Classification** - Categorising, grouping, contrasting and comparing.
6. **Questioning** - Expressing curiosity, critical thinking, developing questions.
7. **Analysis** - Predicting, making hypotheses and inferences
8. **Experimentation** - Improvisation, making things and doing experiments.
9. **Concern for Justice and Equality** - Sensitivity towards the disadvantaged or differently abled, showing concern for environment.
10. **Cooperation** - Taking responsibility and initiative, sharing and working together.

Some indicators developed for social science are:

* Comprehension: (includes Synthesising Information, Explanation, Reasoning and Expression)
* Critical thinking: (Includes Application, Analysis and Collaborative Work)
* Capacity for empathy and imagination.

6.9.4 Assessment is not meant to compare and rank children against each other or against some fixed norms. ...

6.9.5 The level of a student on an indicator needs to be assessed after seeing a number of assignments and observations related to the student. Every single activity done by a student need not be given a grade. It is more important to give specific feedback on the work done. ...

6.9.6 There may be provision for a volunteer or peer mentor or "mitra"/friend or designated community member at the formal school when children are transitioning from a ST to the regular

school. This may be needed more with children who have attended a residential ST. The volunteer/friend's role is to familiarise the new child with academic routine and also to support academically if needed and facilitate her integration with other children in the class. Older children from the same school may be most appropriate to play this role or a community volunteer.

6.10 Post mainstreaming support.

6.10.1 The children mainstreamed should continue to be reviewed by the Local Authority, ST, teachers and SMC, as they continue to be vulnerable to becoming drop outs for the same reasons they were OoSC earlier. Support for ancillary problems/ issues which may have been provided during ST, may still be required like counseling, aids and appliances for disability, therapy for substance abuse etc.

6.11 Curricular design and organising the content:

6.11.1 At present teaching learning material and course content developed by States for ST is largely a condensed version of the school textbooks, making it into a fast track course. Since a larger number of children who are out of school are in the age group of 11-13 years it is critical that the learning approach adopted is not the same as for a 6 year old. The ST curriculum needs to be designed such that it factors the child's previous knowledge and age appropriate needs. The curriculum should provide opportunities to reason and analyze. Self-learning strategies would be more suitable for children in ST. For instance, a 12 year old girl who has never been to school will probably have to begin with the Class I book, which may not recognise the knowledge and skills she possesses through informal learning processes and follows the existing progression of learning (regardless of age). The material being used for ST including prescribed school textbooks and available supplementary materials, may still be organised on the basis of a particular class (and of moving from one class to another) which is less effective than basing it on the age/ abilities of the learner.

6.11.2 Graded materials maybe developed where there can be multiple entry and exit points for children as per their prior learning levels. The content of ST must be made flexible in order to suit the needs of varied backgrounds and learning levels of children that they cater to. The State level Academic Authority should anchor developing the framework, teacher training modules and material for teaching learning by drawing on the experienced teachers, adult educators, NGOs, DIETs, Mahila Samakhya etc. Some of the key principles are listed as below:

* Older children learn fast when exposed to a combination of learning experiences that include their existing knowledge and new information, in meaningful ways.
* Accelerated learning programmes have been particularly successful in bridging till grade five. Highly compressed teaching learning packages that merely condense school curriculum do not facilitate learning or the bridging process.
* Contextualising the curriculum in accordance with the life world and experiences of the learner has enabled substantive learning among the first generation learners.
* Orientation of teachers to the socio-cultural and economic realities of the learners helps.
* Formal collaborations and partnerships between government and NGOs are necessary for any innovative or appropriate strategy to be mainstreamed.

* Teaching methods and resources that promote self-esteem through motivation, use of small group peer and paired learning, interactive teaching with use of associative learning can be useful methods.
* The Special Training Centres may have judiciously chosen children's literature, classwork/homework/poems/letters/drawings/project/ progress/ timelines/maps; local art forms and paintings, floor puzzles and riddles. Reading corners can be set up, giving the child the freedom and choice to sit there and read.
* DIETs can work in tandem with SCERT to create locally relevant teaching- learning packages and simultaneously a training programme for the teachers. Within these institutions themselves reorientation may be necessary for visualising content.

6.11.3 NCF (National Curriculum Framework) principles have particular relevance for designing curriculum and materials for special training, the important ones are reiterated:

i. *Connect the child's world to the world beyond their familiar environment:* ST needs to connect the experiential knowledge of the child to formal literacy and numeracy skills using a constructivist approach.
ii. *Constitutional values:* Upholding constitutional values has been underscored in both NCF 2005 and the RTE Act as a core principle and must govern all dimensions of ST.
iii. *Learning in flexible peer groups:* The experience of several organisations has shown that learning in mixed-age groups is effective, so learning across ages may be promoted.
iv. *Active participation of learner in own learning.* This is particularly applicable for older learners, who come with developed language and numerical skills and have views on learning and performing tasks. The teaching learning methodology for them must build on prior learning.
v. *Holistic teaching and learning, not textbook centric:* Multiple mediums must be used, including traditional forms of cultural expression.
vi. *Flexibility:* As a child may enter special training at different levels, the structuring of the curriculum and materials must allow for flexibility, in contrast to the predetermined structure / sequencing of the existing syllabi. In order to ensure integration of children in ST within the school as early as possible, a degree of flexibility in the school system and routine will be needed. Significant part of curriculum lies in building confidence of older learners, facilitating self-esteem so that they are able to express themselves. Therefore, content and pedagogy should build on this dimension and this should not be an add-on part of the curriculum.

6.11.4 Positioning Special Training for various age groups:

Special training curriculum should be designed across particular age bands, which foreground and recognise the experience and ability of the child, prior to creating teaching learning material/teaching-learning processes. The following age bands may be considered as an exemplar:

Age bands	Age appropriate classes	Training duration	Key points for teaching-learning for the age bands
6, 7	I, II	Readiness (school/ group based) at school OR 3 - 6 months	These children should be provided a short input using the existing material for classes 1 and 2 and integrated into the regular at earliest possible. The approach of Activity Based Learning may be appropriate.
8, 9, 10	II,IV,V	3-6 months	Identify core concepts of content and skills required for Classes 3-5 in each subject (Language, Maths and EVS). Graded materials, which are specific activity based, may be developed based on these, with defined learning outcomes.
11-14	VI, VII, VIII	1 - 2 years	For children in this age group who have never been to school, adult learning approaches could be used for basic literacy and numeracy. The induction and preparatory activities are particularly relevant for this group. For language and maths graded material based on competencies may be developed. As this group will have to be introduced to subject based learning, one integrated package for social sciences and one for sciences can be developed.

7. Duration of Special training needs to be flexible and specific to each child. ...

8. Teachers and special training:

8.1 The RTE Act is not prescriptive about pupil teacher ratio in ST. Some options that can be considered for positioning teachers are:-

* The teacher needs to be recognisas the pivot of this program. Good materials and good bridge programmes fail in adverse PTRs or absence of motivated and skilled teachers.
* The creation of short in-service training modules annually to orient teachers on ST may be necessary. ...

9. Special Training - School Linkages/ Special Support Activities

9.1 A strong connect with the local regular school is absolutely essential for a successful mainstreaming and integration of children from ST. ...

9.3 Even after a child is in age appropriate class, she would need continuous support during holidays, summer vacations to catch up with peers. She has to be prevented from slipping into the labour force when schools are closed. Till such time school going becomes a habit and part of her everyday routine she has to be followed up to strengthen integration into the formal school. Thus induction process is a continuous process for poor children. While children learn to become students and get inducted into the world of classroom, teachers, friends, books, sports and so on, parents too get simultaneously oriented to support the new regimen of their children.

9.4 NGOs have played a very important role in developing innovative strategies for OoSC, especially for those belonging to marginalised communities. ... There should be a basket of options available for NGOs who can apply for running STs, with a focus on supporting these children to remain in school. All activities of an ST even if run by NGOs, should be done in close collaboration with the school and should be conducted through formalised partnerships. Engagement of NGOs should be done based on SSA's Financial & Procurement Manual and an MOU/Contract done with them.

NATIONAL POLICY ON EDUCATION 2016 - EXTRACTS

CHAPTER III
CONTEXT AND OBJECTIVES OF THE NEW NPE

3.1 Broad Objectives of the New National Policy on Education, 2016

3.1.1 The starting point for the new National Policy on Education (NPE) must necessarily be a clear articulation of the meaning and goals of education in the Indian context. What are the basic objectives which we seek to achieve through the new NPE? What knowledge, skills and other qualities do we seek to instil through education? What kind of citizen should emerge as an end product of the education system? What attributes should an educated citizen possess in order to be able to function as an informed and enlightened member of society?

3.1.2 Discussions on these objectives of education predate the independence of India. In 1938, a Committee on the Wardha Education Scheme (Nayi Taleem of Mahatma Gandhi) set up by the Central Advisory Board of Education (CABE), worked out the modalities for the implementation of the Nayi Taleem in great detail and recommended it for adoption by all provincial governments. This was reiterated by the CABE Committee on "Post-War Plan for Educational Development in India" (1944), also known as the Sargent Plan. This was a Plan to 'Indianise' education; universalize primary education; and improve the quality of education so as to make the Indian education system comparable to the best available elsewhere.

3.1.3 Education has all through been considered a key driver of national development; an essential condition for building a humane society. However, the core objectives of education in the coming years should encompass four essential components, - i.e., building values, awareness, knowledge and skills. While knowledge and skills are necessarily specific to the objectives of study and largely determined by factors like future employment or the pursuit of a vocation, awareness and values are universal in nature and should be shared by all. Ideally, these should foster development of personal qualities and behavioural attributes, which will help children, develop into good citizens.

3.1.4 Along with the economic objectives, (i.e., creating human capital), education should aim to develop pride in India and in being an Indian. It should foster learning about our ancient history, culture and traditions. Indian society is characterized not only by multi-lingual, multi-cultural and multi-religious diversity, geographical differences and regional disparities, but also by inequalities of income, wealth, opportunity and access to resources. Education should be seen as a powerful route to reduce regional and social disparities, and enabling choice and freedom to the individual to lead a productive life and participate in the country's development.

3.1.5 Education should foster peace, tolerance, secularism and national integration. Towards promoting greater understanding of diversity in India as well as social cohesion, education should inculcate awareness of India's rich heritage, glorious past, great traditions and heterogeneous culture. Education must enhance and sustain the cultural capital in the country, a powerful input for national development. Education must be seen as development and not a means of development; it should find a prominent place in the national development agenda.

3.3 Constitutional & Legal Provisions relating to Education

(g) Right to Education (RTE)

3.3.24 The RTE was originally included as a non-justiciable Right under the Directive Principles of State Policy. In the Constitution as originally adopted by the Constituent Assembly in November, 1949, Article 45 stated that: "The

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Ministry of Human Resource Development, Report of the Committee for Evolution of the New Education Policy, Government of India.

State shall endeavour to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years." Further, Article 41mandated the State, among other things, to make effective provision for securing the right to education "within the limits of its economic capacity and development."

3.3.25 In Mohini Jain vs. State of Karnataka (1992) the Supreme Court ruled that the RTE is implicit in and flows directly from the right to life under Article 21, thus virtually elevating the RTE to the status of a fundamental right. This was made explicit in Unni Krishnan vs. State of Andhra Pradesh & Others (1993) when the Supreme Court ruled as follows: "The citizens of this country have a fundamental right to education. The said right flows from Article 21. This right is, however, not an absolute right. Its content and parameters have to be determined in the light of Articles 45 and 41. In other words every child/citizen of this country has a right to free education until he completes the age of fourteen years. Thereafter his right to education is subject to the limits of economic capacity and development of the State."

3.3.26 The Constitution (Eighty-sixth Amendment) Act, 2002 inserted Article 21A in the Constitution as a Fundamental Right, mandating that "The State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine."

3.3.27 The consequential legislation envisaged to give effect to Article 21 A was The Right of Children to Free and Compulsory Education Act, 2009 (RTE Act), giving every child the right to full time elementary education of satisfactory and equitable quality in a formal school which satisfies certain essential norms and standards. With this, education has been moved to a rights based framework with the Central and State Governments having a legal obligation to implement this fundamental child right.

3.3.28 The RTE Act, inter-alia provides for the following:

(i) Right of children to free and compulsory education till completion of elementary education in a neighbourhood school.
(ii) It clarifies that 'compulsory education' means obligation of the appropriate government to provide free elementary education and ensure compulsory admission, attendance and completion of elementary education to every child in the six to fourteen age group. 'Free' means that no child shall be liable to pay any kind of fee or charges or expenses which may prevent him or her from pursuing and completing elementary education.
(iii) It makes provisions for a non-admitted child to be admitted to an age appropriate class.
(iv) It specifies the duties and responsibilities of appropriate Governments, local authority and parents in providing free and compulsory education, and sharing of financial and other responsibilities between the Central and State Governments.
(v) It lays down the norms and standards relating inter alia to Pupil Teacher Ratios (PTRs), buildings and infrastructure, school-working days, teacher-working hours.
(vi) It provides for rational deployment of teachers by ensuring that the specified pupil teacher ratio is maintained for each school, rather than just as an average for the State or District or Block, thus ensuring that there is no urban-rural imbalance in teacher postings. It also provides for prohibition of deployment of teachers for non-educational work, other than

decennial census, elections to local authority, state legislatures and parliament, and disaster relief.

(vii) It provides for appointment of appropriately trained teachers, i.e. teachers with the requisite entry and academic qualifications.

(viii) It prohibits (a) physical punishment and mental harassment; (b) screening procedures for admission of children; (c) capitation fee; (d) private tuition by teachers and (e) running of schools without recognition.

(ix) It provides for development of curriculum in consonance with the values enshrined in the Constitution, and which would ensure the all-round development of the child, building on the child's knowledge, potentiality and talent and making the child free of fear, trauma and anxiety through a system of child-friendly and child-centred learning.

3.4 Earlier National Policies on Education

3.4.1 In the Indian context, the fundamental role of education in nation-building, progress, security and social and economic development has been recognized from the outset. Even before independence, Gandhiji had formulated a vision of basic education in India, seeking to harmonise intellectual and manual work. Subsequently, the University Education Commission (Radhakrishnan Commission, 1948-49) and the Secondary Education Commission (1952-53), as well as other Commissions and Committees had reviewed the issues relating to educational reconstruction. The Resolution on Scientific Policy (1958) underlined, inter alia, the importance of science, technology and scientific research in education.

3.4.2 The first National Policy on Education (NPE) was formulated by the Government of India in 1968, based on the recommendations of the Indian Education Commission (1964-66), also known as the Kothari Commission.

3.4.3 Apart from the goal of universalization of education as envisaged in the Constitution, the 1968 NPE dealt with:

(i) measures to ensure that teachers are accorded an honoured place in society;

(ii) training and quality of teachers for schools;

(iii) stress on moral education and inculcation of a sense of social responsibility;

(iv) equalisation of educational opportunity for all sections of society, including girls, minorities, disadvantaged classes, tribal people and in rural areas;

(v) introduction of work-experience, manual work and social service as integral parts of general education;

(vi) science education and research;

(vii) education related to the needs of agriculture, industry and employment opportunities;

(viii) vocationalization of secondary education;

(ix) development of games and sports;

(x) spread of literacy and adult education;

(xi) strengthening of centres of advanced study;

(xii) setting up of a small number of cluster centres aimed at achieving the highest international standards;

(xiii) development of quality or pace-setting institutions at all stages and in all sectors.

3.4.4 The NPE of 1968 aimed to promote national progress, a sense of common citizenship and culture, and to strengthen national integration. It laid stress on the need for a radical reconstruction of the education system, to improve its quality at all stages, and gave special attention to science and technology, the cultivation of moral values and a closer relation between education and the life of the people.

3.4.5 However, the general formulations incorporated in the 1968 Policy were not underpinned by a detailed strategy of implementation, accompanied by the assignment of specific responsibilities and financial and organizational support. Consequently, with the passage of time, it was felt that the problems of access, quality, equity, utility and financial support merited a comprehensive review of the NPE.

3.4.6 The NPE was adopted by the Parliament in May, 1986. This was reviewed and modifications suggested by the Ramamurthi Committee (1990-92) and the Janardhana Reddy Committee (1991-92). After consideration by the Central Advisory Board of Education (CABE), a revised document entitled 'National Policy on Education, 1986 - Revised Policy Formulations' was laid on the Table of the House in 1992.

3.4.7 The NPE of 1986 as modified in 1992 reiterated the centrality of education for all as a national goal and sine qua non of all-round material and spiritual development, national cohesion and national self-reliance.

3.4.8 The 1986-1992 NPE endorsed the concept of a National System of Education in which all students, irrespective of caste, creed, location or sex, would have access to education of a comparable quality up to a given level.

3.4.9 It envisaged a common educational structure and a national curricular framework with a common core along with other components that were flexible and oriented towards occupational and employment requirements.

3.4.10 The common core included the history of India's freedom movement, the constitutional obligations and other content essential to nurture national identity. These elements cut across subject areas and were designed to emphasize India's common cultural heritage, egalitarianism, democracy, secularism, equality of the sexes, protection of the environment, removal of social barriers, observance of the small family norm, inculcation of the scientific temper and an international outlook characterized by peaceful coexistence and understanding between nations, treating the whole world as one family.

3.4.11 The NPE 86/92 emphasized life-long education, universal literacy and provision of opportunities to the youth, housewives, agricultural and industrial workers and professionals to continue the education of their choice, at the pace suited to them through open and distance learning.

3.4.12 The NPE 86/92 also delineated the competencies and sharing of responsibility between the Union Government and the States in terms of the 42nd Constitutional Amendment of 1976, which moved Education to the Concurrent List. While the role and responsibility of the States was to remain essentially unchanged, the Union Government would accept a larger responsibility to reinforce the national and integrative character of education, to maintain quality and standards (including those of the teaching profession at all levels), to study and monitor the educational requirements of the country as a whole in regard to manpower for development, to cater to the needs of research and advanced study, to look after the international aspects of education, culture and Human Resource Development and, in general, to promote excellence at all levels of the educational pyramid throughout the country.

3.4.13 The NPE 86/92 laid special emphasis on the removal of disparities and the equalization of educational opportunity to specific disadvantaged target groups, including removal of women's illiteracy, education of Scheduled Castes and Tribes, Minorities, the disabled and handicapped, neo-literates and through non-formal and adult education programmes.

3.4.14 Recognizing the holistic nature of child development, the NPE accorded high priority to Early Childhood Care and Education (ECCE), which was to be suitably integrated with the Integrated Child Development Services (ICDS) programmes.

3.4.15 The NPE 86/92 advocated a child-centred approach to education, with corporal punishment being firmly excluded and a no-detention policy at the primary stage. Talented students should be given special treatment and access to good quality education regardless of their ability to pay for it.

3.4.16 Vocational education was envisaged to be a distinct stream of education, intended to prepare students for identified occupations after, or even prior, to the completion of secondary education.

3.4.17 The NPE 86/92 proposed that the system of affiliation should be phased out by encouraging the development of autonomous colleges.

3.4.18 The NPE 86/92 envisaged the establishment of a national body and State Councils of Higher Education for policy making, planning and coordination of higher education.

3.4.19 Finally, the NPE 86/92 emphasized the need to raise the outlay on education to six percent of the GDP in the Eighth Five Year Plan (1992-1997) and to uniformly exceed this figure thereafter.

3.4.20 The NPE of 1986-1992 was followed up by a 'Programme of Action' announced by the HRD Ministry. However, with the passage of time, it has become clear that many of the objectives of the 1986 policy could not be achieved due to ineffective follow up on a continuing basis, with little attention being given to the implementation phase of the proposed policies.

3.4.21 This brief survey of the National Education Policies adopted in 1968, 1986 and 1992 underlines that many of the essential elements of these policies retain their relevance and will continue to do so in future. The earlier policies have analysed the ways and means of achieving the national objectives of universalization of education, providing equality of opportunity, improving the quality of learning outcomes, enforcing norms of accountability and benchmarking with international standards exhaustively and in depth. The policy prescriptions set out in these earlier documents are a valuable resource which will guide the new NPE, as it seeks to build on the past experience to refine, revise and attune the education policy to meet the needs of the nation.

3.4.22 In continuation and in furtherance of the objectives of NPEs of 1968 and 1986-92, a number of significant legislative and executive steps have been undertaken over the past two decades - some of these are mentioned in the paragraphs which follow.

3.4.23 The Right to Education Act, 2009 (RTE Act) has imposed legal obligations on the Central and State Governments to provide every child between the ages of 6 to 14 access to full time elementary education of satisfactory and equitable quality in a formal school which satisfies certain essential norms and standards. As against this, over 92 lakh children still remain out of schools as per official records. If one estimates the numbers of these added to the dropouts after one or two years, the number of out-of-school children could easily be around 3 crore. The challenge before the nation is still enormous in magnitude.

3.4.24 Since the adoption of the 1986-1992 NPE, the Central Government has launched several schemes to address issues of equity, access and quality in the elementary, secondary and higher education sectors. The shortfalls and lacunae in

the achievement of the targets laid down in these programmes need to be analyzed and corrective measures taken as appropriate.

3.4.25 The District Primary Education Programme (DPEP) was started in mid-1990s and was, for many years, the flagship programme of the Government of India in elementary education. Indeed, the *Sarva Shiksha Abhiyan (SSA)* programme, which is still an important implementation vehicle, is the successor programme to DPEP.

3.4.26 The *Sarva Shiksha Abhiyan (SSA)* programme, operational since 2000-2001, aims at the universalization of elementary education in a time bound manner. Although the original targets of bridging all gender and social category gaps by 2007 and achieving universal retention at the elementary education level by 2010 have yet to be achieved, the programme remains in force as one of the largest education initiatives in the world.

3.4.27 The *Rashtriya Madhyamik Shiksha Abhiyan (RMSA)*, launched in 2009, aims at enhancing access and improving the quality of secondary education by removing gender, socio-economic and disability barriers and making all secondary schools conform to prescribed norms. The principal objectives were to increase the total enrolment rate from 52% in 2005-06 to 75% over the five year period from 2009-2014 by providing a secondary school within a reasonable distance of any habitation. The programme aims to provide universal access to secondary level education by 2017, i.e., by the end of the 12th Five Year Plan and achieving universal retention by 2020.

3.4.28 The *Rashtriya Uchchatar Shiksha Abhiyan (RUSA)* was launched in 2013 as a Centrally Sponsored Scheme to provide norm based and outcome dependent strategic funding to eligible state higher educational institutions. RUSA aims to improve the overall quality of state institutions by ensuring conformity to prescribed norms and standards, adopting accreditation as a mandatory quality assurance framework, promoting autonomy and improving governance in State Universities.

3.4.29 As a party to the Millennium Development Goals (MDGs) adopted by the United Nations in 2000, India was committed, inter alia, to achieving universal primary education, in terms of both enrolment and completion of primary schooling for all girls and boys, by 2015. It was also committed to eliminating gender disparity in primary and secondary education, "preferably by 2005, and at all levels by 2015." Unfortunately, these goals remained unrealised. It is imperative now to work seriously to achieve Sustainable Development Goals (SDGs) by 2030.

3.5 The State of Education in India

(a) Elementary Education (Classes I- VIII)

3.5.5 The *Sarva Shiksha Abhiyan* programme for universalization of Education for All, along with the no detention policy, has resulted in a significant enhancement both in the Gross Enrolment Ratio (to over 95%) as well as in the enrolment of girls. Its precursor, the District Primary Education Programme (DPEP), was launched in 1994 with the aim of universalizing primary education in India. With 85% funding by the central government, the DPEP had opened 1.6 lakh new schools, including 84,000 alternative education schools delivering alternative education to approximately 35 lakh children.

3.5.6 In 2014-15, there were 14 lakh schools in the country imparting elementary education, with a total enrolment of 19.77 crore. Of these, Government schools numbering 11 lakh accounted for an enrolment of 11.9 crore at the elementary level; while 3 lakh private schools catered to 8.56 crore students. Additionally, there were 23,529 unrecognised institutions and 3750 unrecognised

Madrasas with an enrolment of 33 lakh at the elementary level in 2014-15. There were a total of 80 lakh teachers at the elementary level, including 47 lakh teachers in Government schools. In 2014-15, more than 8.6% of the total teachers at the elementary level were in private aided schools; 29.9% were in private unaided schools; and 2.6% were in unrecognised schools and Madrasas (U-DISE, 2014-15).

3.5.7 The Gross Enrolment Ratio (GER) at the primary level (grades I-V) was 100.1%; it was 91.2% at the upper primary level (grades VI-VIII) in 2014-15. The Net Enrolment Ratio (NER) was 87.4% at the primary level and 72.5% at the upper primary level. However, the Adjusted NER was 92.1% at primary level and 82.4% at upper primary level in 2014-15. Large number of children continues to leave the school before completing elementary education. In 2014-15, the retention rate at primary level was 83.7% and it was as low as 67.4% at the elementary level. Roughly, four in every 10 children enrolled in grade I was leaving the school before completing grade VIII U-DISE, 2014-15).

(b) Surveys Relating to Quality of Education

3.5.8 Currently, two large-scale nation-wide learning assessment surveys have been conducted in India at the elementary stage.

3.5.9 The National Council of Educational Research and Training (NCERT) has conducted National Achievement Surveys (NAS) periodically since 2001 for Classes 3, 5 and 8. The NAS is a school-based national survey covering all States and Union Territories and focusing on specific classes in particular years. It is carried out by NCERT under the mandate of the *Sarva Shiksha Abhiyan* programme to "monitor improvement in children's learning levels and to periodically assess the health of the government education system as a whole".

3.5.10 The NGO, *Pratham* has been bringing out its Annual Status of Education Report (ASER) since 2005, on the basis of extensive household surveys conducted to assess children's schooling status and basic learning levels in reading and arithmetic. In 2014, the surveys covered 577 rural districts, around 17,000 villages and over 6 lakh children between the ages of 3-16. The 2014 survey found that nearly half of the grade V students were not able to read at grade II level; and nearly same proportion of grade V students did not have the basic arithmetic skills, which they should have learned by the end of grade II (ASER, 2015).

3.5.11 It is also necessary to refer to *Gunotsav*, a mass assessment process, first introduced in Gujarat in 2009, but now also implemented with variations in some other states as well. It tries to address the above issues and serves as a starting point to achieve 'quality education' at scale. A key focus of *Gunotsav* is to highlight the levels of student learning (with a focus on basic skills like reading, writing and arithmetic operations in the lower classes and subject knowledge in the higher classes) and provide systematic year-on-year data and insights to improve learning levels in a measurable way.

3.5.12 The surveys indicate that, quantitatively, India is inching closer to the Constitutional and RTE Act guarantee of universal access and participation in elementary education. In 2013-14, the total enrolment at the elementary level (grades I-VIII) in India was 19.89 crore, including 12.1 crore in government schools, and 1.1 crore in aided schools. Girls share in the total enrolment was 48.2% at primary level, and 48.8% at upper primary level. At the all India level, nearly 39% of children enrolled at the elementary level were attending private schools (DISE 2013-14). ASER (Rural), 2014 found that 96.7% of children in the age group 6- 14 years were enrolled in schools in rural India. The survey also found that around 31% of rural children attend private schools.

3.5.13 Encouragingly, at the all-India level, the percentage of older girls (in the 11-14 age group) not enrolled in school has dropped from 10% in 2006 to close to 5% in 2014. Except for Rajasthan and UP, the figure has dropped significantly for many states, with Bihar showing the steepest decline from 17.6% in 2006 to 5.7% in 2014.

3.5.14 Further, visits to government schools on randomly selected days show an attendance rate of about 71% of enrolled children. However there is considerable variation in daily attendance across states, ranging from 50-59 per cent in Uttar Pradesh, Bihar, West Bengal and Manipur to over 90 per cent in Tamil Nadu and Kerala.

3.5.15 While the Gross Enrolment Ratio (GRE) is satisfactorily high, the quality of education, in terms of learning outcomes, is undeniably poor, particularly in the government school system. This is a matter of serious concern, since approximately 80% of all recognized schools at the elementary stage are government run or supported.

3.5.16 Reading is a foundational skill; without being able to read well, a child cannot progress in the education system. However, reading outcomes are unacceptably poor, particularly in Government and rural schools.

3.5.17 For example, ASER 2014 found that over 75% of all children in Class 3, over 50% in Class 5 and over 25% in Class 8 could not read texts meant for the Class 2 level. At the all-India level, the number of children in rural schools in Class 2 who could not even recognize letters of the alphabet increased from 13.4% in 2010 to 32.5% in 2014. In the last year of their primary education in Class 5, almost 20% of children could only read letters or were not literate even at this level; 14% could read words but not sentences; and 19% could read sentences but not longer texts.

3.5.18 Further, reading levels for children enrolled in government schools in Class 5 showed a decline between 2010 and 2012. While reading levels in Class 5 in private schools were also not high, the gap in reading levels between children enrolled in government schools and private schools appears to be growing over time.

3.5.19 Early childhood years are critically important, when the child's mental and physical development are at their highest, and when many lifelong characteristics are developed; this is when basic skills are acquired for subsequent development. Without a strong foundation in early years, the child's future progress, mental and physical, is highly circumscribed. The criticality of addressing the child's mental and physical growth in the early years has not been adequately understood or addressed. Available data indicate that in 2014, nearly 20% of children in Class 2 did not recognize numbers from 1 to 9 and nearly 40% of children in Class 3 were unable to recognize numbers till 100. More disturbingly these proportions have grown progressively and substantially since 2010, indicating that learning outcomes are deteriorating rapidly at the primary stage.

3.5.20 In sum, half of all children in Class 5 have not yet learned basic skills that they should have learned by Class 2. Close to half of all children will finish eight years of schooling but will still not have learned basic skills in arithmetic.

3.5.21 Teacher absenteeism, estimated at over 25% every day, has been identified as one of the reasons for the poor quality of student learning outcomes.

3.5.22 At the disaggregated level, the National Achievement Survey (NAS) reveals significant differences in the average achievement levels of students between states, suggesting that the quality of educational outcomes is far from equal across the country. In a number of States, NAS

results also show much diversity in achievement between students in the highest and lowest performing categories. Despite the significant differences in methodology, NAS confirms the findings from a number of other studies such as ASER, Educational Initiatives etc. and identifies poor learning outcomes as the biggest challenge facing Indian education. Poor quality of learning at the primary school stage naturally spills over to the secondary stage, where the gaps get wider; and continues to the college years, leading to very poor outcomes in the higher education sector. This inevitably leads to students being rendered incapable of taking full advantage of educational opportunities.

3.5.23 It is noteworthy that the poor quality of education in government schools has been underlined by a recent directive from the Allahabad High Court ordering all government servants in Uttar Pradesh to send their children only to public schools run by the State Basic Education Board.

CHAPTER IV
NEED FOR A NEW NATIONAL POLICY ON EDUCATION

4.1 The National Policy on Education, as formulated in 1986 and modified in 1992, has been the guiding document of the policies of the Central Government in the education sector for well over two decades. During this period, significant changes have taken place in India and the world at large. New technologies have transformed the way in which we live, work, and communicate; the corpus of knowledge has vastly expanded and become multi-disciplinary; and research has become far more collaborative. Since the NPE was last reviewed in 1992, there have been momentous changes in the situation in India and worldwide. These need to be taken into account in formulating a new NPE for the coming decades.

4.2 While the earlier policy was robust in conception and orientation, it has not delivered the desired results in terms of acceptable outcomes in the education sector. Despite the stated priority accorded to this sector and the plethora of specific programmes which have been launched, as well as the infusion of massive public outlays over the years, the state of education remains a conspicuous weak spot in the economy, indeed in society at large.

4.3 The earlier NPEs had aimed at a number of overarching objectives, which included 'development of quality', 'pace setting institutions in all stages and all sectors', 'setting up of a large number of cluster centres aimed achieving highest international standards', 'to promote excellence at levels of the educational pyramid', 'a child-centred approach to education recognizing the holistic nature of child development, to accord high priority to Early Childhood Care and Education (ECCE) with suitable integration with ICDS programmes', to mention a few. The previous NPE also emphasized need to raise outlays on education to 6% of GDP by 1992, and 'uniformly exceed this figure thereafter'. The Right to Education Act 2009 created legal obligations to provide education to every child between ages of 6 to 14, as also to sharply improve the infrastructure facilities in schools.

4.4 The earlier policies had laid out clear objectives and goals; however, many of these have not been realized fully or even partially. This has largely been due to absence of a clear workable roadmap and continuing operational guidance being put in place. Even more importantly, heavy politicization at every level of operation of the school system, from the village/block level to state headquarters, as well as increasing corruption, reaching every aspect of school administration have been prominent developments in the past three decades or so. These adverse factors have permeated every aspect of school administration, contributing to the current extremely poor

educational conditions at the ground level-negating the noble objectives of the policy of 1986-92.

4.5 The ground reality today is, depressingly, quite different from what was envisaged in the earlier policies. While gross enrolment in schools, as also at higher education institutions, has gone up sharply, these have been accompanied with many undesirable new factors. While the infrastructure facilities in the school system have significantly improved, there has been little corresponding impact on the quality of instruction or learning - on the contrary repeated studies have indicated a worrisome decline in learning outcomes in schools. The perceived failure of the schools in the government system to provide education of minimal quality has triggered entry of a large number of wholly private or aided schools, even in rural areas. Concurrently there has been mushroom growth of private colleges and universities, many of them of indifferent quality; leading up to questions about the quality of degrees generally obtained in the system. In short, while there has been some improvement in infrastructure, and significant gains in respect of enrolment and access, new gnawing worries about the quality of education have increasingly bedevilled the education system. These need urgent attention.

4.6 Education and public health are possibly the two most important development vectors in a democracy. While adequate financing alone will not address the needs of the education sector, governments in successive decades also do not appear to have comprehended the imperative need to ensure minimum essential funding to this area, which offers potentially the best investment opportunities for coming generations. This is a critical gap in overall national policy in the past decades.

4.7 As mentioned earlier, the quality of school education has been steadily on the decline. Inadequate stress in early childhood years has severely contributed to poor learning outcomes at successive secondary and higher education periods. Serious gaps in teacher motivation and training, sub-optimal personnel management in the education sector, absence of necessary attention to monitoring and supervision of performance at all levels - in short an overall neglect of management issues in this field have contributed to the current state of affairs. While it is true that there is wide disparity in this regard between states, with some states having displayed encouraging initiatives and innovative management, the overall picture in the country is unsatisfactory. A renewed look at policies in this regard, as also on a framework for implementation has become imperatively urgent.

4.8 While the RTE of 2009 has led to significant increase in enrolment, as also stress on infrastructure, new issues in the implementation phase have arisen which need to be addressed. In particular the 'no detention policy' needs to be examined, to ensure that it is optimally and judiciously implemented.

4.9 Despite references in the earlier policies to Early Childhood Education, there are no systems firmly in place to ensure this. This gap needs to be addressed effectively and comprehensively, without delay.

4.10 There is no clearly laid out policy in respect of private participation in the education system, both at the school and higher education levels. While there is scope for differential treatment of this issue in different states, the respective roles to be played by private-public players is not currently defined. Issues of regulation, autonomy and fee structure have all been dealt with in an ad-hoc manner, now requiring some baselines to be established. The rapid growth of higher education institutions, many of dubious quality and

functioning in grey market, has raised the question of necessary minimal financial conditions to be created to foster institutions of reasonable quality. Issues of transparent quality evaluation of higher education institutions, and revamping the system of affiliation are all issues which need to be currently addressed. The menace of institutions which have sprung up on the philosophy of 'degrees for cash' need to be squarely tackled.

4.11 In an aspirational society, it is natural that parents desire their children to obtain 'good' education. However formally linking the development of skills in vocational fields, bringing an academic equivalence to vocational accomplishments has not been seriously attempted. This also means that avenues for horizontal and vertical mobility of students have not been provided to an adequate degree. Fostering dignity and social acceptability to high quality vocational training is an important goal that begs attention.

4.12 While all higher educational institutions are not expected to engage in academic research, the overall engagement and accomplishments in the field of research leaves much to be desired. Research and innovation are key to promoting a dynamic and vibrant academic scene, with potential to contribute significantly to the economy. This aspect needs to be seriously addressed for appropriate redressal.

4.13 Despite the disparity in women's participation in higher education having been enunciated from the 1968 policy, the situation is far from satisfactory although several laudable efforts have been made leading to higher enrolment of women, including in professional courses.

4.14 Information and Communication Technology (ICT) has made rapid strides in the past couple of decades. New technologies are now available for information dissemination, enhancement of skills of all sorts, not yet suitably adopted to the needs of the education sector. The immense potential for inducting ICT to come to the aid of Indian education in myriad innovative ways has not been harnessed. Many experiments have taken place in the country, and a large body of knowledge has accumulated in this regard. ICT now provides a new and potentially highly effective vehicle for advancing the quality of education at all levels; this issue needs to be seriously explored and the alternatives expounded.

4.15 In short, while much has been achieved, there are serious gaps in implementation at the field level, and a worrisome lack of quality in every element of the entire system; it is necessary to recognize the ground conditions, if any major improvement is to be attempted. The issues mentioned above need to be diagnosed properly and addressed effectively.

4.16 The Government of India have launched several social and developmental initiatives such as Swachh Bharat Abhiyan, Digital India, Skill India, Make in India and Smart Cities. All these initiatives have significant backward and forward linkages with the education sector which need to be taken into account in the new NPE. For example, the induction of ICT also underlines the imperative necessity of providing electricity and connectivity, and making computer hardware, software and technical support available in every school, especially in rural areas. Similarly, Skill India and Make in India require the mainstreaming of vocational education, practical knowledge, hands-on projects and courses oriented towards meeting the needs of industry and employment.

4.17 The rate of change has accelerated. New technologies and disciplines have emerged and new knowledge and insights are being generated at a rapid pace. Social media transmit and disseminate information and opinions almost

instantaneously. Individuals, societies, governments and educational and other systems are often behind the curve in keeping pace with these developments.

4.18 Although expenditure on education has languished at well below the 6 per cent of GDP envisaged in the earlier NPE, there have also been pervasive and persistent failures in implementation leading to sub-optimal utilization of the resources provided. The survey of the present situation in the education sector underlines that outside interference, absence of accountability, unregulated commercialization and lack of standards continue to exist and have, indeed, increased substantially during the past two decades. It would not be an exaggeration to say that large segments of the education sector in India face a serious crisis of credibility in terms of the quality of education which they provide, as well as the worth of the degrees which they confer on students.

4.19 While 'equity' and 'access' have been, rightly stressed in the past as the guiding principles in the education field, the issue of quality has hitherto effectively been relegated to the background. It has now become an imperative necessity to lay major emphasis on improvement of quality across the board, without compromising on equity and access.

4.20 It is now time to undertake a comprehensive review of the educational scene in India as it is currently being administered and implemented, and articulate a new NPE.

CHAPTER V
GOVERNANCE IN EDUCATION

5.7 Public Expenditure on Education

5.7.1 The earlier NPEs of 1968 and 1986, as modified in 1992, had all recommended 6% of GDP as a norm for the national outlay on education. The 1968 NPE stated that "the aim should be gradually to increase the investment in education so as to reach a level of expenditure of 6 per cent of the national income as early as possible." This target had been endorsed by the 1986 NPE. The modified 1992 NPE went further and stated that "the outlay on education will be stepped up to ensure that during the Eighth Five Year Plan (1992-1997) and onwards it will uniformly exceed six percent of the national income."

5.7.2 Despite these exhortations, however, the expenditure on education has consistently remained well below this level. From 0.64% in 1951-52, the ratio climbed to 3.84% in 1990-91. It briefly breached the 4% threshold at the turn of the millennium but has thereafter reverted to a level of around 3.5% in recent years. Just for comparison, the corresponding level of expenditure in OECD countries is at an average of 5.3% of the GDP of those countries; indeed 11 OECD countries exceed 6%. Note that these are highly developed countries, where income levels are high; the governments consider such expenditure as investment in their people. In India's current state of development, a minimum of 6% of GDP, if not at much higher level, should be essential expenditure in the education sector.

5.7.3 As a percentage of the total government expenditure across all sectors (budgeted expenditure in the revenue account), expenditure of Centre and States/UTs governments on education has been hovering around 8% and 22.5% respectively over the past few years. While share of the expenditure on education by States and UTs as a percentage of their total budget on all sectors has been stagnating over the past few years, (i.e., around 22.5%), expenditure on education by the Central Government as a percentage of its total budgeted expenditure on all sectors has been increasing marginally during this period, [i.e., from 7.5% in 2011-12 (actual) to 8.6% in 2013-14 (budget estimates)] (Analysis of Budgeted Expenditure in Education, 2013-14).

5.7.4 All states together spent (revenue and capital Rs.3,75,291 crores in 2014-15; the Union Government spent Rs.78,661 crores that year. It is to be noted that over the past ten years the rate of spending of states has declined marginally; while the Central Government share has increased from 13% to 17% in the same period. Latest NUEPA estimates indicate that the highest growth in expenditure in past ten years is in elementary education, largely contributed by expansion of RTE (also presumably due to sharply increased pay scales of teachers based on Finance Commission's recommendations); on the other hand the growth in expenditure in secondary education is much lower. In contrast, allocation for adult education has started falling in recent years.

5.7.5 No clear basis is available to assess the quality of expenditure in education, as also to compare allocations between different regions in India. Using SSA as the proxy, latest NUEPA analysis points out that the Southern states have sharply increased their allocation of the total from 14% to 19%, while during the same time, the Eastern and Middle States lost their share from about 40% to 29%; the Northern states also lost their share from 40% to 36%. Again while numbers available are not fully reliable, research elsewhere indicates that there is a correlation between the expenditure share on education in each state to the quality and growth in education standards.

5.7.6 Due to financial transfer recommended by 14th Finance Commission, the states would get 42% of the tax devolution in FY 2015-16 as against 32% in the previous period, translating into an additional Rs.3,93,912 crores available to states in 2015-16. It is not quite clear as to how this will translate into additional allocation to the education sector. With less budgetary resources with GOI, allocations to education sector in general and school sector in particular may start coming down, in contrast to experience of recent years - indeed this is already reflected in the GOI budget of 2015-16. Besides, the funding pattern for most centrally sponsored schemes has been revised to 60/40, reducing the central share. It remains to be seen if in fact the states' share in education would go up or not - logically it should; only time will tell. Again it has been argued that the 14th Finance Commission award may not indeed result in higher allocation to the states. The key question remains as to what is going to happen to the issue of financing of school sector in totality from 2015-16 onwards - the issue is of critical importance.

5.7.7 The 6% norm is by no means excessive when set against the standards of other developing countries. While Cuba devotes over 18% of its GDP to education, Malaysia, Kenya and even Malawi manage to cross the 6% bench-mark. The global weighted average of Government spending as percent of GDP for all the countries in the world is 4.9%, substantially above that in India.

5.7.8 The Committee reiterates that 6% of GDP is the minimal level of expenditure on education which must be attained almost immediately if there is to be any realistic hope of meeting the needs of the sector.

Imperative need to maintain at least 6% expenditure of GDP on education

5.7.9 Policies in the past decades have visibly increased participation in education by all section of the population, as figures mentioned elsewhere indicate. Both in school education and in higher education, while distribution of students from economically weaker strata has increased, the casualty has been in the quality of education. India's strength is its human resource; this has to be nurtured - education is the simplest and surest way to ensure optimal utilization of India's demographic advantage.

5.7.10 A massive programme for skill development has been embarked by the government, noting that 65% of the population is under 35 years of age. The work force in the next decades need to be adequately educated / trained, for them to play a part in nation building. Indeed if this is not attended to with great care today, the projected demographic 'dividend' may actually turn out to be a 'disaster' in the next decades. This Committee's report recognizes and stresses the urgent need to sharply increase quality in our education system, which includes skills training and vocational education, for which new innovative comprehensive programmes need to be rolled out without delay. It will be short-sighted indeed if this is not recognized today, as we will then be mortgaging our tomorrow by failure to act now.

5.7.11 It is also in the above spirit that the Committee has recommended full roll out of the ECCE, with its unavoidable implications for additional finances. The need for vocational/skill training will also require massive investments. The funds for these have to be found.

5.7.12 The Committee realizes that additional allocations alone on education will not ensure quality - a number of collateral steps are essential, outlined by the Committee elsewhere in the Report. However, the extreme focus on pre-primary and primary education has to be intensified; the secondary sector has been relatively neglected - it has to be provided for adequately. The conclusion is inescapable that a minimum of 6% of GDP needs to be devoted to the education sector (not including the separate needs of skills/vocational training.

5.7.13 The 1968 as well as 1986 policy rightly stressed the minimum 6% expenditure of GDP in education. Successive governments had not heeded to this call. Development of the human resource is a basic national infrastructure; there is perhaps inadequate recognition that it is even more important than physical infrastructure.

5.7.14 Considering the critical importance of focusing on the school sector, and equally to develop qualitatively and quantitatively the higher education sector, it is now imperative that funds should be found to meet the total needs of the school sector; the resources from the private sector need to be adequately marshalled for the needs of the higher education sector.

5.7.15 The approach to funding programmes in the child education sector must undergo a fundamental change. Programmes must be budgeted from the bottom up, instead of being pruned to fit top down budgetary allocations, as is presently the case.

5.7.16 It is a truism, but nevertheless worth reiterating, that there can be no better investment than in the future of India's children.

Recommendations

5.7.17 The Committee recommends that the outlay on education should be raised to a minimum level of 6% of GDP with immediate effect.

5.7.18 Additional funding needs to be found for meeting the needs of ECCE as recommended elsewhere in the report.

5.7.19 The separate needs for vocational/skills training, in large scale, are also imperative; additional financing, outside the 6% referred to would need to be found.

5.8 Need for Special Academic and Other Support to Children from Socially and Economically Weaker Sections

5.8.1 The Committee has recorded that over the years, accessibility to education in India has significantly improved. It is also largely true that the equity aspects have dramatically improved, particularly after RTE has come into being. There is now general awareness of the constitutional/

statutory duty that every child should have a substantial period of formal education. While infrastructure deficiencies continue in the school sector and the dropout rates are also unconscionably high - aspects which have been highlighted in this report - the fact is that our school and higher education sectors are now open to segments of society which were not participating hitherto. Indeed the main message of this report is to stress the need for up-gradation of the quality of education, in all its senses, across the board.

5.8.2 The field visits, as well as the interaction that the Committee members had with experts, officials, teachers and other stakeholders, have highlighted the need relating to one aspect which has not been sufficiently recognized or commented upon by observers and researchers, especially in respect of school sector, but also as it partially obtains in the higher education sector. Apart from the infrastructure and other systemic gaps in management and organization that have been described in the report, there is perhaps inadequate articulation of one key element, relating to the process of 'learning', as it obtains in the Indian scene today.

5.8.3 The Committee has observed that with all the safeguards that the system provides to ensure equity, and equality among all concerned, there is a significant element of handicap suffered by the economically weaker segments, as well as a substantial membership of the socially backward communities relating to inequality in learning opportunity. The reference here is not to the fact that expensive private schools are accessible to the relatively affluent, who also have access to private coaching options to ensure that they get the most of their educational opportunities; there are other certain sociological and circumstantial factors which have not been hitherto sufficiently understood, or not commented upon. In three separate sets of circumstances, the Committee feels that these factors come into play. Some elements of these are mentioned below:

(i) It is well recognized that in the early childhood classes, particularly Class 2 to Class 4 the basic language and arithmetic skills are learned by the child, which becomes the core base to build on for their future education. Indeed there has been a reference to the principle of '90-90' - which refers to the goal in every class that 90% of the students acquire mastery over 90% of what is being taught. This is the ideal, but is rarely achieved. Indeed ASER and other reports have commented on the very substantial percentage of students, even at class 8 level, unable to have mastery of the curriculum of say, class 4. This failure in the early classes will surely handicap a child throughout his educational career, indeed whole life. It is noticed that there is no inbuilt mechanism within the schooling process or in the pedagogy, or the safety-net procedures to keep a watchful eye on laggards, to ensure that they are given a helping hand close the gap to reach to the average level of the class. The Committee has elsewhere referred to 'remedial measures' or 'augmentation' systems - there is no additional focus that in general the children from economically weaker sections and socially disadvantaged groups need special care, attention, from all who oversee the task of looking after the education of these children. In short, the first area where this principle of 'special attention' should apply relates to the earlier primary classes, to target the children from economically weaker segments and from socially disadvantaged classes.

CHAPTER VI
SCHOOL EDUCATION

6.1 Structure and Delivery of School Education

6.1.1 The broad pattern of school education in India has been described in the earlier part of the report; in this section some critical issues relating to structural organization of schools and their impact on cost of education, and its quality are discussed.

6.1.2 There has been massive expansion of school education in India in the last few decades. There are 15 lakh schools in the country as per DISE data for 2014-15. Government owns and manages nearly 75% of elementary, 43% of secondary and 40% of higher secondary schools, the remaining are privately owned and managed. There are 25.95 crore children enrolled in school education, including 19.77 crore at elementary level; 3.83 crore at secondary level; and 2.35 crore at higher secondary level (U-DISE 2014-15). Enrolment in private unaided elementary and secondary schools is around 33% each; and 39% at higher secondary level. Private unaided and aided schools account for nearly 42% of the enrolment in the school sector (grades I-XII).

6.1.3 School education in India is provided mostly in small schools. Nearly 33% of all schools taken together have less than 50 students and 54% less than 100. About 77% of schools have less than 200 students. The proportion of small schools in the government sector is relatively higher than in private. The preponderance of small schools not only affects quality of teaching and learning, but also makes school education inequitable, and expensive in terms of per pupil expenditure. Such schools are neither academically nor financially viable.

6.1.4 Several studies have established that basic infrastructure facilities like availability of class rooms, toilets, and drinking water impact attendance, retention, and quality of learning. The RTE Act lays down the minimum physical and academic infrastructure for a school. Unfortunately, most Government schools, and a large proportion of private schools do not fulfil the norms prescribed by the RTE Act. At elementary level, only 6 out of 10 children enrolled in Grade I reach Grade VIII, 47% children drop out by the time they reach Grade X. Dropout rates for SC/ST and girl students are generally higher. Thus, while there has been improvement in school infrastructure in many states due to initiatives taken under SSA, the overall condition is far from satisfactory. It is not as though conditions are any better at the secondary school level - a matter of equal concern.

Recommendations

6.1.5 The delivery of school education through small, non-viable schools with low enrolment, inadequate teachers, poor facilities and high per pupil cost has adversely impacted the quality of school education in the country. The Committee therefore recommends that the focus of development of school education must now shift from physical expansion to consolidation of existing school system. The Committee recommends that each State undertake a detailed exercise of school mapping to identify schools with low enrolment and inadequate infrastructure.

6.1.6 Wherever possible, efforts should be made to convert existing non-viable schools into composite schools for better academic performance and cost effective management. It will be easier to consolidate, improve infrastructure and provide more teachers when smaller schools located in the same neighbourhood are merged. Ideally, when schools are merged they should be located in the same campus as the secondary/senior secondary school. At other places where very small schools are to be merged with other schools, students will need to be provided transport facility through School Management Committees. With merger and consolidation, teacher availability will improve due to redeployment, and it will also be possible to appoint full time principal/headmaster for schools with viable student population. It will also be possible to provide better sports infrastructure, computer and science labs, and facilities for extracurricular activities. More than the infrastructure availability, children benefit from the sense of belonging in a school, which is well staffed and better equipped. The Committee was informed that some states like Rajasthan,

Chhattisgarh and Gujarat have started the process of consolidation, which is yielding good results. The Committee, therefore, recommends that Centre in consultation with States should issue common guidelines for mergers and consolidation without diluting the spirit of easy access laid down by RTE Act.

6.1.7 The Committee is of the view that the consolidation referred to above will enable the country to achieve one class - one teacher norm in a foreseeable future.

6.1.8 The Committee also recommends expansion of open schooling facilities to enable dropouts and working children to pursue education without attending formal schools. The Committee has elsewhere made detailed recommendations for creation of skill schools for improving employment opportunities for high school students.

6.2 Teacher Management

6.2.1 The teacher is the fulcrum around which school education revolves; it is rightly said that an education system is as good as its teachers. While many initiatives have been taken in the last few decades to improve the process of teacher recruitment, transfers, deployment, and competencies, the system, by and large, continues to be chaotic, and not capable of providing good quality school education.

6.2.2 There are more than 80 lakh teachers in elementary schools, and more than 20 lakh in secondary and higher secondary schools in the country. Around 59% of elementary teachers are in government schools; and yet, around 8% of all elementary schools in the country are single teacher schools.

6.2.3 Indian society and culture has traditionally accorded a position of great respect to teachers. They were respected for their knowledge, wisdom and commitment to their students. Unfortunately teachers have, during the last 30-40 years, have lost that respect, and are not now seen in very favourable light. The Committee believes there is no possibility of improving the quality of our school education unless we restore the credibility of our teachers.

6.2.4 There are many teacher related issues in our school education which need to be addressed. Some of these are:

(a) Teacher Shortages

6.2.5 It is estimated that there is a shortage of more than 5 lakh teachers in elementary schools; nearly 14% of Government secondary schools do not have the prescribed minimum 6 teachers. Typically teacher vacancies are more in tribal areas and far off villages where teachers are reluctant to be posted due to inadequate facilities.

(b) Teacher Absenteeism

6.2.6 Teacher absenteeism has plagued our school system for many years. Teachers are unionized and politically influential as a result of which there is neither political will nor administrative initiative to remedy the situation. Some states are trying to address the malaise by strict vigilance and monitoring, and use of mobile phones and bio-metric attendance recording, but the situation is far from satisfactory.

(c) Teacher Recruitment and Transfers

6.2.7 Teacher recruitment and transfers have become a major source of corruption in many parts of the country. Some states are trying to address the problem by introducing transparent and merit-based processes but elsewhere this remains a blot on the school education system.

(d) Teacher Grievances

6.2.8 There are thousands of cases filed by

teachers and pending in courts, mainly concerning their service conditions. Lack of efficient systems to address teacher grievances has affected teacher morale. There is also resentment among teachers against their deployment for several non-academic activities in spite of injunction of the RTE Act.

(e) School Leadership: Role of Headmaster/Principal

6.2.9 Till recently most states did not have an independent position of Headmaster in primary schools; one of the teachers was given additional responsibility of Headmaster. While Government secondary schools did have the post of principal, many remained vacant for years due to delays in recruitment, litigation and administrative apathy. Lack of effective leadership in Government schools has contributed to indiscipline among students and teachers and falling academic standards.

(f) Teacher Education and Training

6.2.10 This has been discussed in another section of the report; suffice to say here that majority of teachers lack adequate subject knowledge and required teaching skills which has resulted in poor quality of classroom transaction and learning levels.

Recommendations

6.2.11 The Committee is convinced that unless there is a competent and committed cadre of teachers, quality of school education cannot improve. The Committee feels there is an urgent need to address the above major issues relating to teacher shortages, absenteeism, recruitment and transfers, teacher grievances, and professional development of teachers in a comprehensive and effective manner. Some directions to approach these objectives are referred to below.

6.3 Teacher Education, Deployment and Professional Development

6.3.1 The poor quality of school education is a direct result of poor quality of teacher education and teacher training. Teaching which was at one time considered a noble profession is no longer the career choice of our youth, particularly in urban India. Students with better scores at higher secondary and graduate level prefer engineering, medical, management, and commerce courses and generally those who do not get admission in any of these courses join B.Ed. as a last resort.

6.3.2 In their interactions in different parts of the country, the Committee was told time and again of the poor quality of our B.Ed. courses. The one year programme did not equip the future teacher either with subject knowledge, nor teaching skills. For many years B.Ed. degrees could be obtained by correspondence courses until these were shut down. The quality of most other colleges offering B.Ed. programmes was far from satisfactory. State Governments and NCTE became partners in proliferation of such colleges which were nothing but degree shops.

6.3.3 The condition of Primary Teachers Training Colleges has been no better. For many years eligibility for admission to such course was 10th pass and after one year diploma these teachers could teach students of 7th and even 8th! Even today the entry level eligibility for a primary school teacher is only 12th pass, graduation is required for teaching in upper primary level. The rapid expansion of primary education and demand for teachers led to mushroom growth of sub-standard diploma colleges, and many teachers certified by these colleges became teachers in Government primary schools.

6.3.4 For the last 3-4 decades, Government schools have employed teachers with low academic achievement, and inadequate pre-service training. It is only recently that RTE Act has laid

down graduation as entry level qualification for teachers of upper primary sections, and NCTE has prescribed compulsory 2 year B.Ed. course which would result in Government schools getting better quality teachers in future; till then the system will have to depend on in-service training of lakhs of not-so-proficient existing teachers for improving learning standards in Government schools.

6.3.5 Our education system has paid a heavy price for neglect of teacher education. The Committee feels that some drastic, even unpopular measures will need to be taken to improve the quality of teacher education and teachers.

Recommendations

6.3.6 Regional Colleges of Education used to offer 4-year integrated teacher education program after 12th. Delhi University and Institute of Teacher Education Gujarat offer similar programmes with good results. The Committee feels that the time has come when integrated 4-year BA/BSc/B.Ed. courses should be introduced in all States. The advantage of this is that the student has to make an affirmative career choice for teaching, the course will be strong in subject content and students will acquire pedagogical skills along with subject knowledge. State Governments should gradually convert existing B.Ed. to integrated courses by offering preferential employment to such graduates.

6.3.7 The Committee also recommends that the possibility of introducing 5-year integrated course after Std X for elementary school teachers, and 5-year course after 12th for higher secondary teachers should be explored. An advanced one-year diploma course for secondary teachers may be prescribed to enable them to teach in higher secondary classes.

6.3.8 For hilly, tribal and inaccessible areas, alternative models of pre-service training need to be explored to improve the quality of teachers. DIETs in these areas can run 5-year courses (or 10+3) exclusively for girls after Std. VIII, with full financial support and job assurance, to address the problem of teacher shortages in these areas.

6.3.9 The Committee recommends that for entry in existing B.Ed. courses, there should be minimum eligibility condition of 50% marks in graduation. The Committee recommends strict application of TET for recruitment of all teachers. Centre and States should jointly lay down norms and standards for TET.

6.3.10 For existing teachers, Committee recommends 2-month compulsory vacation training every five years.

6.3.11 The Committee has recommended elsewhere that learning outcomes for each class should be laid down and evaluated by periodic internal and external assessments. Teachers should be held accountable for failure to achieve learning outcomes within a prescribed time frame.

6.3.12 The Committee also recommends compulsory licensing or certification for teachers of Government and private schools based on independent external testing, every 10 years, to ensure continuing minimal standards in teacher performance.

6.3.13 SCERTs have to play a critical role in teacher training. Most SCERTs and DIETs do not have the required capability for this. The Committee strongly feels that SCERTs, DIETS, BRCs and CRCs should be strengthened by induction of education experts and capacity-building. The Committee was informed that there are large number of vacancies in SCERTs and its formations which have not been filled for many years.

6.3.14 Another issue affecting functioning of SCERTs, DIETs, BRCs, etc. is that there is no separate academic cadre for teacher trainers. Officers working as DEOs and DPEOs, which are coveted administrative posts, often get posted to DIETs which they consider as a punishment. There is a need to have a separate academic cadre for teacher trainers. Ideally teacher trainers should have the same qualifications as college lecturers, and enjoy the same pay scales. Committee also feels that minimum teaching experience should be prescribed for appointment as teacher trainers.

6.3.15 In order to strengthen the structure of teacher training, the Committee also recommends that good B. Ed colleges and University departments should be used for in-service training of teachers.

6.3.16 The Committee recommends that Teachers Unions and Associations should be encouraged to take up academic responsibilities, and to contribute effectively to curriculum and text book development.

6.3.17 The key to making improvement in learning standards is to invest in preparing better qualified and professionally trained teachers who will be result-oriented and accountable. This area has not been addressed for too long. These are measurable objectives, but unless bench-marks are prescribed for achieving incremental progress from year to year, things are unlikely to improve. Strategies need to be evolved and targets set for improvement in these aspects.

6.3.18 While some states have taken commendable initiatives to streamline the process of recruitment of teachers, the Committee feels that the Centre and States should come together to formulate norms and guidelines to prescribe processes which are efficient, transparent and merit based for recruitment of teachers in schools. Tamil Nadu has had for many years an independent Teachers Recruitment Board and the Committee was informed about its satisfactory performance. Since every state has to recruit large numbers of teachers every year, the Committee recommends creation of separate Teacher Recruitment Commissions like the Public Service Commission for recruitment of teachers, principals and other academic and management cadres in education institutions. The Committee also recommends that for elementary schools, district cadres should be created for better management.

6.3.19 The Committee feels that after consolidation of non-viable schools, it will be easier to fill up vacancies of headmasters and principals. The Committee recommends leadership training for all HMs and principals.

6.3.20 The Centre and States also need to jointly develop norms for fair and equitable deployment of teachers to ensure that vacancies, if any, are equitably distributed across the state. Shorter tenures and other incentives will need to be offered for postings in tribal, remote and inhospitable areas.

6.3.21 The Committee was impressed by the system adopted by several states for many years in the matter of teacher transfers. Norms for transfers are laid down, applications for transfers invited, and approval given in transfer camps attended by applicants and in the presence of local officials, non officials and media in an open and transparent manner.

6.3.22 The Committee feels that norm based, open, transparent and merit based systems for recruitment and transfers will not only reduce corruption but also improve teacher morale and credibility of school education.

6.3.23 The Committee feels that strong political and administrative will is needed to improve teacher attendance and discipline. Absenteeism and indiscipline have to be handled with utmost

strictness. SMCs and headmasters will also need to be empowered to take disciplinary action against errant teachers. States need to follow injunctions of RTE Act and not depute teachers for any non academic activity other than census, election and disaster relief permitted by that Act.

6.3.24 The Committee recommends that Centre and States should jointly prepare norms and guidelines for teacher accountability. The Committee has elsewhere recommended that learning outcomes for each class should be formulated, and monitored through internal and external evaluations. Teachers and headmasters should be held accountable for achieving the prescribed outcomes, and their career progression linked to their academic performance.

6.3.25 Elsewhere, in the context of tracking student outcomes on a continuous basis in schools, a recommendation has been made for creation of live databases so as to facilitate teaching and learning assessments at school level. Structures should be created to integrate student outcomes and relate them to teacher performance - this should be the predominant criterion for making teachers accountable for their performance, after controlling for school quality and demographics.

6.3.26 The Committee has also recommended elsewhere the need to create setting up of education tribunals to redress teacher's grievances.

6.3.27 Teacher absenteeism, teacher vacancies, and lack of teacher accountability have destroyed the credibility of our school education system. These issues can be resolved only with strong political consensus; all efforts would otherwise be ineffective. The Committee therefore recommends formulation of a national agenda and commitment to address these issues.

6.5 ICT as an Additional Tool in School Management

6.5.1 Many states are using IT-based applications for monitoring the performance of schools and student achievement. The Committee was informed about the Delhi experience which is being used successfully since 2005-05.

6.5.2 Schools are first mapped using GIS and satellite imagery, and graded according to distance, connectivity, infrastructure, teacher availability etc. The on-line student management system enables online registration of students for admission, their examination scores and performance analysis, issue of mark sheets and other certificates, including school leaving certificate and health records.

6.5.3 The Committee was informed that these measures resulted in increase in enrolment, reduction of drop-out rates, and increase in teaching days due to time saved on admissions and other paper work which teachers are required to do, in more than 1000 schools of Delhi. The Committee was informed of similar application of IT in other states also.

6.5.4 The data generated by ICT based management system can be voluminous and has to be used intelligently. Exception reports have to be generated for difficult areas like teacher absenteeism, vacancies of teachers, and infrastructure gaps. Exception reports can draw attention of authorities to schools whose performance is below average, for taking remedial action. These reports also provide information about better performing schools and good practices which can be used gainfully by other schools. Such reporting systems could become a powerful tool for improving school management and school performance.

Recommendations

6.5.5 The Committee recommends that tools like GIS mapping, ranking of schools according to remoteness and infrastructure/human resource

availability should be done for all schools at district level. By recording the particulars of a student from admission until issue of school leaving certificate online, records get built up and provide data for making periodic intervention. It is recommended that the online maintenance of students' records and teacher attendance should become mandatory for all schools. ICT based reporting system need to be converted to become an effective tool for improving school management and school performance.

6.6 25% Reservation for Weaker Sections and Disadvantaged Groups

6.6.1 The 'Right of Children to Free and Compulsory Education Bill, 2008', introduced in the Rajya Sabha specifically stated in its 'Objects and Reasons': "The proposed legislation is anchored in the belief that the values of equality, social justice and democracy and the creation of a just and humane society can be achieved only through provision of inclusive elementary education to all. Provision of free and compulsory education of satisfactory quality to children from disadvantaged and weaker sections is, therefore, not merely the responsibility of schools run or supported by the appropriate Governments, but also of schools which are not dependent on government funds."

6.6.2 The Right to Education Act, in section 12 (1)(c), has provided for all schools, including those belonging to any 'specified category', or any unaided school not receiving any kind of aid or grants to meet its expenses from the appropriate government or local authority, to compulsorily admit at Class 1 at least 25% of each class. This provision has been questioned, especially by the sponsors and managements of such schools. A variety of arguments have been put forth on the illegality and impracticability of these regulations, enjoining minimum reservation in each class. This provision, along with the RTE provision for 'no detention' has attracted much discussion and criticism in recent years. The Committee has separately examined the 'no detention' issue, and has made its recommendation.

(a) Constitutionality

6.6.3 The Constitutionality of the clause 12(1)(c) of the Right of children to Free and Compulsory Education Act 2009 is now a settled issue. It was challenged and upheld in the case of *'Society for Unaided Private Schools of Rajasthan vs. Union of India, (2012).*The Constitutionality of the RTE Act 2009 was reiterated in the Pramati Judgment on 7th May 2014.

6.6.4 In 'Society' the Supreme Court had held that: *"since the Article 19(1)(g) right is not an absolute right as Article 30(1), the 2009 Act cannot be termed as unreasonable. To put an obligation on the unaided non-minority school to admit 25% children in class I under Section 12(1)(c) cannot be termed as an unreasonable restriction. Such a law cannot be said to transgress any constitutional limitation" (Para 10)*

(b) Social Acceptance of Section 12(1)(c)

6.6.5 This clause has been received with acclaim and social approval internationally and nationally. Increasing awareness about this clause has led to a progressively increasing number of applications from the economically weaker and disadvantaged sections for free seats in private schools. National enrolment rates have seen a rise from 21% in 2012-13 to 29% in 2013-14 and 32% in 2014-15 indicating a year-on-year increase in the number of seats being filled through this mandate. It has been estimated that this provision, implemented so far in 50,000 schools has helped more than 20 lakh students cross the socio economic school barrier that segregates and ghettoises them.

6.6.6 An increasing number of schools are coming on board to accept the inevitability of no longer being exclusive to a homogenous socio-economic category. A study from IIM Ahmadabad, found that some educators see quotas 'as their opportunity to enact their role as social change makers', and as a chance for educators 'to act on values and commitments that they otherwise would not have been able to'.

6.6.7 The other side of the picture, which is unfortunately emerging has also been brought to the notice of the Committee, but which is not generally recognized. It is understood that a large number of 'low budget' private schools primarily in rural areas are anxious to go even well beyond the 25% minimum quota, mainly because their average costs are far below the costs of the common schools; they perceive an arbitrage opportunity to financially gain through differential cost structure - note that most common schools follow relatively high Pay-Commission-based compensation structure, as compared to much lower emoluments in the low budget schools. This is clearly an unintended aberration; a measure intended to benefit the socially backward classes is being used by certain private schools for monetary gains. However, this development, per se, need not require a review of the 25% reservation policy. So long as the government schools sharply improve their quality, as is the intention and prescription of this report, the flow to low budget (perhaps low quality) rural schools will automatically reduce. The Committee recommends that nothing needs to be done in this particular regard.

(c) Administrative Lacuna Removal - a Work in Progress

6.6.8 Administrative problems continue in the implementation of this provision, such as conformity of state rules to the intent of the Central Act, admission of genuine beneficiaries, delivery of 'free entitlements' and reimbursement to schools etc. Not all states indeed have started implementing this legal requirement. The fact that such problems vary from state to state indicates that this is work in progress. The next phase of implementation of this policy needs to focus on removing the anomalies and administrative irritants in implementation of this policy, while accounting for state-wide and local differentials.

(d) Study on Benefits to 75% in Private Schools

6.6.9 Ideologically, and in international literature, diversity in classrooms has been held to be of benefit to all students. In one of the few studies since the implementation of this provision, Rao (2013) found in Delhi that diversity in classrooms "had substantial positive effects on the social behaviour of wealthy students", based on empirical evidence. This is merely a mention; and if valid, is in the positive direction.

(e) Application of EWS Quota to Religious and Linguistic Minority Institutions

6.6.10 Minority (religious and linguistic) schools have been exempted from the RTE by the Supreme Court under Article 30 of the Constitution, as per the finding in the Pramati Educational and Cultural Trust vs. Union of India. Surprisingly even aided minority schools have been given exemption; not surprisingly there has been reportedly a marked increase in schools seeking minority status post this judgement! (Vidhi, Centre for Legal Policy).

6.6.11 Even given the current legal status, the question remains moot about a constitutionally permissible balance involving Article 21 (A), Article 15 (4) and Article 30. It is to be noted that the right under 21(A) has been constricted under the present legal interpretation. Indeed it can be argued with some merit that the responsibility to provide free and compulsory education of satisfactory quality to children from disadvantaged and weaker sections would extend to not only

government schools but also on schools not dependent on government funds. There is a likelihood that the present legal dispensation is a result of an earlier apex legal finding relating to higher education, now inducted to include elementary education in its scope and interpretation. Without entering into the legal aspects, it is now important to reconcile the right of the economically weaker sections with the right of the minorities under Article 30 (1); particularly when minority institutions often appear to clutch at any prop to ensure that their obligations, met by other aided or unaided schools, are circumvented. This issue needs further examination and clarification, not only to expand the scope of reaching out to EWS students, but also to ensure that minority institutions are established only for the genuine reasons envisaged by the Constitution - that they are actually designed to meet the basic objective to meet the predominant needs of minorities- that they do not use their 'Constitutional' privilege to manoeuvre out of national obligations established in overall public interest. The same issues need to be addressed in the case of linguistic minority schools, in a likewise manner.

Recommendations

6.6.12 The Committee feels that Clause 12(1)(c) Right of Children to Free and Compulsory Education is designed to conform to the spirit of a common curriculum and a common school system. It can assist in furthering a significant social objective. The operational problems and administrative issues need to be clarified to provide enough flexibility to states to implement the legal provisions in a smooth manner. The Committee does not recommend review of this provision.

6.6.13 The issue of extension of Clause 12 (1) (c) of RTE Act to minority institutions needs a review. The Committee feels that the larger national obligations to meet the rights of economic weaker sections should extend to all institutions including minority (religious and linguistic) institutions.

6.7 No Detention Policy

6.7.1 The no-detention policy has been in effect since the coming into force of the RTE Act in 2010. Section 30 (1) of the RTE Act provides that "no child shall be required to pass any Board examination till completion of elementary education." Under this policy, no child can be held back or expelled from school until the end of Class 8, when he attains the age of 14 and passes out of the purview of the RTE Act.

6.7.2 In its interactions with officials and experts in the field of school education, the Committee heard several arguments both in favour of and against retention of the no-detention policy. These are summarised below.

(a) Arguments in Favour of the No-Detention Policy

6.7.3 In favour of retaining the policy, it was stated that detaining children at the elementary level damages their self-esteem and give them a permanent inferiority complex. The older student feels humiliated and embarrassed being among students who are junior to him. The social stigma associated with "failing", has deeply damaging effects on the psyche of the child.

6.7.4 Fear of any kind, including that of failing in examinations and being detained, has a detrimental effect on curricular learning for children. Detention leads to children dropping out of school and taking to vagrancy, begging and petty crime. On the other hand, keeping children in school prevents a host of social problems, including juvenile delinquency and child marriage.

6.7.5 A child who is detained has to repeat the entire syllabus of that class, including material which he has already learnt. After having been detained, given appropriate effort from the teacher, the child may be able to cover the gaps in that class in two or three months and be fit to be promoted, but will nevertheless be forced to continue for another nine months in the same class, repeating the syllabus which he already knows.

6.7.6 Learning takes place in a continuum and any pass or fail categorization at a particular point of time is a narrow simplification and educationally invalid.

6.7.7 In rural areas and among below-poverty-line families, educational awareness is missing. Late admission to school is a common phenomenon and the default option is for children to drop out of school if they are left to their own devices. In some cases, children miss school for long periods due to poverty, illness, engagement in child labour or lack of awareness on the part of the parents. They lag behind in their studies and do badly in examinations. Detention will only aggravate these weaknesses and encourage them to drop out and remain unschooled forever. The no-detention policy addresses such issues.

6.7.8 The no-detention policy has resulted in a fall in the drop-out rates in elementary school and has kept children in the learning cycle for 8 years. A comparison of the results of the Central Board of Secondary Education (CBSE) and other State Boards' for class 10 and class 12 for the years 2009, 2012 and 2013, shows that the pass percentage has increased in respect of most of the States. Similarly, the pass percentage of students of CBSE for class 12 continues to remain high. This empirically validates the utility of the no-detention policy.

6.7.9 Empirically, there has been a steady rise in the GER at the elementary level, for both boys and girls, as well as for Scheduled Castes, Tribes and other marginalised sections since the coming into effect of the no-detention policy. In a deeply fragmented society such as India, this is a significant gain which should not be reversed.

(b) Arguments against the No-Detention Policy

6.7.10 As against this, it was argued that automatically promoting all children to the next class takes away all incentive for them to learn or for teachers to teach. The RTE Act requires that even a student who scores zero in all subjects or has not attended school even for a single day has to be promoted to the next class. It is important to maintain the link between promotion and learning outcomes, objectively measured through criteria such as attendance, test scores or examinations at the end of every class.

6.7.11 When children are assured of promotion to the next class regardless of their performance they become non-serious, inattentive to studies and irregular in attendance. For many students, the mid-day meal is the only incentive to go to school. Teachers too soon lose interest in teaching such non-receptive and unmotivated students. Consequently, while the no-detention policy has certainly resulted in a significant increase in student enrolment, there has been little or no improvement in academic standards or the quality of education.

6.7.12 Moreover, promoting laggards drags down the standard of the whole class handicaps the teacher's ability to teach the curriculum at the expected pace. Students, who are promoted to a higher class without academic validation simply on the basis of the no-detention policy, do not have the required educational competence, knowledge and skill to understand the lessons being taught in the higher class. Not having

mastered the syllabus of the previous class, they find it difficult to understand what is being taught and end up by disturbing the class. They tend to fare even more badly and fall back even further in every class.

6.7.13 This comment stresses the great importance of ensuring that the child learns the fundamentals of language (mother-tongue) and basic arithmetic in the primary classes. The importance of this cannot be overstated. Failure to do this will increase the pressure and tension on the child, drift him farther as he advances in the school system from the acceptable levels, at some point leading him to hate the school system.

6.7.14 On the other hand, the brighter students feel frustrated as the pace of the class is determined by the ability of its least competent members. The academic progress of the whole class is hampered and dragged down to the level of the lowest common denominator. This is not fair to the majority of the students in the class.

6.7.15 Moreover, the apparent reduction in the drop-out rate is an artificial construct and illusion created by the no-detention policy. Promoting children automatically only rolls over and postpones the problem of children dropping out of school. The drop-out rate tends to get bunched and shoots up in Class 8 at the end of the elementary stage of education.

6.7.16 A large number of teachers in Government schools strongly disapprove of the no-detention policy and feel that, instead of helping children, it has ruined the entire learning environment by letting children take promotion for granted. In the past few years, the number of students failing their Class 9 examinations has been on the increase in many States. In Delhi, for instance, the number of repeating students as a percentage of total students enrolled in Class 9 rose from 2.8% in 2010 to 13.4% in 2014.

6.7.17 Many States have sought a review of the no-detention policy. The Government of Delhi NCR has proposed that the no-detention policy be limited up to Class 3. The State Governments of Assam, Bihar, Chhattisgarh, Goa, Haryana, Punjab, Rajasthan, Sikkim and Tripura have requested that the policy be reviewed in representations to the Sub-Committee of the Central Advisory Board of Education (CABE) which was constituted to assess the implementation of the CCE.

(c) Committee's Views

6.7.18 After careful and intensive consideration of the pros and cons, the Committee is of the view that the no-detention policy should be continued, but only till the primary stage of elementary education, up to Class 5, when the child will be 11 years old. There is merit in the view that the child should not be saddled with the burden of failure and detention up to this age. Education should be inclusive and should have a common curriculum, so that all children are familiar with the basic concepts, tenets, principles and ethos of an Indian education.

6.7.19 At the upper primary stage, from Class 5 to 8, for children between the ages of 11 and 14, the Committee recommends that the system of detention of children who are below the requisite minimum standard should be reinstated. This will require a suitable amendment to Section 30 (1) of the RTE Act.

6.7.20 The Committee reiterates that this change should not be seen as being in any way regressive or as taking away a legal right which had been earlier accorded to children. On the contrary, detention should be resorted to after giving the child remedial coaching and at least two extra chances to prove his capability.

6.7.21 Specifically, on the basis of CCE and an end of term examination, the weak students should be identified and provided remedial teaching at the end of the school day or during holidays. The coaching should be conducted by the class teacher in the class-room after school hours. The student should thereafter be assessed and tested on his knowledge and understanding of the course material. If he fails to clear the bar, the process should be repeated, focussing specifically on areas where he is deficient. Should he again fail to clear the examination, he should be either detained in the same class or given other opportunities of pursuing his education through a vocational stream.

6.7.22 Separately it should be explored whether the advances in technology will provide an additional 'augmentation' avenue to help the slow-learner child make-up for lost ground. Elsewhere in the report possibilities and practical utilization of these are explored.

6.7.23 It is important to give the child adequate academic support and ample opportunity to demonstrate his ability and competence. However, if he is unable to do so, he should not be abandoned by the system, but should have avenues of learning and betterment made available to him in an alternative stream.

Recommendations

6.7.24 The Committee recommends that the no-detention policy should be continued, but only till the primary stage of elementary education, up to Class 5, when the child will be 11 years old. At the upper primary stage, from Class 5 to 8, for children between the ages of 11 and 14, the Committee recommends that the system of detention of children who are below the requisite minimum standard should be restored. This will require a suitable amendment to Section 30 (1) of the RTE Act.

6.7.25 The Committee reiterates that this change should not be seen as being in any way regressive or as taking away a legal right which had been earlier accorded to children. On the contrary, detention should be resorted to only as a last resort and after giving the child remedial coaching and at least two extra chances to prove his capability.

6.7.26 Specifically, on the basis of CCE and an end-of-term examination, the weak students should be identified and provided remedial teaching at the end of the school day or during holidays, for which new arrangements are to be created within the school system. The remedial teaching could be conducted by the school teachers or volunteers after school hours. The student should thereafter be assessed and tested on his knowledge and understanding of the course material. If he fails to clear the bar, the process should be repeated, focussing specifically on areas where he is deficient. Should he again fail to clear the examination, he should be either detained in the same class or given other alternative opportunities of pursuing education.

6.7.27 Separately it should be explored whether the advances in technology will provide an additional 'augmentation' to help the slow-learners make-up for lost ground.

6.8 Need to Amend the RTE Act, 2009

6.8.1 The Right of Children to Free and Compulsory Education Act (RTE Act) was passed in 2009 and implemented from 1st April 2010. The Act, even after six years, has been only partially implemented in most states.

6.8.2 The Act undoubtedly confers the right to every child for schooling, and surely has contributed to enhancement in 'enrolment'. However, it has been criticized for focusing largely on creation of physical and academic infrastructure, but not addressing the larger issue of improving

quality of learning, particularly in Government and aided schools. Experience of last 50 years shows that creation of good facilities and infrastructure does not necessarily result in better quality of education. The Act fails to make any provision which would directly improve learning outcomes of students.

6.8.3 The Act lays down stringent norms and standards which a new school must fulfil before it can get recognition. Existing schools have been given 3 years to fulfil norms, but the Committee was told that many private schools, located in slums and other congested areas, will not be able to do so because there is no space for building additional rooms or providing a playground. Such schools, even if they are providing good quality of education to poor children could face threat of closure. The Committee is of the view that recognition of a school should not depend only on availability of physical infrastructure, but also on assessment of quality of education provided by schools, to be determined by an independent system. The Committee recommends a greater degree of flexibility to be given to States to evolve norms of recognition, taking into account local conditions. India is a vast and divergent country and one set of norms cannot be applied rigidly and uniformly.

6.8.4 It has been rightly pointed out that the norms and standards for recognition have been laid down only for private schools. The Committee observed that in many states Government schools do not have adequate rooms, toilets, drinking water and other facilities; there is shortage of teachers and many teacher vacancies; and therefore the requirement of recognition of schools should also be prescribed by law for all Government schools. The Committee is of the view that Government should in fact set an example by providing required facilities in all its schools before it takes punitive action against private schools for not doing so.

6.8.5 Before the Act came into force, a number of community organizations used to run alternative schools in slums and bastis for drop outs and un-enrolled children. Both DPEP and SSA provided funding for such initiatives which fulfilled a social need. The Committee saw one such initiative by Gyanshala which runs a large number of very popular learning centres in the slums of Ahmedabad. After the RTE Act, such centres become illegal as they cannot satisfy the norms of a school, their funding under SSA has been stopped and they can be closed any time by authorities. The Committee recommends that separate norms for informal or alternative schools should be laid down and those which fulfil them should be allowed to continue.

6.8.6 The RTE Act gives enormous powers to Government and its officers, and if past experience is any guide, this can only lead to harassment and corruption. The Committee also feels that conditions in different states are so different that it is not practical to provide the same norms for all. Since the Act has to be implemented by states, greater flexibility should have been given to them to achieve the objective of free and compulsory education. While doing so, it is equally important to ensure that the salutary standards of infrastructure prescribed by the RTE should not be lightly watered-down for relatively trivial reasons; this discretion needs to be applied only taking into account relatively weighty local reasons.

Recommendations

6.8.7 The RTE Act needs to be amended to provide, in addition to infrastructure requirements, norms for learning outcomes which directly affect quality of education.

6.8.8 Infrastructure norms for recognition of private schools should also be applied to Government schools. There should be no discrimi-

nation between private and Government schools in the applicability of norms, and punitive action should be ensured for not adhering to them.

6.8.9 States should be given flexibility to determine their own norms for infrastructure requirement consistent with local conditions. One set of norms cannot be applied uniformly to a large and diverse country like India.

6.8.10 Local norms should be evolved for 'alternate schools', adopted to local conditions as appropriate.

6.10 Pre-School Education

(a) Present Position

6.10.1 At present, government schools provide education to children from the age of 6 (in some States from age 5) onwards. The legal obligation, as prescribed in the RTE Act, is that every child shall have a right to free and compulsory education in a neighbourhood school from the age of 6 to 14. Consequently, most children, and specially first generation learners, commence their education in primary school from the age of 6.

6.10.2 In practice, Early Child Care and Education (ECCE) up to the age of 6 currently does not form part of the formal education provided under the aegis of the Central or State Governments. This vacuum has been partly filled by play-schools and pre-schools which have mushroomed in the private sector.

(b) Importance of Early Childhood Years

6.10.3 It is universally recognized that early childhood is a very crucial period of life, when the foundations are laid for cumulative lifelong learning and human development. Psychologists, educationists, paediatricians and sociologists are all agreed that early childhood up to the age of 6 is a period of remarkable brain development that lays the foundation for all future learning and growth.

6.10.4 Research in neuro-science also confirms the importance of the early years in a child's life. It shows that within the span of the early childhood years, there are certain 'critical periods' for development of significant cognitive, linguistic, social and psychomotor competencies, which are known to contribute to later success in life.

6.10.5 The years from birth to 6 constitute a period of both extreme vulnerability and tremendous potential in human life. On the one hand, any damage or impoverishment suffered at this stage is likely to be irreparable; on the other, adequate protection, care and stimulation will provide a firm foundation for the future well-being and all-round development of the child's physical, social, emotional, linguistic and cognitive abilities.

6.10.6 Specifically, between the ages of 3 and 5, children gain physical confidence, strive for independence by doing things on their own, and experiment with objects in the surrounding environment. They show intense and lively curiosity about what is going on around them, enjoy the company of other children, seek to imitate adults, learn to assert themselves as individuals and begin to acquire self control and discipline.

6.10.7 Ensuring an enabling environment in early childhood represents the best opportunity for breaking the intergenerational cycle of multiple disadvantages - chronic under-nutrition, poor health, gender discrimination and low socio-economic status.

6.10.8 The past few decades have been characterised by rapid urbanisation and the breaking up of the joint family system. With the increase in the number of nuclear families and working

parents, the cushion which was earlier provided by elders and non-working family members has been steadily eroded over time, forcing many parents to send their children to pre-school. Others do so as a matter of choice, in order to give their children a head-start in primary school. In this way, the essential need to develop the young mind is being responded to in a sporadic manner, often without a scientific and pedagogically acceptable approach.

6.10.9 An effective programme to meet the developmental needs of children in age group 0-5, through a holistic and integrated programme of Early Childhood Education Development, is now imperative. In particular, while the other aspects need to be strengthened, an educational programme specially geared to the 4-5 year age group needs to be created, for implementation. While this will be executed through the existing governmental machineries as an addition to the current programmes, it is also necessary to reach the private sector agencies operating in this field with appropriate guidance and regulation.

(c) Role of the State

6.10.10 Without making ECCE an enforceable right, the Constitution specifically articulates the intention of addressing the needs of children up to the age of six. Under the 86th Constitutional Amendment Act of 2002, Article 45 of the Directive Principles of State Policy states that "the State shall endeavour to provide early childhood care and education for all children until they complete the age of 6 years".

6.10.11 The RTE Act refines this to make ECCE a quasi-legal right from the ages of 4 to 5. Section 11 of the RTE specifies that, "with a view to prepare children above the age of three years for elementary education and to provide ECCE, appropriate Government may make necessary arrangements for providing free pre-school education for such children".

6.10.12 Despite the above, it is noted that little has been done to bring education to the 4 - 5 age group hitherto, even though it is a constitutional requirement.

6.10.13 Ministry of Women and Child Development has formulated the National Early Childhood care and Education (ECCE) policy as approved by the Cabinet and notified by the Government of India in the Gazette on 12.10.2013. The vision of National ECCE policy is to achieve holistic development and active learning capacity of all children below 6 years of age by promoting free, universal, inclusive, equitable, joyful and contextualised opportunities for laying foundation and attaining full potential. The WCD Ministry's National ECCE policy includes universal access with equity and inclusion. For a variety of reasons, particularly presumably due to non-allocation of resources, this policy has not been rolled out countrywide in an effective manner.

6.10.14 The Committee recommends that ECCE for children from 4 to 5 years of age should be declared a right, and a programme for pre-school education needs to be implemented without delay.

(d) Modalities

6.10.15 The main interventions by the Government of India in child health and welfare for the age group 3-5 are being made under the **Integrated Child Development Services (ICDS)** programme, under the aegis of the Ministry of Women and Child Development (MCWD).

6.10.16 Launched in 1975, the ICDS scheme aims to improve the nutritional and health status of children by reducing the incidence of mortality, morbidity and malnutrition and to enhance the health and capability of the mother to look after the normal health and nutritional needs of the child.

6.10.17 The ICDS provides food and primary health-care to children less than 6 years of age and their mothers. In addition to fighting malnutrition and ill health, the programme is also intended to combat gender inequality by providing girls the same resources as boys.

6.10.18 Nutrition and immunization in the early years are of critical importance in ensuring the child's good health and ability to learn throughout his life. Poor nutrition has a negative impact on school enrolment and readiness. Indeed it is well established that lack of micronutrient inputs in early childhood has irreversible life-long adverse impact on many aspects including brain development, physical development/stunting, lack of concentration and so on. Undernourished children are less likely to enrol in school and would drop out, if enrolled. A severe or chronic lack of essential nutrients in childhood impairs language, motor and socio-emotional development. It is highly cost-effective to institute preventive measures, and support for children early on than to compensate for disadvantage as they grow older.

6.10.19 In rural areas, the ICDS services are provided mainly through Anganwadi Centres (AWC), which are typically staffed by women and helpers from local families who do not have permanent jobs with retirement benefits. These Centres provide supplementary nutrition, health education, immunization, health check-up and referral services. While AWCs are also formally tasked with providing non-formal pre-school education, in practice they are not equipped to do so.

6.10.20 Out of the nearly 16 crore children in the age group 0 - 6, the child population between ages 3-6 is 7.54 crore. By end of 2015, 3.6 crore children, in the age group 3-6 were enrolled in 13.47 lakh Anganwadis; while official figures indicate that most of them received pre-school education also, it is most likely that the focus was on nutrition and health, with probably hardly with any education component. The Committee proposes that pre-school education needs to be the required norm for all children in the age group 4-5 and should be treated as a right of the child.

6.10.21 The ICDS is being funded and managed by the MWCD. The implementation of the scheme has tended to focus on nutrition and health, to the detriment of early child education. In order to adequately address all the issues of ECCE in totality and ensure the holistic development of the child, it is necessary to ensure that the different functions are properly co-ordinated and receive adequate attention.

6.10.22 While all states agreed, in their interactions with the Committee, that children attending government schools must have access to pre-primary education, there were differences as to which department should be given this responsibility. One view was that the education component of pre-primary should be made part of ICDS. The other view was that pre-primary education is the responsibility of education departments and states should gradually introduce pre-primary education in government primary schools, and that Mid-day meal scheme should be extended to pre-primary sections; ICDS programme must continue for children in the age group of 0 to 3.

Recommendations

6.10.23 The Committee recommends that ECCE for children from 4 to 5 years of age should be declared a right, and a programme for pre-school education needs to be implemented without delay.

6.10.24 The Committee recommends that all children in the age group 4 - 5 should now be eligible to be covered for pre-school education; the system needs to be adapted, improved and

expanded to cater to all children in this age group - in other words, it is the right of the child in the 4-5 age group to receive pre-school education.

6.10.25 The Committee recommends that a new education component should be introduced in the Anganwadi practices, to ensure that the pre-school children are exposed to elementary education, with a carefully structured curriculum. This element will be blended with the procedures of the WCD, which will continue to be the operating ministry for the Anganwadis. Appropriate funding from the Centre and the States will be required, without leaving any gap in the budget of the WCD Ministry to enable the above to be rolled out. In a limited time period, the system should be expanded rapidly to cover all children of the 4-5 age groups. To the extent feasible the Anganwadi should be located in the premises of the local primary school or immediately adjacent to it.

6.10.26 The Committee recognizes that at present ICDS Aanganwadis are not adequately equipped to provide pre primary education. Following measures are suggested to strengthen Aanganwadis in this respect:

- *(i) NCERT should formulate curricular framework for pre-primary education.*
- *(ii) The suggested schedule of activities should be on the lines of a play school which could even function as a day-care/ crhche -cum-activity centre in the afternoons.*
- *(iii) SCERTs should conduct intensive training programs for selected Anganwadis workers and new teacher-workers to orient them to deal with the new components of handling pre-school children.*
- *(iv) SCERTs should provide training to the fresh as well as other teacher-workers using the NCERT curriculum but also to innovate and use local material to prepare activity related toys and play-things which stimulate young children.*
- *(v) Parents of the children should be encouraged to form management committees so that the effort is participatory and conducive to local needs. The school SMCs of the Primary school should be associated particularly if they have a younger child attending the Anganwadi centre.*
- *(vi) The health and nutrition component for Anganwadis will continue and should be fortified as the inputs impact on a child's health, growth and learning ability.*
- *(vii) Appropriate funding to meet the additional responsibilities and the costs thereof need to be provided for.*

6.10.27 Issues relating to coordination between the two ministries, and those relating to the State Governments and their field machineries need to be separately outlined.

6.10.28 In rural areas, ideally the Anganwadi should be located in the same premises as the primary school or the larger school complex in the village; this will facilitate utilization of common facilities, including playground etc.; in addition the child will get familiar with the school premises, with going to school becoming an easy habit. In many instances, the new child entering the Anganwadi may have a sibling in the primary school; this is an additional reason to locate the Anganwadi in the primary school premises or adjacent to it.

6.10.29 In urban areas, employers are obliged to provide day-care facilities for children of women working in the organized sector under various legislations, such as the Factories Act 1948, Mines Act 1952, Plantation Act, 1951, Inter-State Migrant Workers Act, 1980 and NREGA 2005. However, these legislations do not address the needs of children of women working in the unorganized sector.

6.10.30 The Committee believes that in due course all Government primary schools should have facilities for pre primary education. For this, it will be ideal if all Aanganwadis gradually get located either in the school premises, or as close to the school as possible. State Governments will have to prepare cadres of pre primary teachers, and create necessary facilities for their pre and in service training. The Committee recommends that the transition from Aanganwadi to pre-primary school should be gradual and seamless, and it should be left to each State to determine the time frame for achieving it.

6.11 Education of Children with Special Needs

6.11.1 Every child has the right to develop to her full potential and schools are expected to offer a stimulating experience that nurtures learning by all students. But children are different from each other and among them diversities exist on various dimensions. Having special needs is one such dimension. An inclusive approach has long been advocated by education experts. The recognition that learners with different degrees of disability, also referred to as children with special needs (CWSN), which would include varying degrees of visual, speech and hearing, locomotor, neuromuscular and neurodevelopmental disorders, (dyslexia, autism and mental retardation), need to be given the opportunity to participate in the general educational process has yet to become widely acceptable by school managements. The need to provide for students exhibiting difficulty with behavioural communication or encountering from intellectual, physical or multiple challenges is often treated as something that only special schools can handle.

6.11.2 There is a marked difference between what was earlier envisaged and the prevailing situation on the ground. The National Policy for Persons with Disabilities, 2006 (PWD) voiced the need for mainstreaming of persons with disabilities in the general education system through inclusive education, identification of children with disabilities through regular surveys, enrolment in appropriate and disabled friendly schools till successful completion of education. More recently the *RTE Amendment Act (2012)* stated that "disadvantaged groups" includes children with disabilities and thus all the rights provided to children belonging to disadvantaged group shall apply to children with disabilities also. According to another important provision of the RTE Amendment Act, certain specific excluded categories of disabled children namely children with "multiple" or "severe" disabilities were to be provided with the choice of attaining home based education.

6.11.3 The importance of preparing teachers who can teach in inclusive classrooms following an inclusive pedagogy has been referred to in the National Curriculum Framework for teacher education (NCFTE), 2009. NCERT in various position papers has underscored the need for developing a positive attitude among teachers, administrators, and other students in their attitudes to children with special needs.

6.11.4 Providing special training to every teacher will neither be feasible nor cost-effective. There is a need for a mechanism which can respond to the school Principal or teacher who seeks special training to be imparted to handle children with specific kinds of learning difficulties. Sometimes all that may be needed is professional advice for a limited duration; sometimes it may need more training.

6.11.5 At present there is no structure available which can oversee the uniform application of the precept of including CWSN as integral to the school system. There is also no mechanism through which school managements can draw on a pool of experts when needed. There is therefore a need to provide for the management of this sub-sector of school education in each state, through establishment of a CWSN Board, in a

way that provides oversight to the implementation of programmes which are intended for CWSN but which get little attention in the schools and within the classrooms.

6.11.6 The school can refer doubtful cases to an Identification, Placement, and Review Committee (IPRC) which also considers requests for admitting certain children with severe learning disabilities into special schools. Since there is no organisation or dedicated system available oversee that CWSN get due attention, it would be helpful to have a provision in the state acts. Specific procedures can be set out in the regulations of such statutes.

6.11.7 It is recommended that the on-going schemes which are intended to give special assistance to CWSN should continue. However the board referred above should oversee the implementation of the scheme, by obtaining six-monthly reports from the districts. A part-time sub-committee of experts preferably including child and clinical psychologists drawn from the nearest medical college or specialised facility should be set up. Any school or district educational officer can be authorised to refer a case for third-party assessment where needed, or where there is disagreement between the parents and the school management; or even when the school management itself is unsure about how to handle the child.

6.11.8 Fortunately, if detected early and a conducive school environment offered, CWSN can overcome many incapacities to learn and assimilate with other children. By including differently-abled children the advantage of peer learning is known to enhance the possibility of early improvement. It also sensitises children with no disabilities to respect and be tolerant of those with disabilities. This would leave a lasting mark on attitudes towards disability.

Recommendations

6.11.9 It is recommended that the on-going centrally sponsored scheme addressing children with learning difficulties should continue but the funding should have a relationship with the number of children falling in the category and identified by the schools but collated centrally.

6.11.10 An Independent Board may be set up under the state Education Acts to oversee the implementation of the scheme, by obtaining six-monthly reports from the districts.

6.11.11 An organisational structure for managing this segment of children at the district level should be incorporated in the State Education Acts with the regulations explaining the process to be followed for identifying and providing for children with special needs.

6.11.12 Handling children with learning disabilities is a complex task as every child with learning disability is unique. The Committee recommends that the Central Government takes the lead in encouraging the states to establish a nodal entity under the State School Acts which can oversee, intervene and guide schools to address the problem of learning disabilities among children. Government should also make available commensurate resources to tackle the needs of training, by creating part-time expert-cum-oversight Committees who can offer guidance, advice on special training to be given to selected teachers and generally check that the schools are capable of providing a safe and user-friendly environment for differently-abled children to a get the benefit of assimilation in most school activities.

6.12 Education of Tribal Children

6.12.1 According to Census of 2011, the tribal population of India is 10.42 crores which is 8.6% of total population of the country. In Madhya

Pradesh tribals constitute 14.69% of the total tribal population in the country, followed by Maharashtra (10.08%), Orissa (9.2%), Rajasthan (8.86), Gujarat (8.55), Jharkhand (8.29%) and Chhattisgarh (7.5%).

6.12.2 Tribals are in majority in Mizoram, Nagaland, Lakshadweep, Meghalaya, Arunachal Pradesh, and Dadra and Nagar Haveli.

6.12.3 There are over 700 notified Scheduled tribes in the country. Orissa has the largest number (62) notified tribes.

6.12.4 The literacy rate of tribal population compared to rest of the country is much lower as seen in the following table:

Year	Literacy rate of Tribal Population (in %)	India (in %)
(1)	(2)	(3)
1961	8.5	28.1
1981	16.3	43.5
2001	47.1	64.8
2011	58.9	72.9

6.12.5 Tribal population have also suffered from higher infant mortality rate, dropout rate, anaemia among women and other lower HDI Indices compared to rest of the population. (Source: Annual Report of Ministry of Tribal Development 2014-15)

(a) Problems of Education in Tribal Areas

6.12.6 Tribals in most parts of the country live in hilly and forest areas with poor roads and other means of communication. They live mostly in scattered homesteads rather than villages or mohallas, which makes it difficult to provide access to schools within short distance for all students. Teachers from non tribal areas are often reluctant to work in schools in tribal areas because of distance from towns, lack of housing and other amenities.

6.12.7 Teachers from other areas are also not familiar with local tribal languages and dialects and are not able to communicate effectively with tribal students, particularly in lower primary sections. Tribal students face difficulties in following prescribed text books which are not in their mother tongue, particularly when the content is not appropriately designed for them. In many states, text-books have been developed keeping in mind tribal dialects and their context.

(b) Education of Tribal Children

6.12.8 Keeping in view the peculiar problems of tribal areas, the main thrust of Central and State Governments has been to provide residential schools, known as *Ashram Shalas.* These schools provide free accommodation, food and education to tribal students, and have played a major role in improving access to education to tribal students. Government of India provides financial assistance to States for construction of new hostels and expansion of existing hostels. Government of India also provides pre-matric and post-matric scholarships to tribal students which cover tuition fees, hostel charges and allowance for books. Scholarships/fellowships are provided for studies abroad and research. There are schemes for financial assistance to States and NGOs to set up Vocational Training Centres and payment of training fees to tribal students pursuing vocational training courses.

(c) New Initiatives by States

6.12.9 During its visit to Raipur, the Committee was apprised of some of the initiatives taken in Chhattisgarh and Orissa. Chhattisgarh has launched a massive programme for quality improvement and monitoring under *APJ Abdul Kalam Shiksha Gunvatta Abhiyan.* Nearly 8000

class 1 and 2 officers of State Government periodically visit weaker schools which are provided capacity building and other inputs. Hostels are started in district towns to enable tribal students to complete secondary education. The State passed Right of Youth to Skill Development Act in 2013 under which a youth can demand to be provided within 90 days vocational training facility. Chhattisgarh also merged a number of schools with low enrolment with larger schools thereby reducing teacher shortages. Tribal Education which was part of Tribal Department has been placed under Education Department.

6.12.10 In Orissa text books and other learning material has been prepared for many tribal communities. In Gujarat a number of model residential schools have been started in PPP with reputed NGOs in education sector.

Recommendations

6.12.11 In spite of all the efforts made by central and state Governments, the state of tribal education is far from satisfactory. Their enrolment rate is lower and dropout rate higher than others, they have much lower representation in technical, engineering and medical courses. There have been several complaints of misuse of funds by Ashram Shalas.

6.12.12 The Committee feels that in order to improve access and quality of education for tribal children, greater responsibility should devolve on Government departments directly responsible for education. Tribal Departments do not have the domain knowledge or expertise which Education Departments have; TDDs have several other schemes also like rural development, rural infrastructure and services like provision of drinking water, drainage etc which does dilute their focus on needs of education. Chhattisgarh has already put Tribal Education under Education Department; the Committee recommends that their experience be studied and a dialogue started on the proposal.

6.12.13 However, the decision to give full responsibility to the education department should be taken with caution, as a lot depends on local factors. One key is that the level of supervision of the district administration should be quite high in tribal districts, compared to other districts where the district education system has a normal supervisory role.

6.12.14 In Ashram schools, in many remote pockets, the teachers also live on campus. It will be useful to link a nearby well functioning integrated higher secondary school/Kendriya/Navodaya Vidyalaya or another full-fledged secondary school to have regular operational, advisory, mentoring arrangements. In tribal areas the key has to be higher degree of local flexibility, with much delegation of local initiative, coordination among departments, and asking local agencies/officers to exercise discretion appropriately (with supervision, and accountability).

6.12.15 The Committee also recommends special focus on skill education for tribal areas. Opportunities for skill education need to be woven in the education streams in tribal areas. Since most tribal schools are residential, it will not be difficult, wherever infrastructure is available, to start skill courses after regular school time. NSDC and its associates are running some very successful skill programs in the heart of tribal areas. One such example is in Dantewada in Bastar where a Livelihood College offers nearly 20 skill courses, both in soft and industrial skills, and has created many job opportunities for tribal youth. There are many such examples; the Committee recommends that skill education should become an integral part of tribal education.

6.12.16 In some interactions the Committee was told that tribals find it difficult to understand the regional language which is the medium of instruction. However, the general feeling was that while the medium should be regional language, in the initial grades, it should be taught through local dialect. The Committee was informed that already there are several programmes under implementation in states having a large tribal population where the teacher teaches in tribal dialect of the area. In other states efforts are being made to produce bi-lingual text books. In the initial stages teachers would need training and requisite learning material in local dialects. Besides, additional efforts are required to promote science and teacher education in tribal areas. The school timings in tribal areas need to be made flexible to suit local needs.

6.15 Curriculum Renewal and Examination Reforms

(a) Curriculum Reforms and Renewal

6.15.1 The success of the New NPE would require a robust, comprehensive and futuristic curriculum that would prepare young persons to face the challenges of 'change'.

6.15.2 It is necessary to integrate curriculum in the content and pedagogy. It is the conceptualization, nature and design of the extent of dynamism inbuilt in the curriculum that has the strength to transform the education system as one "rooted to culture and committed to progress", which is the universally accepted premise. For example, education now needs to equip the learners on issues of climate change, global warming, pollution, depletion of water resources, various facets of environmental degradation, generating questions like: "How long will the planet Earth Survive?" Curriculum must inspire and offer hope, encourage to learner to act and find solutions. The challenge also is to link the curricular content with local needs and aspirations.

6.15.3 The main objective of our education system currently, unfortunately, is to prepare the children to do well in the examinations. Classroom behaviour and dynamics are guided by this overarching goal. Our examination system is based on rote memory; questions are asked from text books and students who are able to reproduce what is written in the text books manage to get high scores. The Committee understands that memory and recall are an integral part of any education system, but endorses the views of several experts that the focus of education should be more on critical thinking; the examination system should be geared to test understanding rather than ability to reproduce the text-book script.

6.15.4 The Committee has made several recommendations for reforms in the examination system, which if implemented, would make class room learning more broad based rather than confined to a text book. The earlier curricular frameworks had observed that instead of just one set of approved text books for all schools, flexibility of choice from multiple text books should be given to schools and teachers keeping in mind regional and cultural needs. The Committee has observed elsewhere that text books are no longer the sole source of knowledge; Internet has made available information and knowledge on an unprecedented scale, and teachers and students should make full use of it. The focus of class room transaction should now shift to self-learning from a variety of learning materials and teacher should become a facilitator and guide in this process.

(b) Examination Reform

6.15.11 The broad objectives of education are to provide knowledge and skills, create a spirit of inquiry, and instil values to become a good human

being and a good citizen. The sole objective of Indian education system, as it has evolved in the last few decades, appears be to prepare students for the Board examinations.

6.15.12 The Indian examination system is criticised, often with some justification that it suffers from every malpractice human ingenuity can think of. Papers are leaked, copying is rampant, examiners are compromised, and mark- sheets manipulated. The problem is more serious in some states, in others also the situation is not satisfactory.

6.15.13 Many initiatives have been taken to curb examination malpractices. Shift to objective type and multiple choice questions, bar coding of answer sheets to protect student identity, strict vigilance and video recording at examination centres to prevent copying, grading instead of aggregate marks, computerized tabulation and preparation of mark sheets, online announcement of results have helped in improving the system.

6.15.14 The core underlying issues are deeper than just the process of conduct of examinations. Some of these are discussed in the following paragraphs.

6.15.15 The Indian examination system is based on rote memory; questions are asked from text books and students who are able to reproduce what is written in the text books manage to get high scores. As part of examination reforms, many boards have introduced objective type and multiple choice questions, but these also often test memory more than understanding, analysis and application. The Committee recognizes that the memory and recall are an integral part of any education system, but is strongly of the view that the focus of education should be more on understanding and the examination system should be geared to test understanding rather than regurgitating text-book script.

6.15.16 The evaluation of a student should not depend entirely on performance in end of the year examination. Weightage needs to be given to performance in periodic tests, classroom participation and quality of assignments throughout the year, for which objective and transparent criteria need to be laid down.

6.15.17 Credibility of examinations is questioned because the marking system is shrouded in secrecy. After every public examination, an open-access website must show Item-wise expected answers and other performance analysis. This could be in the form of a moderated blog so that teachers-educators, teachers and even others could share their comments.

6.15.18 It is necessary to ensure that the results of Board Examinations are correct and reflect the reality. A large number of candidates score marks above 99% and many score 100% too; the same students often do poorly in Entrance Tests for Engineering or other technical courses. This also renews doubts about the logic of the examination system.

6.15.19 Many Boards follow a practice of awarding grace marks to students to enable them to pass the examinations, and to inflate overall pass percent. The students who pass out of such a 'diluted' system would either not be able to compete with students from elsewhere or not perform well in their future jobs. Practices like 'grace marks' serve little purpose.

6.15.20 Scaled scores and percentiles are the modern scientific methods to provide the most accurate results of a large scale examination like a Board Exam. Marks are inadequate as they do not reflect the difference in difficulty across subjects and years. Grades indicate a band in which students lie, but are inaccurate, for example, at the border of these bands. Scaled Scores

and percentiles adjust for the varying difficulty of different questions and tests and provide comparable results across students.

6.15.21 The Committee also recommends that a system of online on-demand board examinations should gradually be tried out as this will offer flexibility and reduce year end stress for students and parents. A National Level Test open to everyone having completed class 12 form any School Board should be designed - this should make the successful candidates eligible for admissions to various courses, without a multiplicity of entrance tests. (This has been referred in Chapter 8.)

6.15.22 Secondary Examination Boards lack the capacity to adopt modern scientific methods of question-setting and revaluation. Assessment capacities in CBSE, ICSCE and the State Examination Boards need to be strengthened. There is a need to build a discipline focused on developing appropriate questions for assessing learning. Improved and modernized evaluation systems would achieve results only when teachers are adequately prepared professionally, are regularly oriented and re-oriented through in-service education programmes; and free from non-academic duties.

6.15.23 The Committee is of the view that public examination system serves a useful purpose, and cannot be dispensed with. Though some education commissions and reports have called for the abolition of public examinations, the Committee does not recommend them being made optional. Among other factors, public examinations hold teachers and schools accountable for student performance.

Recommendations

6.15.24 Reforms to curriculum need to relate to the emerging aspirations and national needs that include social cohesion, religious amity and national integration.

6.15.25 There is need to reduce curriculum load and avoidable emphasis on rote learning - the focus has to be on making learning joyful, creative, participatory, and stimulate and encourage the child to think.

6.15.26 The Committee notes that left to market forces, it has been well established that private coaching increases disparities between classes of students; the relatively well-off segments of the student population can benefit through supplementary coaching, whereas the educationally and socially backward classes generally cannot afford supplementary coaching classes. The prime requirement is to improve formal teaching standards in schools, and also create structures for assisting children in school to keep up with the median levels of each class, through special support measures.

6.15.27 The Committee recommends that the Guiding Principles for curricular reform enunciated by NCF 2005 are valid and need to be implemented vigorously. Teachers and students should have access to multiple sources of knowledge rather than only the prescribed text book. Examinations should be designed to test wider awareness, understanding and comprehension, and not merely ability to reproduce text book script. Curriculum should be broad based and aim for overall development of students in an increasingly technology driven environment.

6.15.28 The Committee is satisfied that the examination system needs serious reform. In the first place, the necessary political will needs to be summoned, and all decision-makers in this sector need to be convinced that the rampant

malpractices need to be addressed with great urgency. Reform of examination process needs to be put on national agenda and the Centre and the States have to work together to put in place processes, which will restore confidence in the system. In addition, wide ranging technical reforms to clarify the purpose and objectives of different types of examination - whether this is for conferment of a degree or qualification to assess the quality of learning or whether it is competitive in nature, on the lines suggested in the following paragraphs are equally essential.

6.15.29 The present examination system focuses on testing the student's memory; questions are asked from the text books and students who can reproduce what is written in the text books get high scores. Many State Education Boards have introduced objective-type questions, but these also test memory rather than understanding, analysis and application. The Committee recognizes that memory and recall are an integral part of any education system but is strongly of the view that the focus of education should be more on understanding and the examination should be designed to test understanding rather than regurgitating text book script.

6.15.30 The performance of a student should not be judged only by results in the Board examinations. Credit should be given to periodic classroom tests and evaluation. The process of continuous evaluation should be transparent and the result should be shared with students and parents.

6.15.31 There are always questions in the minds of students and parents about the criteria and process of marking answer-sheets followed by the education Board. The evaluation criteria should be transparent and in public domain. After every public examination and open access website should show item-wise expected items and other performance analysis. This could be in the form of a blog in which parents, teachers and students can share their comments and feedbacks.

6.15.32 It is important to ensure that results of Board examinations are correct and reflect reality. Instances where students score 99 or even 100% marks in Board examinations, but do poorly in Entrance Tests for technical courses, raise issues about the credibility of evaluation quality of Boards.

6.15.33 Many Boards also follow the practice of granting grace marks to artificially inflate pass percentage. The Committee recommends that this practice should be discontinued.

6.15.34 Many countries have discontinued the system of giving marks and grades and instead give scaled scores and percentile which is the modern scientific method to provide accurate results of large scale examinations like the Board examinations. Scaled scores and percentiles adjust for the varying difficulty of questions and tests and provide comparable results across students, states and even years. The Committee recommends experts should examine the feasibility of percentile system for our Board examinations.

6.15.35 The Committee also recommends that a system of online-on-demand Board examinations should gradually be tried out as this will offer flexibility and reduce year end stress for students and parents. A National Level Test open to everyone having completed class 12 from any School Board should be designed. It should make the successful candidates eligible for admissions to various courses without appearing in different entrance tests.

6.15.36 Assessment capacities in CBSE, ICSCE and State Examination Boards need to be

strengthened. Teachers and educators need to be trained on developing appropriate questions for assessing and learning.

6.15.37 The Committee is of the view that Board examinations serve a useful purpose and should be continued.

6.18 School Children and Public Health

6.18.1 School children represent the future wealth of the nation. Good education is possible only when the child is in reasonably good health and is able to utilize the learning opportunities provided to him/her. The situation relating to healthcare, including preventive, diagnostic and curative practices is not well developed in India, and particularly so in rural India. Past experience has shown that health care facilities are accessed more frequently to deal with immediate symptoms relating to diarrhoea, fever, and acute respiratory infection etc. Data suggests that children are likely to seek health services for emergent and urgent need than for preventive ones; potentially that the girl child needs are accorded lower priority in society in general. This topic is outside the remit of the Committee; however, since good health is a collateral requirement for good education, the Committee has ventured to make some recommendations in this regard. Taking quality healthcare to the schools, particularly preventive, is of utmost importance in our society.

6.18.2 Every third girl child in India is undernourished; every second girl anaemic (55.3%). Child nutrition status has declined in many North Indian states. At least 44% of kids sleep hungry. The immunization levels which ought to be close to 100%, at least upwards of 99%, stand at around 52% in India. These are appalling statistics which are unacceptable. 40% of the world's undernourished children live in India; 48% of Indian children below 5 years are stunted, and 42% are under-weight - all the result of poor nutrition and lack of micronutrients. One can imagine the impact of the above on the quality of education in our school system. About 62% of children under five years of age are vitamin A deficient. 31% of school age children are iodine deficient. These deficiencies cause death and disability, and retard brain development, IQ, cognitive skills, energy levels, and productivity. India's performance on these crucial outcomes is among the worst in the world. Our nutrition indicators are worse than even our neighbours Bangladesh, Pakistan, Sri Lanka, and Nepal. It is possible to address these issues with minimal intervention, using technology; the Committee argues that innovative ways of reaching our school children with preventive, diagnostic and basic treatment facilities can make a sea-change in their learning capabilities, and sharply reduce school drop-out rates.

6.18.3 Elsewhere, reference has been made to the imminent roll-out of Digital India, which will cover practically the entire country with a reliable communication network in relatively short time. The question is, has the time come to link the latest technology available, to take diagnostic and preventive care, even at an elementary level, to the school; this will contribute to educational quality, as well as public health - both prime objectives in a democracy.

6.18.4 Currently available electronic technology can be used, through Digital India, to roll-out a relatively inexpensive, and effective preventive/diagnostic procedure to reach school children. The suggestion would call for well-equipped mobile vans, with real-time connectivity with a bank of doctors, say at divisional or state headquarters, to facilitate onsite basic tests (blood, ECG, eye-testing, etc.), and provide instant advice, with periodical (say, every three months) visits to schools. As this system is rolled out, this will create a permanent medical record (available in the cloud) for each child, with a unique identity.

On a real time basis, each loaded mobile diagnostic centre could visit each school in a district, turn by turn; be on real time contact with a bank of medical experts (say at divisional headquarters); access the condition of each child and provide immediate diagnostic and treatment advice as required. This may relate to eye-sight, condition of gums, or more serious conditions like TB etc. - the point is that the child has the benefit of early diagnosis if something is amiss. A back-of-the-envelope calculation would indicate that the costs may not be prohibitive; no major treatment or procedures are recommended - only primary diagnosis as a pointer for future action. Already such electronic packages are available which could be harnessed or adapted in this regard. (Attention is also invited to such recent innovations as 'Swasthya' tablets, even though this relates only to blood and related tests). It is understood that some states and private foundations have already started experimenting with these ideas.

Recommendations

6.18.5 Noting that quality school education is closely linked with preventive and diagnostic healthcare, the Committee recommends large scale experimentation of deploying well-equipped mobile vans for diagnostic purposes to schools, with real time connectivity with a bank of doctors to provide immediate advice, and where possible to provide primary treatment to children. The Committee is satisfied that this will address the issue of education quality, as well as the school drop-out problem, while meeting the overall national objective of healthcare to the citizen. It is recommended that the Centre and the State Governments should sponsor widespread experimentations to implement this idea on the ground, to explore viable options. The aim should be that every school in the country should be covered in a relatively short period of time.

6.19 Academic Counselling and Aptitude Testing

6.19.1 There are three aspects of school counselling that have not been given much importance hitherto and require to be addressed.

(a) Identifying and Guiding Students with Special Needs as a Support to the Class Teacher

6.19.2 The first relates to the identification of children with special needs and equipping teachers to include such children in the normal process of teaching and learning in the classroom. The manner in which this should be handled has been set out in a separate segment on children with disabilities. In most countries which have opted for providing counselling services the identification of such children is one of the responsibilities of the school.

6.19.3 There are two more areas where a school counsellor can be of immense assistance and these relate to the need for providing guidance to students who are slow learners (without any disability) and being able to observe and steer students into vocational streams of relevance to the local area or to be seconded to small and medium industries.

(b) Counselling for Underachievers

6.19.4 Under achievement in a growing child and particularly those that are caused by extraneous factors prevent an adolescent from fully realizing his optimal academic potential. This not only affects his future progress within the school system but even later in life. Often, children need to be guided and sometimes even counselled to adopt the best study habits which is particularly necessary in schools where children come from the less privileged sections of society and do not have a home environment which promotes academic learning.

6.19.5 Research has shown that it is not about inability but rather a manifestation of incomplete realization of one's potential despite having innate ability that is often at stake. Deficient study habits often keep students from achieving what they are capable of because of a lack of motivation. When there is no disability or mental disorder and a child continues to underachieve, the factors have to be addressed instead of ignoring them in the expectation that things will improve on their own. It is the desire to achieve that often differentiates the high achievers from the low achievers. It is here that school-based assistance can be beneficial particularly for young people who come from unstable homes, where family turmoil, marital discord, financial concerns and lack of emotional support cause anxiety and unhappiness. Motivated students manage to do quite well but it takes expertise to find out what motivates a particular student.

6.19.6 Counsellors can prove to be of great help in providing a confidential outlet to enable a student to unburden himself. School-based assistance is the most widely accepted form of psychological therapy for young people. It is understood that the Central Board of Secondary Education guidelines expect one school Counsellor to be appointed for every affiliated school. However it would appear that such services are available in only a minuscule proportion of the government schools.

6.19.7 Whether the factors are attributable to an unsatisfactory family atmosphere or whether there are other reasons for absence of motivation, counselling can assist not only the child but also teachers to improve academic attainment and psychological well-being of the students.

(c) Identification of students who may have manual dexterity or ability to learn trades

6.19.8 The inclination of students is different and their latent talent/ability will come out if they are asked the right questions or put through a simulation exercise in a competitive setting. At present under the apprenticeship act there are some 74 trades listed as eligible for coming under the Act. Considering that a student can register as early as the age of 14, a counsellor can not only offer guidance but also do the necessary networking with nearby industries.

Recommendations

6.19.9 The Committee recommends that, from the point of view of the counselling, it is essential that students receive early guidance and support in finding placement in local industries. A competent counsellor would be able to recognize the special aptitude and skills of children from an early age and be able to steer them into appropriate openings as apprentices or otherwise suitably guide them.

STATISTICAL SUPPLEMENT

CONTENTS

Table 1 (PS)
Availability of Schooling Facilities in Habitations at Primary and Upper Primary Stages

Sr. No.	State/U.T.	Number of Habitations Having Schooling Facility at						
		Total Number of Habitations	Primary Stage			Upper Primary Stage		
			Within them	Within 1 KM but not within them	Beyond one km	Within them	Within 1 KM but not within them	Beyond one km
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Andaman Nicobar Islands	475	267	65	143	124	173	178
2	Andhra Pradesh	68012	54180	10274	3558	20183	33915	13914
3	Arunachal Pradesh	5065	2262	762	2041	808	1662	2595
4	Assam	71049	34361	27106	9582	13858	40817	16374
5	Bihar	88382	54284	25103	8995	31482	48362	8538
6	Chandigarh	15	14	1	0	14	1	0
7	Chhattisgarh	39369	28786	8453	2130	13158	21121	5090
8	Dadra Nagar Haveli	472	264	178	30	94	309	69
9	Daman Diu	116	39	61	16	30	77	9
10	Delhi	316	223	66	27	115	135	66
11	Goa	1220	686	282	252	248	675	297
12	Gujarat	33995	26292	5499	2204	22468	9466	2061
13	Haryana	7273	5664	998	611	3955	2821	497
14	Himachal Pradesh	38119	11935	16938	9246	6144	24818	7157
15	Jammu Kashmir	24090	15412	5763	2915	8016	12165	3909
16	Jharkhand	59931	37004	19593	3334	16382	37035	6514
17	Karnataka	52715	35118	10971	6626	20609	25137	6969
18	Kerala	14492	7253	3687	3552	3981	8649	1862
19	Lakshadweep	7	7	0	0	7	0	0
20	Madhya Pradesh	83256	71761	8439	3056	30054	44103	9099
21	Maharashtra	69171	51007	13575	4589	20747	37962	10462
22	Manipur	4080	2334	782	964	823	1706	1551
23	Meghalaya	9153	6760	1416	977	3307	3189	2657
24	Mizoram	715	692	8	15	544	33	138
25	Nagaland	1335	1232	82	21	492	252	591
26	Orissa	88500	49371	29178	9951	24731	50056	13713
27	Puducherry	277	177	80	20	86	179	12
28	Punjab	11713	9872	1272	569	4903	5355	1455
29	Rajasthan	85391	56605	19573	9213	32903	40027	12461
30	Sikkim	1262	679	335	248	376	592	294
31	Tamil Nadu	61078	28974	23709	8395	12546	36923	11609
32	Tripura	7824	3583	3019	1222	1836	5010	978
33	Uttarakhand	26790	13147	10258	3385	5399	18316	3075
34	Uttar Pradesh	230001	109476	97951	22574	62603	145901	21497
35	West Bengal	121860	43263	68632	9965	12063	84870	24927
	India	**1,307,519**	**762,984**	**414,109**	**130,426**	**375,089**	**741,812**	**190,618**

Table 3 (PS)
Schools Belonging to Different Categories

Area:Rural

Sr. No.	State/U.T.	Primary Schools	Upper Primary Schools	Secondary Schools	Higher Secondary Schools	Total No. of Schools	Degree Colleges having Classes XI & XII
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andaman Nicobar Islands	192	59	38	33	322	0
2	Andhra Pradesh	55574	12090	11842	1755	81261	14
3	Arunachal Pradesh	1687	749	134	61	2631	0
4	Assam	29562	8414	3547	610	42133	144
5	Bihar	40964	21409	2207	883	65463	233
6	Chandigarh	0	5	3	7	15	0
7	Chhattisgarh	30962	13120	1378	1566	47026	0
8	Dadra Nagar Haveli	178	81	15	5	279	0
9	Daman Diu	33	24	7	6	70	1
10	Delhi	218	19	39	87	363	0
11	Goa	724	45	207	30	1006	1
12	Gujarat	6058	25355	3692	1482	36587	0
13	Haryana	8247	2860	2635	2134	15876	1
14	Himachal Pradesh	10533	2868	1169	1385	15955	4
15	Jammu Kashmir	12911	7615	1517	557	22600	1
16	Jharkhand	23788	12573	1321	191	37873	54
17	Karnataka	23077	21638	6290	1359	52364	7
18	Kerala	5350	2420	1089	1522	10381	0
19	Lakshadweep	13	7	2	7	29	0
20	Madhya Pradesh	75383	30248	3988	2847	112466	0
21	Maharashtra	41679	20204	9731	3269	74883	242
22	Manipur	2093	565	445	76	3179	26
23	Meghalaya	6794	2047	513	68	9422	13
24	Mizoram	984	716	244	21	1965	0
25	Nagaland	1488	456	227	32	2203	8
26	Orissa	33473	17155	7256	428	58312	429
27	Puducherry	166	53	72	36	327	0
28	Punjab	12456	3351	2352	1474	19633	4
29	Rajasthan	42594	30022	9142	3827	85585	0
30	Sikkim	587	202	119	46	954	0
31	Tamil Nadu	25108	7856	2802	2080	37846	0
32	Tripura	2262	1105	404	222	3993	0
33	Uttarakhand	13737	3605	982	1189	19513	0
34	Uttar Pradesh	123913	54425	3773	5024	187135	4
35	West Bengal	42296	1471	3674	2630	50071	0
	India	**675,084**	**304,832**	**82,856**	**36,949**	**1,099,721**	**1,186**

Source: 8th All India School Education Survey (8th AISES) Provisional Statistics (As on 30/09/2009)

Table 4 (PS)
Schools Belonging to Different Categories

Area: Urban

Sr. No.	State/U.T.	Primary Schools	Upper Primary Schools	Secondary Schools	Higher Secondary Schools	Total No. of Schools	Degree Colleges having Classes XI & XII
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andaman Nicobar Islands	15	8	7	20	50	0
2	Andhra Pradesh	8827	3025	5978	1465	19295	34
3	Arunachal Pradesh	121	160	58	50	389	0
4	Assam	1483	540	591	240	2854	122
5	Bihar	2322	1366	493	379	4560	261
6	Chandigarh	21	17	65	66	169	0
7	Chhattisgarh	2410	1777	460	1061	5708	0
8	Dadra Nagar Haveli	3	13	2	5	23	0
9	Daman Diu	18	8	11	5	42	0
10	Delhi	2347	561	437	1259	4604	0
11	Goa	303	23	171	47	544	8
12	Gujarat	787	4989	1526	1669	8971	0
13	Haryana	987	487	815	960	3249	0
14	Himachal Pradesh	257	98	151	234	740	6
15	Jammu Kashmir	897	1036	616	284	2833	0
16	Jharkhand	1054	834	409	160	2457	84
17	Karnataka	3139	7323	4849	1148	16459	15
18	Kerala	1458	657	347	787	3249	0
19	Lakshadweep	8	3	0	6	17	0
20	Madhya Pradesh	6583	8650	1809	2871	19913	0
21	Maharashtra	6230	7037	5070	1808	20145	596
22	Manipur	294	134	209	53	690	15
23	Meghalaya	431	241	180	49	901	35
24	Mizoram	370	412	233	79	1094	0
25	Nagaland	88	69	114	59	330	25
26	Orissa	1979	1213	943	144	4279	199
27	Puducherry	139	64	103	69	375	3
28	Punjab	1594	775	1136	1151	4656	8
29	Rajasthan	2834	6038	2425	2338	13635	0
30	Sikkim	14	5	11	4	34	0
31	Tamil Nadu	8106	2296	1868	3192	15462	0
32	Tripura	111	53	54	99	317	0
33	Uttarakhand	1313	630	129	405	2477	1
34	Uttar Pradesh	20466	10277	1731	3651	36125	4
35	West Bengal	7593	251	1149	1632	10625	0
	India	**84,602**	**61,070**	**34,150**	**27,449**	**207,271**	**1,416**

Source: 8th All India School Education Survey (8th AISES) Provisional Statistics (As on 30/09/2009)

Table 6 (PS)
Primary Schools According to Type of Management

Area: Rural

Sr. No.	State/U.T.	Type of Management			
		Government	Local Body	Private Aided	Private Unaided
(1)	(2)	(3)	(4)	(5)	(6)
1	Andaman Nicobar Islands	167	2	6	17
2	Andhra Pradesh	5527	46253	1345	2449
3	Arunachal Pradesh	1586	14	21	66
4	Assam	27952	914	507	189
5	Bihar	40727	135	72	30
6	Chandigarh	0	0	0	0
7	Chhattisgarh	29652	146	310	854
8	Dadra Nagar Haveli	169	0	5	4
9	Daman Diu	30	0	0	3
10	Delhi	87	90	1	40
11	Goa	668	1	17	38
12	Gujarat	957	4726	49	326
13	Haryana	7869	9	16	353
14	Himachal Pradesh	10206	51	13	263
15	Jammu Kashmir	11913	141	106	751
16	Jharkhand	22701	140	926	21
17	Karnataka	21422	79	150	1426
18	Kerala	2197	55	2918	180
19	Lakshadweep	13	0	0	0
20	Madhya Pradesh	71635	448	591	2709
21	Maharashtra	2510	37634	786	749
22	Manipur	1767	9	256	61
23	Meghalaya	3593	318	2749	134
24	Mizoram	745	75	121	43
25	Nagaland	1367	16	9	96
26	Orissa	32681	140	233	419
27	Puducherry	138	0	2	26
28	Punjab	9501	2644	26	285
29	Rajasthan	17449	22739	211	2195
30	Sikkim	464	9	16	98
31	Tamil Nadu	11970	7705	3221	2212
32	Tripura	2216	16	9	21
33	Uttarakhand	11891	53	125	1668
34	Uttar Pradesh	94237	4799	2926	21951
35	West Bengal	40845	1311	138	2
	India	**486,852**	**130,672**	**17,881**	**39,679**

Source: 8th All India School Education Survey (8th AISES) Provisional Statistics (As on 30/09/2009)

Table 7 (PS)
Primary Schools According to Type of Management

Area: Urban

Sr. No.	State/U.T.	Type of Management			
		Government	Local Body	Private Aided	Private Unaided
(1)	(2)	(3)	(4)	(5)	(6)
1	Andaman Nicobar Islands	9	0	0	6
2	Andhra Pradesh	1426	3200	782	3419
3	Arunachal Pradesh	72	9	9	31
4	Assam	1364	90	12	17
5	Bihar	2285	22	14	1
6	Chandigarh	14	0	0	7
7	Chhattisgarh	1833	41	97	439
8	Dadra Nagar Haveli	1	0	0	2
9	Daman Diu	13	0	1	4
10	Delhi	518	1096	55	678
11	Goa	204	0	28	71
12	Gujarat	104	395	47	241
13	Haryana	710	9	38	230
14	Himachal Pradesh	219	4	1	33
15	Jammu Kashmir	705	8	5	179
16	Jharkhand	993	6	49	6
17	Karnataka	1831	48	154	1106
18	Kerala	413	18	942	85
19	Lakshadweep	8	0	0	0
20	Madhya Pradesh	3900	216	332	2135
21	Maharashtra	326	2097	2272	1535
22	Manipur	231	0	51	12
23	Meghalaya	171	5	240	15
24	Mizoram	305	16	20	29
25	Nagaland	79	0	1	8
26	Orissa	1760	35	50	134
27	Puducherry	109	0	4	26
28	Punjab	945	182	94	373
29	Rajasthan	1837	171	133	693
30	Sikkim	0	0	0	14
31	Tamil Nadu	2033	1216	1875	2982
32	Tripura	86	3	5	17
33	Uttarakhand	469	24	44	776
34	Uttar Pradesh	5501	710	1044	13211
35	West Bengal	6908	472	204	9
	India	**37,382**	**10,093**	**8,603**	**28,524**

Source: 8th All India School Education Survey (8th AISES) Provisional Statistics (As on 30/09/2009)

Table 21 (PS)
Primary Schools According to Type of Building in Which Majority of Classes are held
Area: Rural

Sr. No.	State/U.T.	Type of School Building					
		Pucca	Partly Pucca	Kuchcha	Tent	Open Space	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andaman Nicobar Islands	132	34	26	0	0	192
2	Andhra Pradesh	52228	1967	811	59	509	55574
3	Arunachal Pradesh	798	649	233	4	3	1687
4	Assam	20646	7083	1696	102	35	29562
5	Bihar	31832	1849	969	210	6104	40964
6	Chandigarh	0	0	0	0	0	0
7	Chhattisgarh	24381	4546	1485	138	412	30962
8	Dadra Nagar Haveli	139	28	11	0	0	178
9	Daman Diu	32	1	0		0	33
10	Delhi	192	24	0	2	0	218
11	Goa	714	8	2	0	0	724
12	Gujarat	4772	1108	58	11	109	6058
13	Haryana	8196	39	0	5	7	8247
14	Himachal Pradesh	8378	1673	448	0	34	10533
15	Jammu Kashmir	6992	3019	2271	138	491	12911
16	Jharkhand	22673	365	449	55	246	23788
17	Karnataka	21422	1275	259	44	77	23077
18	Kerala	4963	369	17	1	0	5350
19	Lakshadweep	13	0	0	0	0	13
20	Madhya Pradesh	69698	4117	845	47	676	75383
21	Maharashtra	38619	1640	840	261	319	41679
22	Manipur	362	909	817	4	1	2093
23	Meghalaya	2682	3643	437	21	11	6794
24	Mizoram	488	361	134	1	0	984
25	Nagaland	503	831	148	4	2	1488
26	Orissa	28723	2855	1048	68	779	33473
27	Puducherry	154	12	0	0	0	166
28	Punjab	12296	123	7	1	29	12456
29	Rajasthan	41237	677	203	18	459	42594
30	Sikkim	372	160	55	0	0	587
31	Tamil Nadu	21655	3109	308	30	6	25108
32	Tripura	1751	303	148	13	47	2262
33	Uttarakhand	12683	831	113	3	107	13737
34	Uttar Pradesh	117704	5662	312	89	146	123913
35	West Bengal	38019	3949	270	17	41	42296
	India	**595,449**	**53,219**	**14,420**	**1,346**	**10,650**	**675,084**

Source: 8th All India School Education Survey (8th AISES) Provisional Statistics (As on 30/09/2009)

Table 22 (PS)
Primary Schools According to Type of Building in Which Majority of Classes are held
Area: Urban

Sr. No.	State/U.T.	Type of School Building					
		Pucca	Partly Pucca	Kuchcha	Tent	Open Space	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andaman Nicobar Islands	12	2	0	1	0	15
2	Andhra Pradesh	8055	574	134	15	49	8827
3	Arunachal Pradesh	62	55	4	0	0	121
4	Assam	1151	311	20	0	1	1483
5	Bihar	1670	209	69	12	362	2322
6	Chandigarh	21	0	0	0	0	21
7	Chhattisgarh	1984	378	38	3	7	2410
8	Dadra Nagar Haveli	3	0	0	0	0	3
9	Daman Diu	18	0	0	0	0	18
10	Delhi	2049	260	7	24	7	2347
11	Goa	298	3	2	0	0	303
12	Gujarat	725	55	3	0	4	787
13	Haryana	962	17	2	0	6	987
14	Himachal Pradesh	221	31	5	0	0	257
15	Jammu Kashmir	687	134	41	14	21	897
16	Jharkhand	891	68	41	14	40	1054
17	Karnataka	2786	243	77	13	20	3139
18	Kerala	1345	108	4	1	0	1458
19	Lakshadweep	8	0	0	0	0	8
20	Madhya Pradesh	5934	575	38	6	30	6583
21	Maharashtra	5717	324	164	16	9	6230
22	Manipur	88	167	38	0	1	294
23	Meghalaya	259	160	11	1	0	431
24	Mizoram	255	102	13	0	0	370
25	Nagaland	39	40	7	2	0	88
26	Orissa	1756	190	17	1	15	1979
27	Puducherry	135	4	0	0	0	139
28	Punjab	1537	31	7	4	15	1594
29	Rajasthan	2568	139	13	3	111	2834
30	Sikkim	14	0	0	0	0	14
31	Tamil Nadu	6972	1002	110	17	5	8106
32	Tripura	77	26	6	1	1	111
33	Uttarakhand	1255	52	2	2	2	1313
34	Uttar Pradesh	18890	1312	78	37	149	20466
35	West Bengal	6906	627	42	10	8	7593
	India	**75,350**	**7,199**	**993**	**197**	**863**	**84,602**

Source: 8th All India School Education Survey (8th AISES) Provisional Statistics (As on 30/09/2009)

Table 33 (PS)
Primary Schools According to Availability of Facilities Within School Premises

Area: Rural

Sr. No.	State/U.T.	Availability Within School Premises		
		Drinking	Usable Urinal	Playground
(1)	(2)	(3)	(4)	(5)
1	Andaman Nicobar Islands	152	128	96
2	Andhra Pradesh	37309	34025	25848
3	Arunachal Pradesh	819	570	509
4	Assam	22712	19681	12925
5	Bihar	30714	12880	12965
6	Chandigarh	0	0	0
7	Chhattisgarh	23486	17810	9650
8	Dadra Nagar Haveli	123	58	25
9	Daman Diu	32	30	14
10	Delhi	218	217	196
11	Goa	667	507	321
12	Gujarat	5040	5401	3969
13	Haryana	7806	7371	6600
14	Himachal Pradesh	9614	6528	6378
15	Jammu Kashmir	4764	2670	2641
16	Jharkhand	18235	13568	6095
17	Karnataka	16998	18461	10830
18	Kerala	5226	5239	3419
19	Lakshadweep	13	13	2
20	Madhya Pradesh	56981	50135	36920
21	Maharashtra	33480	37261	21051
22	Manipur	1238	775	868
23	Meghalaya	2821	2784	2071
24	Mizoram	764	680	145
25	Nagaland	913	1158	532
26	Orissa	24652	22020	6200
27	Puducherry	164	151	89
28	Punjab	12235	11955	8446
29	Rajasthan	33319	35910	13708
30	Sikkim	511	497	351
31	Tamil Nadu	23174	21021	18312
32	Tripura	1039	1296	1305
33	Uttarakhand	10059	4590	6816
34	Uttar Pradesh	114569	92776	80044
35	West Bengal	37777	38499	15076
	India	**537,624**	**466,665**	**314,417**

Source: 8th All India School Education Survey (8th AISES) Provisional Statistics (As on 30/09/2009)

Table 34 (PS)
Primary Schools According to Availability of Facilities Within School Premises

Area: Urban

Sr. No.	State/U.T.	Availability Within School Premises		
		Drinking	Usable Urinal	Playground
(1)	(2)	(3)	(4)	(5)
1	Andaman Nicobar Islands	14	15	8
2	Andhra Pradesh	6951	6266	5246
3	Arunachal Pradesh	82	81	45
4	Assam	1289	1249	470
5	Bihar	1540	742	521
6	Chandigarh	21	20	18
7	Chhattisgarh	2006	1441	1112
8	Dadra Nagar Haveli	3	3	1
9	Daman Diu	18	14	12
10	Delhi	2283	2311	1853
11	Goa	287	232	139
12	Gujarat	751	725	569
13	Haryana	953	893	602
14	Himachal Pradesh	241	206	151
15	Jammu Kashmir	647	418	260
16	Jharkhand	684	571	239
17	Karnataka	2595	2361	1750
18	Kerala	1405	1409	860
19	Lakshadweep	8	5	1
20	Madhya Pradesh	5488	5187	4057
21	Maharashtra	5872	5341	4330
22	Manipur	212	134	150
23	Meghalaya	304	303	172
24	Mizoram	349	337	96
25	Nagaland	55	77	27
26	Orissa	1355	976	469
27	Puducherry	139	127	59
28	Punjab	1573	1522	832
29	Rajasthan	2280	2199	1005
30	Sikkim	14	14	6
31	Tamil Nadu	7636	7419	6067
32	Tripura	92	82	47
33	Uttarakhand	1233	920	770
34	Uttar Pradesh	18635	17564	12522
35	West Bengal	6307	6471	1936
	India	**73,322**	**67,635**	**46,402**

Source: 8th All India School Education Survey (8th AISES) Provisional Statistics (As on 30/09/2009)

Table 48 (PS)
Class-wise Enrolment in Classes I To V

Area: Rural

Sr. No.	State/U.T.	Enrolment in Classes								
		I			II			III		
		B	G	T	B	G	T	B	G	T
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Andaman Nicobar Islands	2163	2065	4228	2085	1963	4048	2091	2041	4132
2	Andhra Pradesh	558085	540228	1098313	480903	477268	958171	471083	467679	938762
3	Arunachal Pradesh	23412	21262	44674	18174	16273	34447	16131	14679	30810
4	Assam	341859	333590	675449	282068	277551	559619	254896	253455	508351
5	Bihar	1780830	1671065	3451895	1599825	1514570	3114395	1547705	1445639	2993344
6	Chandigarh	642	618	1260	669	596	1265	752	679	1431
7	Chhattisgarh	288516	277597	566113	264440	251810	516250	260472	247334	507806
8	Dadra Nagar Haveli	3077	2784	5861	3014	3009	6023	3205	2951	6156
9	Daman Diu	1093	1054	2147	980	921	1901	959	823	1782
10	Delhi	12336	11042	23378	12767	11999	24766	12650	10887	23537
11	Goa	5282	4778	10060	5152	4797	9949	4948	4595	9543
12	Gujarat	440949	388723	829672	412537	365486	778023	414991	366122	781113
13	Haryana	213557	187412	400969	210933	182422	393355	209911	179186	389097
14	Himachal Pradesh	55469	51501	106970	53447	50311	103758	53866	50471	104337
15	Jammu Kashmir	110518	99701	210219	96215	86870	183085	92780	85022	177802
16	Jharkhand	540989	527969	1068958	411198	404902	816100	391362	386455	777817
17	Karnataka	350222	325376	675598	351450	330634	682084	359557	338315	697872
18	Kerala	164098	159056	323154	174952	166923	341875	183534	174954	358488
19	Lakshadweep	360	338	698	388	388	776	410	357	767
20	Madhya Pradesh	861132	824026	1685158	751467	760888	1512355	737708	745850	1483558
21	Maharashtra	672917	607066	1279983	643490	576981	1220471	632800	563433	1196233
22	Manipur	39790	39631	79421	31911	31326	63237	25171	24396	49567
23	Meghalaya	56257	54462	110719	39946	39038	78984	33763	33889	67652
24	Mizoram	13187	11769	24956	8564	7488	16052	7672	6940	14612
25	Nagaland	21088	20120	41208	19351	18558	37909	17665	16755	34420
26	Orissa	420571	392506	813077	394376	372597	766973	382002	367718	749720
27	Puducherry	4662	4335	8997	4705	4274	8979	4665	4219	8884
28	Punjab	152087	130288	282375	145180	123370	268550	146478	122495	268973
29	Rajasthan	897283	785870	1683153	723904	646976	1370880	650097	576462	1226559
30	Sikkim	7652	7285	14937	7300	6935	14235	7929	7540	15469
31	Tamil Nadu	298149	286649	584798	296718	286877	583595	310367	297565	607932
32	Tripura	37808	36308	74116	32797	31424	64221	35615	33317	68932
33	Uttarakhand	95938	87970	183908	84054	78129	162183	82669	79579	162248
34	Uttar Pradesh	2303324	2079721	4383045	2152470	1984417	4136887	2136016	2032590	4168606
35	West Bengal	781400	746989	1528389	616930	602520	1219450	596990	590305	1187295
	India	**11,556,702**	**10,721,154**	**22,277,856**	**10,334,360**	**9,720,491**	**20,054,851**	**10,088,910**	**9,534,697**	**19,623,607**

(contd.)

Table 48 (PS) *(Concld.)*
Class-wise Enrolment in Classes I To V

Sr. No.	State/U.T.	Enrolment in Classes								
		IV			V			I to V		
		B	G	T	B	G	T	B	G	T
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1	Andaman Nicobar Islands	2175	2055	4230	2150	2151	4301	10664	10275	20939
2	Andhra Pradesh	460050	458577	918627	459696	457553	917249	2429817	2401305	4831122
3	Arunachal Pradesh	13894	12821	26715	12467	11108	23575	84078	76143	160221
4	Assam	236660	238623	475283	229937	232349	462286	1345420	1335568	2680988
5	Bihar	1288401	1156335	2444736	1078188	917265	1995453	7294949	6704874	13999823
6	Chandigarh	802	698	1500	744	684	1428	3609	3275	6884
7	Chhattisgarh	257981	250089	508070	233733	226406	460139	1305142	1253236	2558378
8	Dadra Nagar Haveli	2988	2834	5822	2932	2758	5690	15216	14336	29552
9	Daman Diu	818	782	1600	1020	878	1898	4870	4458	9328
10	Delhi	12209	10645	22854	11636	9806	21442	61598	54379	115977
11	Goa	5467	5016	10483	5476	4649	10125	26325	23835	50160
12	Gujarat	408316	361699	770015	399408	358551	757959	2076201	1840581	3916782
13	Haryana	204370	172269	376639	181354	151276	332630	1020125	872565	1892690
14	Himachal Pradesh	56611	51194	107805	58291	53042	111333	277684	256519	534203
15	Jammu Kashmir	93858	85844	179702	96384	87018	183402	489755	444455	934210
16	Jharkhand	370269	364849	735118	339934	324550	664484	2053752	2008725	4062477
17	Karnataka	353608	331955	685563	353004	332984	685988	1767841	1659264	3427105
18	Kerala	193273	184655	377928	199947	186175	386122	915804	871763	1787567
19	Lakshadweep	420	458	878	518	598	1116	2096	2139	4235
20	Madhya Pradesh	690102	715122	1405224	637779	655849	1293628	3678188	3701735	7379923
21	Maharashtra	620791	559198	1179989	586022	523514	1109536	3156020	2830192	5986212
22	Manipur	23025	22316	45341	21780	20883	42663	141677	138552	280229
23	Meghalaya	27300	28235	55535	24101	25970	50071	181367	181594	362961
24	Mizoram	6308	5563	11871	5585	4758	10343	41316	36518	77834
25	Nagaland	14731	14223	28954	11739	11644	21383	84574	81300	165874
26	Orissa	361193	344752	705945	353456	336559	690015	1911598	1814132	3725730
27	Puducherry	4298	4193	8491	4748	4462	9210	23078	21483	44561
28	Punjab	147502	122491	269993	144568	120764	265332	735815	619408	1355223
29	Rajasthan	578652	500053	1078705	559598	471616	1031214	3409534	2980977	6390511
30	Sikkim	7813	7927	15740	6133	6724	12857	36827	36411	73238
31	Tamil Nadu	322361	305462	627823	337650	319643	657293	1565245	1496196	3061441
32	Tripura	33750	31462	65212	35059	32850	67909	175029	165361	340390
33	Uttarakhand	82370	79233	161603	78655	75256	153911	423686	400167	823853
34	Uttar Pradesh	1939232	1929989	3869221	1750047	1733904	3483951	10281089	9760621	20041710
35	West Bengal	601805	603448	1205253	651013	668652	1319665	3248138	3211914	6460052
	India	**9,423,403**	**8,965,065**	**18,388,468**	**8,874,752**	**8,372,849**	**17,245,601**	**50,278,127**	**47,314,256**	**97,592,383**

Note: B-Boys; G-Girls; T-Total; PS: Primary Source.
Source: 8th All India School Education Survey (8th AISES) Provisional Statistics (As on 30/09/2009)

Table 49 (PS)
Class-wise Enrolment in Classes I To V

Area: Urban

Sr. No.	State/U.T.	Enrolment in Classes								
		I			II			III		
		B	G	T	B	G	T	B	G	T
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Andaman Nicobar Islands	1352	1273	2625	1303	1260	2563	1339	1262	2601
2	Andhra Pradesh	238886	218296	457182	231218	212607	443825	232801	214678	447479
3	Arunachal Pradesh	6060	5771	11831	5729	5327	11056	5757	5067	10824
4	Assam	30369	29535	59904	28960	28134	57094	27945	27156	55101
5	Bihar	84913	83831	168744	86960	89149	176109	89191	93656	182847
6	Chandigarh	7985	7090	15075	9373	7805	17178	9962	8259	18221
7	Chhattisgarh	62813	57691	120504	57627	53607	111234	56533	52478	109011
8	Dadra Nagar Haveli	1173	979	2152	1189	1008	2197	1141	916	2057
9	Daman Diu	1026	853	1879	970	769	1739	1013	753	1766
10	Delhi	174635	153170	327805	174860	159339	334199	176803	150632	327435
11	Goa	833	7550	15887	7888	7277	15165	7576	7213	14789
12	Gujarat	183038	151691	334729	171783	143334	315117	171468	140079	311547
13	Haryana	75721	62348	138069	71427	59084	130511	70236	56205	126441
14	Himachal Pradesh	8500	6672	15172	7951	6400	14351	8221	6459	14680
15	Jammu Kashmir	23528	20436	43964	21946	18883	40829	21399	18475	39874
16	Jharkhand	48809	47245	96054	43889	42577	86466	43783	42890	86673
17	Karnataka	217068	201552	418620	208805	194664	403469	209275	195567	404842
18	Kerala	58831	58220	117051	61339	60038	121377	64222	62768	126990
19	Lakshadweep	239	216	455	238	242	480	274	262	536
20	Madhya Pradesh	243637	211085	454722	223263	198037	421300	219924	192553	412477
21	Maharashtra	500367	438317	938684	476986	417852	894838	476334	411384	887718
22	Manipur	10152	10436	20588	7939	7999	15938	7242	7134	14376
23	Meghalaya	7453	7372	14825	7102	7215	14317	6895	7369	14264
24	Mizoram	7468	7129	14597	6323	6103	12426	6166	5950	12116
25	Nagaland	6939	6363	13302	6871	6100	12971	6779	6299	13078
26	Orissa	55050	50029	105079	52094	47149	99243	50076	46225	96301
27	Puducherry	6628	6579	13207	7075	6608	13683	7041	6478	13519
28	Punjab	91746	74576	166322	84502	66512	151014	83647	66442	150089
29	Rajasthan	207289	168089	375378	157743	131631	289374	149177	121435	270612
30	Sikkim	542	447	989	511	470	981	534	496	1030
31	Tamil Nadu	282222	262672	544894	272219	254658	526877	275544	257493	533037
32	Tripura	5830	5510	11340	5749	5447	11196	5908	5511	11419
33	Uttarakhand	33037	27069	60106	30303	25171	55474	29645	24545	54190
34	Uttar Pradesh	589119	486831	1075950	540904	450500	991404	512206	429982	942188
35	West Bengal	160351	157717	318068	143790	141571	285361	145332	144305	289637
	India	**3,441,113**	**3,034,640**	**6,475,753**	**3,216,829**	**2,864,527**	**6,081,356**	**3,181,389**	**2,818,376**	**5,999,765**

(contd.)

Table 49 (PS) *(Concld.)*
Class-wise Enrolment in Classes I To V

Sr. No.	State/U.T.	Enrolment in Classes								
		IV			V			I to V		
		B	G	T	B	G	T	B	G	T
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1	Andaman Nicobar Islands	1449	1298	2747	1377	1307	2684	6820	6400	13220
2	Andhra Pradesh	231351	215091	446442	231540	220212	451752	1165796	1080884	2246680
3	Arunachal Pradesh	5348	5123	10471	5161	5042	10203	28055	26330	54385
4	Assam	27076	26613	53689	33322	33830	67152	147672	145268	292940
5	Bihar	79962	82334	162296	73258	74785	148043	414284	423755	838039
6	Chandigarh	9836	7650	17486	9482	7613	17095	46638	38417	85055
7	Chhattisgarh	57656	53150	110806	54398	51032	105430	289027	267958	556985
8	Dadra Nagar Haveli	1107	893	2000	1148	919	2067	5758	4715	10473
9	Daman Diu	965	710	1675	960	722	1682	4934	3807	8741
10	Delhi	174814	146258	321072	166951	139097	306048	868063	748496	1616559
11	Goa	8079	7276	15355	8454	7269	15723	40334	36585	76919
12	Gujarat	170691	138316	309007	173060	138435	311495	870040	711855	1581895
13	Haryana	68434	54619	123053	66715	52391	119106	352533	284647	637180
14	Himachal Pradesh	8315	6560	14875	8397	6446	14843	41384	32537	73921
15	Jammu Kashmir	21530	18695	40225	21584	18656	40240	109987	95145	205132
16	Jharkhand	43384	42873	86257	41861	40898	82759	221726	216483	438209
17	Karnataka	208896	195958	404854	205216	193305	398521	1049260	981046	2030306
18	Kerala	66926	65939	132865	73975	74364	148339	325293	321329	646622
19	Lakshadweep	253	241	494	357	362	719	1361	1323	2684
20	Madhya Pradesh	214777	188987	403764	209582	183192	392774	1111183	973854	2085037
21	Maharashtra	472037	409292	881329	491337	422993	914330	2417061	2099838	4516899
22	Manipur	7336	7144	14480	7366	7113	14479	40035	39826	79861
23	Meghalaya	7050	7193	14243	8003	8526	16529	36503	37675	74178
24	Mizoram	5809	5554	11363	5906	5550	11456	31672	30286	61958
25	Nagaland	6757	6284	13041	6872	6388	13260	34218	31434	65652
26	Orissa	49127	46037	95164	49755	46578	96333	256102	236018	492120
27	Puducherry	7048	6876	13924	7630	7376	15006	35422	33917	69339
28	Punjab	84315	64440	148755	83184	66088	149272	427394	338058	765452
29	Rajasthan	138759	113872	252631	139709	110653	250362	792677	645680	1438357
30	Sikkim	572	557	1129	507	540	1047	2666	2510	5176
31	Tamil Nadu	280610	263286	543896	288426	271443	559869	1399021	1309552	2708573
32	Tripura	5634	5421	11055	6104	5806	11910	29225	27695	56920
33	Uttarakhand	28444	23749	52193	27648	23144	50792	149077	123678	272755
34	Uttar Pradesh	463274	390984	854258	432248	366745	798993	2537751	2125042	4662793
35	West Bengal	148105	148881	296986	206006	201794	407800	803584	794268	1597852
	India	**3,105,726**	**2,758,154**	**5,863,880**	**3,147,499**	**2,800,614**	**5,948,113**	**16,092,556**	**14,276,311**	**30,368,867**

Source: 8th All India School Education Survey (8th AISES)

Table 60 (PS)
Teachers in Position in Primary Schools

Area: Rural

Sr. No.	State/U.T.	Full-time Teachers			Para/Contract Teachers		
		Male	Female	Total	Male	Female	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andaman Nicobar Islands	348	430	778	5	37	42
2	Andhra Pradesh	73299	48181	121480	11724	11758	23482
3	Arunachal Pradesh	1510	617	2127	1418	671	2089
4	Assam	47363	21725	69088	1307	1013	2320
5	Bihar	56812	36361	93173	26989	24432	51421
6	Chandigarh	0	0	0	0	0	0
7	Chhattisgarh	23476	8046	31522	37630	21126	58756
8	Dadra Nagar Haveli	146	75	221	57	87	144
9	Daman Diu	43	100	143	3	21	24
10	Delhi	970	1271	2241	70	93	163
11	Goa	231	1146	1377	30	160	190
12	Gujarat	8556	6643	15199	195	319	514
13	Haryana	15117	11000	26117	3452	2457	5909
14	Himachal Pradesh	12302	9346	21648	3267	1858	5125
15	Jammu Kashmir	12602	7860	20462	6728	3376	10104
16	Jharkhand	9612	3421	13033	27261	9385	36646
17	Karnataka	29548	22386	51934	1398	2477	3875
18	Kerala	7651	24361	32012	150	456	606
19	Lakshadweep	80	56	136	4	17	21
20	Madhya Pradesh	114472	46534	161006	9599	5100	14699
21	Maharashtra	54491	30468	84959	13148	5931	19079
22	Manipur	3973	2571	6544	164	92	256
23	Meghalaya	7396	7434	14830	535	1208	1743
24	Mizoram	1382	826	2208	1111	666	1777
25	Nagaland	4152	2594	6746	405	357	762
26	Orissa	32681	17010	49691	17398	10962	28360
27	Puducherry	271	565	836	32	69	101
28	Punjab	11641	17874	29515	3658	5292	8950
29	Rajasthan	56094	22612	78706	8901	2829	11730
30	Sikkim	1638	1279	2917	83	170	253
31	Tamil Nadu	20011	57185	77196	583	3861	4444
32	Tripura	4501	1191	5692	1859	654	2513
33	Uttarakhand	12465	14141	26606	2715	2719	5434
34	Uttar Pradesh	188199	102305	290504	76294	94723	171017
35	West Bengal	91293	25848	117141	8857	8555	17412
	India	**904,326**	**553,462**	**1,457,788**	**267,030**	**222,931**	**489,961**

Source: 8th All India School Education Survey (8th AISES)

Table 61 (PS)
Teachers in Position in Primary Schools

Area: Urban

Sr. No.	State/U.T.	Full-time Teachers			Para/Contract Teachers		
		Male	Female	Total	Male	Female	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andaman Nicobar Islands	34	105	139	1	10	11
2	Andhra Pradesh	13890	32583	46473	2523	6225	8748
3	Arunachal Pradesh	226	444	670	105	229	334
4	Assam	2534	6238	8772	58	130	188
5	Bihar	3098	3841	6939	650	1205	1855
6	Chandigarh	21	171	192	15	60	75
7	Chhattisgarh	2743	4217	6960	1018	1778	2796
8	Dadra Nagar Haveli	1	5	6	1	12	13
9	Daman Diu	15	86	101	0	22	22
10	Delhi	6809	16262	23071	651	1610	2261
11	Goa	82	1227	1309	21	161	182
12	Gujarat	1183	3239	4422	78	234	312
13	Haryana	1002	3606	4608	180	621	801
14	Himachal Pradesh	156	841	997	13	93	106
15	Jammu Kashmir	666	2063	2729	212	346	558
16	Jharkhand	495	993	1488	538	758	1296
17	Karnataka	3240	8434	11674	559	1350	1909
18	Kerala	1811	7292	9103	24	130	154
19	Lakshadweep	45	44	89	5	7	12
20	Madhya Pradesh	11020	19643	30663	564	1260	1824
21	Maharashtra	11549	28910	40459	1099	1932	3031
22	Manipur	443	666	1109	19	22	41
23	Meghalaya	401	1364	1765	34	198	232
24	Mizoram	592	1324	1916	196	392	588
25	Nagaland	251	614	865	18	33	51
26	Orissa	1587	4890	6477	278	980	1258
27	Puducherry	258	673	931	3	33	36
28	Punjab	1007	4954	5961	197	981	1178
29	Rajasthan	3645	5773	9418	315	481	796
30	Sikkim	21	89	110	1	7	8
31	Tamil Nadu	4635	44374	49009	573	6743	7316
32	Tripura	307	320	627	86	64	150
33	Uttarakhand	1234	4337	5571	235	695	930
34	Uttar Pradesh	34045	45062	79107	6427	11508	17935
35	West Bengal	12053	13729	25782	987	1568	2555
	India	**121,099**	**268,413**	**389,512**	**17,684**	**41,878**	**59,562**

Source: 8th All India School Education Survey (8th AISES)

PROFESSOR KUMUDINI DANDEKAR: A TRIBUTE

Dr. Sanjeevanee Mulay*

Professor Kumudini Dandekar was a well-known researcher in the field of 'Population Studies', or 'Demography'.

She was born in 1920 in a school-teacher's family with moderate means but with progressive values. Krishnabai Mote and Malatibai Bedekar, well-known writers were her elder sisters. She had her school and college education in Pune. She ranked second in Pune for her matriculation, thus proving her academic excellence. She did her graduation with 'Mathematics' as the principal subject. For her post-graduate studies she joined Indian Statistical Institute at Calcutta. She returned with an M.Stat. degree and also her life-partner - Professor V.M. Dandekar, the renowned economist. They got married and joined the Gokhale Institute of Politics and Economics and devoted their lives to their research-fields.

It is always said that Prof. D.R. Gadgil was a pioneer so far as the methodology for economic field- surveys and data analysis. It will not be wrong if we say that Mrs. Dandekar was the one who developed the survey methodology for Demographic Surveys. She imbibed the basic principles of research methodology followed in the Institute: To go to the root of the problem; to form rational and specific objectives; to collect quality-data; have an appropriate analysis; and come up with clearly framed conclusions. Most important was to put forth the results in a straight-forward manner. There used to be no botheration about the probable reaction. Even in case of government sponsored projects, she never hesitated to criticise the functioning of the government schemes, whenever she found so. She used to be very particular about the quality of data. No compromises were allowed. As far as the data analysis is concerned, sometimes even simple cross-tables also could be adequate for her. She never went for advanced statistical methods.

Whenever I come across the excessive use of statistical techniques, without understanding them, I always get reminded of Mrs. Dandekar's simple but appropriate methods of data analysis.

In 1949, Rockfeller Foundation provided a grant to Gokhale Institute for carrying out demographic research. This is when the 'Demography Section' at the institute started functioning as a separate centre. It was one of the first few demographic research centres in India.

This grant was used to conduct demographic surveys in 12 districts of Maharashtra. The emphasis was on the attitudes towards family planning. This study decided the direction of Mrs. Dandekar's research career. Those were the days, when the concepts of fertility control and family planning had just started emerging and at the same time there was no information about the acceptability of these ideas. The government was yet to adopt the family planning programme. In short, Mrs. Dandekar started working in this field right from the inception of the programme. As could be seen later, Mrs. Dandekar mainly worked on different aspects of family planning and fertility control. KAP (knowledge, Attitude and Practice) studies were carried out in the sixties. However, Mrs. Dandekar's research was prior to these studies. People's attitude towards family planning, the reasons for opposition to it, if any, the approaches followed in providing the services, the limitations in the programme, the side-effects of the family planning methods, and the effect of family planning on the birth-rate were the different aspects which she studied. She approached these various subjects in an innovative manner, considering this task as a challenge.

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The studies under the Rockfeller grant led her to two important conclusions; first, people had no opposition to family planning and second, they wanted minimum four children before undergoing sterilisation. In those days, vasectomy (Men's sterilisation) was almost the only method offered. Greatly enthused by the results, Mrs. Dandekar thought of holding a 'Sterilisation Camp'. It was arranged at Pusegaon, in Satara District. Twenty-two men got sterilised. It is to be noted that this was the first sterilisation Camp in India. An academic Institute holding sterilisation camp was a rare event.

Initially, doubts used to be raised regarding the side-effects of Vasectomy, which could affect the acceptability. Mrs. Dandekar took the challenge of collecting the data on the medical side-effects and effects on the sexual satisfaction. One could imagine how daring it was, to approach the people with such question sixty years ago. For examining the medical side-effects, she got 1200 vasectomised men's semen clinically examined. She also carried out a field-survey to know about the sexual satisfaction. The results of both the exercises were encouraging. There was no medical effect on the semen and there was no effect on sexual satisfaction. The study turned out to be very important. The government took notice of the same and the vasectomy programme was chalked out.

With a view to raising the acceptability of family planning, Mrs. Dandekar turned to a different approach. She, with the help of the Institute, ran a clinic at Manchar for six years. The objective was to advise the patients coming to the clinic about the use of family planning methods. This again was an off-beat path to move forward.

During those days, she worked on many other projects including Demographic Surveys in Pune, Nasik, Satara and Kolaba districts, a survey in six rural communities, etc. In 1959, her article on 'Birth-Intervals' was published in 'Engeniecs Quarterly' a prestigious journal. A little later, she carried out a study on 'Sterilisation Programme and its effect on Birth-rate. It was appreciated even at international level. Probably, this was the first attempt to quantify the effect of the family planning programme.

Lately in seventies, a number of evaluations of the government schemes were done under the guidance of Mrs. Dandekar. Evaluations used to be factual and honest. Besides family planning, she also worked a number of other very important subjects such as the Employment Guarantee Scheme, Age at Marriage, Status of Women, Household size and composition, etc.

During her entire career, she participated in several national and international conferences. Those days, a foreign visit was not so common and hence this mention. The valuable work carried out by her led to getting offers from various Institutions, such as IAMR (Institute of Applied Manpower Research), Delhi, and the International Institute of Population Sciences, Mumbai, both of which had offered her Directorship. She declined due to some unavoidable reasons.

This is how Mrs. Dandekar lived her academic life. Because of the over-powering personality of Professor V.M. Dandekar, she used to get sidelined. But in the Demographic world hardly anybody equaled her pioneering work.

Mrs. Dandekar was invited to be an Honorary Fellow of the Indian School of Political Economy in 1997 and made an Emeritus Fellow of the School in 2011.

She pased away on 11th of October 2016, at the age of 96.

DHANAGARE: THE SOCIOLOGIST WHO DISSECTED 'DEVELOPMENT'

Shruti Tambe

Traveling in a red bus with his M.A. students Dhanagare narrated his career trajectory in a simple and straightforward manner in the late 1980s. We were a bunch of students of 'Agrarian Structure of Change' doing M.A. sociology at the then University of Poona. A passionate teacher and a committed researcher-he always gave the first priority to his writing and his students.

Prof. Dhanagare hailed from Washim from Vidarbha region-now notorious for farmers' suicides. Academically he travelled to Nagpur via Amravati and to Sussex University, U.K. via University of Massachusetts, Amherst, U.S.A. His profession took him to Agra University, IIT, Kanpur and then to university of Pune-where he served for more than two decades before joining the ICSSR as Member Secretary and then assuming Vice Chancellorship at Shivaji University, Kolhapur.

Dhanagare was known for his insightful research on Peasant Movements in India-1920 to 1940, which combined historical insights with economic conceptualization in the Sociological discourse of Movement studies. Yet, he refused to get caught in the functionalist the then popular 'rural sociology' brand. Instead he chose to analyse the classes in Indian agrarian society, which is even today not a fashionable stance.

Institutional protocols:

We have influential educationists across India, who created very important educational institutions with thrift, sacrifice and commitment. Yet, we observe rampant decline in institutional standards across the educational sector. Rarely does one come across stalwarts like Dhanagare, who fought to establish standards of educational integrity in personal and institutional careers. His stints at Shivaji University as Vice Chancellor and at the Indian Council of Social Science Research as Member Secretary are great examples of this. Ironically enough the [powers that be were not pleased at all and he had to face the ire of educational lords and unions of non-teaching staff at Kolhapur. He was an internationally acclaimed scholar and he invested his credibility to increase the repute of a State University in the hinterlands of Maharashtra. After retirement he wrote on influence of market forces on higher education regularly and put forth a scathing critique of privatization of higher education and the malpractices associated with it. In a period when state run institutes are defamed and destroyed by the market forces consistently, his was a lone struggle to demand answerability and transparency in the educational service provision.

Dissecting Development, aligning with people's struggles:

For his generation, development was a dream comprising of 'catching up' with the West in the post 1960 period. With Marxist methodological training and a critical perspective to analyse ground reality in India, he however, chose to present alternative accounts of the 'development' story from the perspective of the landless labourers, peasants and recently through the case of the Shetkari Sanghatana in Maharashtra. He was not a Bhakta of any ideological stand, but he was an early admirer and analyst of environmental movements in India, feminist movements and people's struggles against the established

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Editor's Note: As the present - July-December 2016 - issue is being published after the demise Professor D.N. Dhanagare on March 7, 2017, we are printing the above obituary here.

Shruti Tambe is Director, E.M. Euroculture Programme and Professor and Head of the Department of Sociology, Centre for Advanced Studies, Savitribai Phule Pune University, Pune 411007.

developmental model, as symbolized by the NAPM. Displacement and land acquisition attracted his attention in recent years.

Beyond dogmatic schools:

Though sometimes he could not refrain from biases and labeling people or institutions, he could keep most of his writings free of dogmatic interpretations to follow a particular school. This explains why he used Marxist methodology, but he was not a confirmed Marxist. Though he was sympathetic to non-Congress right wing groups, his analysis never reflected a biased position on issues of concern.

In fact it was an irony that he was supported only by the learned Chancellor Dr. P.C. Alexander, while all parties had lobbied against him when he was the Vice Chancellor!

Liberal Modernism:

For lectures, discussions and seminars Dhanagare was a regular learned participant, quietly sitting in the audience, never pompously demanding undue attention or honours- such a rare sight today! A true liberal democrat, he would believe in agreement over disagreement over multiple issues and continue debates and discussions with the same fervor till the end. He completed his latest book on Shetkari Sanghatana after his eightieth birthday and was curious about the reviews literally till his last day! He was a public intellectual and took that role very seriously as is exemplified by his role in at least half a dozen institutions, organizations and charitable educational initiative in Pune and across Maharashtra including the Asiatic Society of Mumbai.

Upset with the decline of democratic institutions and the apathy of the ruling class and the ruling groups about decay, he was planning to write about it. He didn't believe that he has to bid farewell so quickly and hence was planning for three more books including an autobiography.

Dhanagare came from a non-metropolitan background with modest means. However, he always envisioned himself as an international commentator of social phenomena and never thought that Sociology was a subordinate field. Though he wrote against the apathy about Sociology, he was never a crestfallen scholar. He believed that democratic Socialism was the path for India, in spite of its shortcomings and did not cease to offer policy analysis from that perspective. Being a part of many delegations abroad representing Government of India, he repeatedly criticized the green revolution, the failed practices of agrarian welfare in the post-1990 era and the developmental sector.

In recent years he signed petitions addressed to the President of India condemning attacks on Sociologists across India and grieved for shrinking of democratic space for dissent ands discussion.

Untimely Exit:

He was awarded Lifetime Achievement Award by Indian Sociological Society in 2011 at Cuttack. He was the past president of the society. He was also felicitated by Marathi Samajshastra Parishad in 2013. He was National Fellow at the Indian Institute of Advanced Studies, Shimla for two years till 2014 and completed a book manuscript there. A fitness freak with lots of plans of writing and publishing it came as a shock to him and to his students and friends that he had a massive heart attack while giving a lecture at the French Institute at Pondicherry in early December 2016. It was indeed an untimely exist, but in a way befitting his no-nonsense persona. The lectures that he delivered in August, September 2016

for M.A. students on Karl Marx as a Classical Sociologist and dependency paradigm were probably the last lectures in a classroom.

In times of growing intolerance to intellectual pluralism and undermining of protocols of public institutions and willful attack on democratic institutions, Dhanagare was obviously upset. He was never a blind follower and hence was a silent, irked spectator of the political drama in recent times. His exit is untimely as the profession of Sociology needs eminent scholars like him to redefine the role of Sociology in the neoliberal world with little space for communicative rationality in the tug of war between populism and power.

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(The Problem of Population Growth in India:
The Need for Family Planning and its Success) (in Marathi)
by Kumudini Dandekar, Pp. 60, Rs. 30/-.

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