IMPACT ASSESSMENT OF MAHITI SINDHU PROGRAMME

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Acknowledgement

In recent decades advances in computerization, communication and information technology have occupied a central place in almost all the fields of the economy. It has been also realized that access to the advanced information technology is a pre-requisite for all the nations to participate in the process of economic development in general and knowledge revolution in particular. In this background, Government of Karnataka has initiated a pioneering effort to introduce free computer education at the school level during the past five years to impart computer education to students in government schools through the Mahiti Sindu Programme (MSP). The ambition of this massive programme of MSP is to give computer education and computer aided education to the students of the government high schools in each of the selected schools and thereby enhance the quality of education. After five years it was felt to evaluate MSP to assess the contribution, the programme has made for the students to learn the basic skills in computer related education as well as learning other subjects through computer aided education. CMDR was asked to undertake the evaluation study of MSP.

Our special thanks are due to Vijaya Bhaskar (*IAS*) Secretary, Department of Education, Govt. of Karnataka, Sri K. Srikanteshwar, Special Officer and In-Charge Joint Secretary (Planning), Education Department, Govt. of Karnataka for their kind advice and guidance during the evaluation study.

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Dharwad
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Dr.Sailabala Debi
Director, CMDR

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EXECUTIVE SUMMARY

The study tried to assess the impact of the Mahiti Sindhu Program (MSP) implemented by the Government of Karnataka for the secondary schools in the state.

Objectives of the study:

Following are the specific objectives of the study.

1. To examine the performance levels of the students gained through computer and computer aided education in different subjects
2. To examine the flow of different components under the programme like computer hardware, software and human resources (computer instructors) and their training under the scheme. Hardware includes the number of PCs supplied, Generator, and other related inputs like furniture etc., Software would include the supply of computer education related software and the software for learning other subjects through computer aided education.
3. To review the training component of the computer instructors and other teachers of the school under the MSP
4. To explore the impediments coming in the way of implementation of the scheme and suggest ways and means of overcoming them
5. To assess the impact of the MSP on the enrollments in the schools. Here an attempt has been made to highlight the enrollments in the selected schools in the pre and during the MSP period. Though conceptually it is difficult to separate out the impact of MSP per se on enrollments, an attempt is made to have qualitative assessment of such impact through the case study approach with students, parents and teachers as the key informants in this regard.
6. To assess the impact of MSP with regard to the attendance levels of the students. The attendance levels have also bean reviewed for both pre and during the MSP periods.
7. To compare the attendance level of students in non-MSP schools with that of MSP schools. This provides an idea of increments in attendance if any attributed to introduction of MSP.
8. To examine the impact of MSP on dropout scenario at the schools. Here again one cannot ascertain the impact of MSP on the fall or otherwise with regard to the

dropouts. However an attempt is made to ascertain the impact of the programme using the case study approach as stated above.

9. To compare the status of students with regard to the learning capacities, enrollments, dropouts of MSP schools with that in the non-MSP schools.
10. To assess and compare the performance of students in terms of computer aided education in MSP schools with that of non-MSP schools.

Sample:

A total of 130 MSP schools and 30 non-MSP schools were selected for the study on random basis. The schools were spread over all the educational districts in the state and due representation was given to different categories of schools covered by different providers under the program like NIIT, APTECH and EDUCOMP.

Methodology:

The major focus of the study was to assess the learning levels of the students and computer skills gained as part of the program. The effect of MSP on enrollments, attendance and dropouts was also examined. The flows of inputs to the schools and to the students from the providers were also considered as part of the evaluation. Separate instruments were developed to elicit the required information. Various key informants like the officials of the Department of Education starting from the block level to the state level were also interviewed to get the relevant information.

Impact Assessment of MSP - Major Findings:

- ❖ On the whole it appears that the MSP has been successful in making a significant impact on the students community.
- ❖ The indicators of enrolment and attendance have shown considerable amount of improvement as compared for the periods prior to MSP and during MSP.
- ❖ It also appears that MSP schools are in a better position as compared to the schools in Non-MSP category in respect of these indicators.
- ❖ The program has made considerable in roads in providing Kannada medium learning materials for the benefit of the students.
- ❖ The skills gained by the students with regard to computer *per se* as well as computer aided education need appreciation.

- However, there are certain weak spots, which deserve immediate attention. Regular and uninterrupted power supply and effective internet connection are the two major ones in this regard.
- Teaching of different soft wares seems to be in good shape and the instructors also feel that crucial indicators like enrollments, attendance and performance of students have been doing well.
- Their opinion with regard to the repair and maintenance of equipment is encouraging and the supply of textbooks in local language is also quite student friendly.
- However, they have also expressed some concerns about the regularity of power supply, internet facility in far flung areas and supply of internet based CDs. Thus there is a need to look into these areas to plug in the loopholes that exist in certain pockets of the state.
- Views of the computer aided teachers have clearly brought out the fact that the language issue of computer education had been effectively dealt with by the officials who are in charge of implementing the program.
- The performance of the students also seems to have improved due to the teaching of subjects through the help of computers.
- The views of the students on MSP have brought out the fact that greater numbers of students are aware of the program.
- It also seems that there is considerable improvement of the skills of the students on account of the computer and computer aided education.
- The attitudes of the students towards learning and participation in the activities of the school have also shown considerable improvement.
- The areas, which need improvement, could be the supply of Internet based CDs and provision of other inputs to the students.
- On the whole the students community seem to be quite satisfied and they also enjoy this new and innovative method of teaching and learning.
- As far as the performance of students in SSLC examination is concerned it seems to be better in the MSP schools than the Non-MSP schools. This would also reflect upon the additional inputs provided to the students through the computer-aided education.
- Among the providers EDCOMP seems to be doing well as far as certain positive indicators of MSP are concerned. Most of the input indicators are favoring this provider which probably supports the argument of SMALL IS BEAUTIFUL.

The following are the major bottlenecks / suggestions with regard to the MSP.

- Though there is a training a component under MSP it needs to be more comprehensive and the Head Master of the schools also needs training with regard to the use of computers in teaching
- The evaluation by the Engineering colleges should also test the skills gained by the students with regard to computer education.
- Telephone connection and internet facility could be the major impediments and steps should be taken to improve the situation especially in rural areas
- The power supply is another area where much needs to be improved. Some schools have suggested for the supply of solar-based power supply instead of a generator.
- There is a need to provide more furniture and additional room to the schools for the purpose of MSP activities.
- Since many agencies have started the process of terminating the instructors under the pretext of the end of MSP and hence the instructors are loosing interest in the teaching activities. Some sort of continuity needs to be assured to them to sustain their interest.
- Shortage of PCs is also one of the important handicaps faced by the schools
- Medium of textbooks also seem to be significant bottleneck and effective number of text books each year needs to be supplied to the schools.
- Since there are problems with regard to the supply of Floppies, CDs, Printing paper etc., the Head Master of the school needs to be given the authority and financial powers to procure these things.

The SSLC results compared across MSP and Non MSP also substantiate the fact that MSP has made significant impact on the learning levels of the student community with the input from computer and computer aided education.

The program happens to be quite innovative and stands as a model for emulation by other states as well. Though it had some teething problems at the beginning, the sincere and tireless efforts by the officials of DSERT have put the whole program on the right track. If extended, the MSP has great potential for the economy of Karnataka in the days to come.

IMPACT ASSESSMENT OF MAHITI SINDHU PROGRAMME

1. Introduction:

Education has become an important area of interest to economists since empirical investigations revealed that output of goods and services had grown rapidly than the quantity of inputs (labor and capital) used to produce it. This difference in the values of input and output known as 'residual' was attributed to advances in knowledge, education of the labor force etc., The attempts for estimating the effect of each potential source of residual including education were initiated in some of the studies. All such studies resulted in the dawn of a new branch of economics in the form of 'Economics of Education'. T.W. Schultz being the pioneer in the field of economics of education was considered to be responsible for the current thinking on issues related to economics of education. In the latter years this thinking process came to be known as 'human capital revolution in economic thought'. Studies in the developed and developing countries have established a positive relationship between person's earnings and the amount of formal schooling received. (Becker, 1964, Schultz, 1963). Reviews of studies on cost benefit analysis in education have shown that return to education exceed the rate of return to physical capital. Rate of return to primary education is generally higher than the rate of return to secondary education. (Psacharopolous 1975)

These developments in the domain of economic science have highlighted the importance of educated manpower for any economy in general and the type of industry where such manpower is located in particular. The human capital analysis was stimulated by concern for poverty, economic development, income distribution and the like. The analysis is also connected to human resource development and use of quantifiable base for decision-making process.

Such studies relating to the returns to the graduates in the discipline of electronics have also substantiated such findings especially in the state of Karnataka (Panchamukhi & Annigeri).* The sum and substance of these and other similar attempts brings out the important role played by the input of education to individuals as well as to the economy as a whole. In the recent past both academicians as well as policy makers are paying greater attention to secondary education. The challenges faced in retaining the

* Human Resources in the Electronics Industry: A Case Study of Bangalore, CMDR, Unpublished

child in the school till the completion of secondary education are many and much efforts are needed to enhance retention at this level of education. The Mahiti Sindhu Programme tried to provide computer education to the students of secondary education in Karnataka state. Before moving on to the evaluation part of the study, it would be useful to take up a broad view of the secondary education itself in the state. The following discussion brings out an overview of secondary education in the state.

2. Focus of the Present Study:

In the present day context the rapid expansion of IT sector needs no explanation. Indian electronics industry has tremendous potential to become an engine of growth and productivity improvement for all sectors of the economy. With the continued thrust on liberalization, in order to make IT products cost effective and price competitive, the use and penetration of computers in the society is fast expanding with special emphasis on multi-lingual technologies. Investment in knowledge-based industries will determine a country's dominance in the present century. The software industry has emerged as one of the fastest growing sectors in the economy with a Compound Annual Growth Rate (CAGR) exceeding 50% over the last five years and with a likely turnover of US$ 6 billion and exports of US$ 4 billion during 1999-2002. The Government has targeted an export of US $ 50 billion by the year 2008 for the Indian software industry. In the state of Karnataka, the electronics industry is growing at a faster rate, and the growth potential seems to be quite promising. In this background the need for computer education assumes significance to provide the required manpower to meet the futuristic needs.

In this background, the early exposure of computer education to the school going children assumes significance. It would create the ground for the participating students to get prepared for the challenging opportunities that are waiting for them in their career ahead. The Government of Karnataka has made earnest attempt to impart computer education to students in Government schools through the 'Mahiti Sindhu Programme' (MSP). Now it is the opportune time to examine the impact of such programme on the student community to assess the contribution that the programme has made on the students to learn the basics of skills in computer related education. The ambition of the massive programme of MSP is to give computer education and computer aided education to the students of the Government High Schools in each of the revenue hobli, Morarji and

Navodaya residential schools run by the social welfare and backward class department and thereby to enhance the quality of education. The programme has set forth various objectives and these objectives are realized through a well-designed strategy. The proposed study would attempt an evaluation of MSP in the selected pockets of the state with the following objectives.

The proposed study has attempted an evaluation of MSP in the selected pockets of the state with the following objectives.

3. Objectives of the study:

Following are the specific objectives of the evaluation of MSP in Karnataka state.

1. To examine the performance levels of the students gained through computer and computer aided education in different subjects
2. To examine the flow of different components under the programme like computer hardware, software and human resources (computer instructors) and their training under the scheme. Hardware includes the number of PCs supplied, Generator, and other related inputs like furniture etc., Software would include the supply of computer education related software and the software for learning other subjects through computer aided education.
3. To review the training component of the computer instructors and other teachers of the school under the MSP
4. To explore the impediments coming in the way of implementation of the scheme and suggest ways and means of overcoming them
5. To assess the impact of the MSP on the enrollments in the schools. Here an attempt has been made to highlight the enrollments in the selected schools in the pre and during the MSP period. Though conceptually it is difficult to separate out the impact of MSP per se on enrollments, an attempt is made to have qualitative assessment of such impact through the case study approach with students, parents and teachers as the key informants in this regard.

6. To assess the impact of MSP with regard to the attendance levels of the students. The attendance levels have also bean reviewed for both pre and during the MSP periods.
7. To compare the attendance level of students in non-MSP schools with that of MSP schools. This provides an idea of increments in attendance if any attributed to introduction of MSP.
8. To examine the impact of MSP on dropout scenario at the schools. Here again one cannot ascertain the impact of MSP on the fall or otherwise with regard to the dropouts. However an attempt is made to ascertain the impact of the programme using the case study approach as stated above.
9. To compare the status of students with regard to the learning capacities, enrollments, dropouts of MSP schools with that in the non-MSP schools.
10. To assess and compare the performance of students in terms of computer aided education in MSP schools with that of non-MSP schools.

4. Methodology of the Evaluation:

4.1 Sample Frame for the Study:

I. MSP SCHOOLS

Due to limited time for completion of the study, it was not possible to cover all the MSP schools for evaluation. Hence the study team firmed up the sample frame for the study, keeping in view to provide due representation to different provider categories who are engaged in the MSP. The following districts are chosen for the study.

Districts Selected for the Study

Districts Covered by NIIT	Districts Covered by APTECH	Districts Covered by EDUCOMP
1 Bangalore North	1 Bangalore South	1 Kolar
2 Bangalore Rural	2 Bidar	2 Chickmagalur
3 Chitradurga	3 Raichur	
4 Davangere	4 Bagalkote	
5 Shimoga	5 Gadag	
6 Tumkur	6 Haveri	
7 Madhugiri	7 Dharwad	
8 Mysore	8 Chamrajnagar	
9 Udupi	9 Kodagu	
10 Mandya	10 Chickmagalur	
11 Hassan		
12 D. Kannada		
13 Belgaum		
14 Chikkodi		
15 Bijapur		
16 U.Kannada		
17 Koppal		
18 Gulbarga		
19 Yadagir		
20 Bellary		
21 Kolar		
22 Chikkaballapur		

In the next step of selection of sample units, the taluks covered by these providers were selected. The table presented in the appendix gives the schools and taluks in different districts according to the provider category.

II. NON - MSP SCHOOLS

About 30 non-MSP government schools were surveyed as part of the study to capture the performance of such schools and to ascertain the impact of MSP with regard to the various indicators as stated above. These schools were concurrently surveyed along with the MSP schools**. These schools were selected randomly from the same area where the MSP school is located, keeping in view its identical characteristics as that of MSP school.**

4.2 Methodology:

4.2.1 Learning Processes: In order to ascertain the learning process of the students an instrument for the students was developed to gain the views of the students with regard to the skills gained in learning computers per se as well as learning other subjects through computer aided education. The major thrust of assessing the performance was based on the scores obtained by the students in different subjects for pre and during the MSP periods. Various modules of the instrument tried to capture the skills gained by the students in this regard. The instrument prepared for the students included some qualitative questions in order to capture the improvements of the insights of the students on account of computer education in MSP schools vis-à-vis non-MSP schools.

The study tried to assess the learning process of teachers other than computer instructors in respect of computer-aided education. This aspect was captured through the checklist specifically prepared for the teachers as well as for the computer instructors. The assessment of students on the teaching ability and competence of teachers was examined by using scoring chart in the instrument.

4.2.2 Flow of Inputs to the Schools: A questionnaire for the schools was administered as part of the study to know the flow of different inputs provided under the MSP. The timing and adequacy of the inputs and the maintenance of such equipments was captured through the instrument. The adequacy of the PCs supplied was examined taking into account students per PC in each school and time allocated per class for theory and practical. The same instrument also captured the training component of computer instructors as well as school teachers.

4.2.3 Enrollments, Attendance & Dropouts: Using the data from the selected schools, the study examined these indicators for the pre and during the MSP periods. The study focused on the periods from 1998-99 to 1999-2000 as the period prior to the introduction of MSP and the periods from 2000-01 to 2002-03 as the period during MSP for all purposes. However as one cannot wholly attribute the impact to the MSP alone on the enrolment, attendance and dropout, an attempt was made to capture the impact the programme has made on these indicators by using the information obtained through the key informants like students, parents and teachers.

The performance of the school during these periods (mentioned above) was examined in order to assess the impact of the performance of a particular school in influencing the enrolment, attendance and dropout rate. For example if the performance of the school after the MSP has significantly improved followed by the improvement in enrolment and attendance one may infer that the increase in enrolment and attendance may be on account of MSP.

Surprise visits to the schools were made at least 2 to 3 times during a week to verify the actual attendance in a particular school besides checking the attendance register of the respective schools.

4.2.4 Stakeholders/ Key Informants' Interview: Using the detailed check lists for different stake holders of the programme like, providers of computer education (APTECH, NIIT, EDUCOMP & INTEL) Government Officials who are in charge of managing the programme at different levels, DSERT officials, DIET officials and others an attempt was made to understand the possible impediments the programme is experiencing and how best one can come up with solutions to overcome them

Before understanding the results of the present study, it would be proper to have a peep at the overall situation of secondary education in Karnataka, for which the MSP was meant for.

5. Overview of development of Secondary Education in Karnataka:

Though secondary education is not directly considered as the responsibility of the state under the Indian Constitution, great pressures are being felt in recent years by the education sector of the state of Karnataka with respect to secondary education also. The fact that Karnataka is on the verge of universal coverage and universal access to elementary education and the transition rate from elementary education in the state is likely to be increasing over the period of time gives an idea about the degree of pressure on the secondary education facilities in the state. With the option effect released in recent years for the vast population from the SC and ST categories, which were hitherto not so much getting the opportunities for education, the educational sector as a whole is now facing new challenges not only in terms of provision of general educational facilities but also in terms of the contents, medium and other aspects of education. The children of first generation learner families have posed new challenges before not only the managements of educational institutions but also before the teachers and also the entire learning children of all communities. Additional challenges are posed by the reform ethos of beneficiary financing of education and withdrawal of subsidies from education in general and from secondary and post secondary education in particular. In the ultimate analysis human development index of a region over a period of time depends upon how the region has handled these and similar challenges in the past and how it has planned to handle the challenges in the future. In the following pages we wish to highlight the achievements of the state so far and the concerns to be addressed by the policy in the future so far as secondary education is concerned.

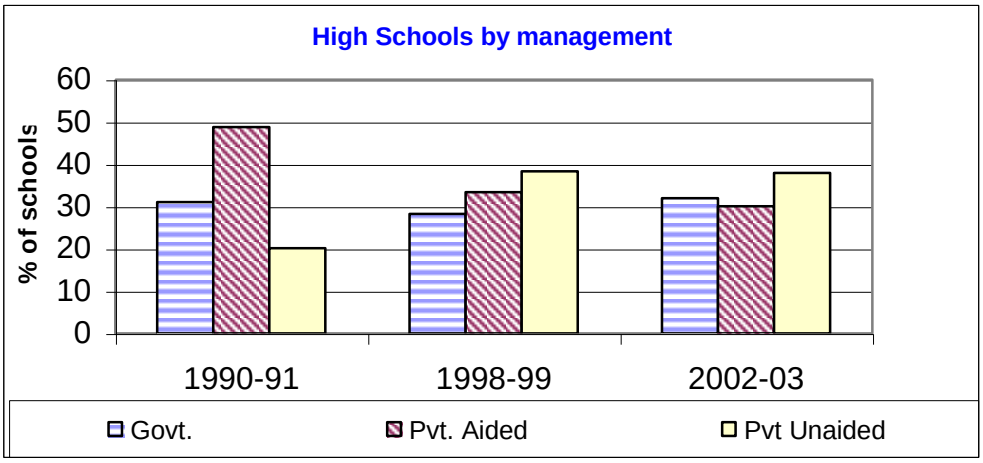
The *Vision Document* visualized that about 65 per cent of children in the relevant age group should participate in secondary education, about 80 per cent of those who join should complete secondary education and that secondary school leavers should be so equipped as to be in a position to join the world of work.

5.1 High schools

The number of high schools in the state grew at a compound growth rate of 6.2 per cent per annum (1990-91 to 2002-03). Across management it is found that the unaided schools grew very fast in number at 10.9 per cent as against 5.9 per cent and 1.8 per cent in the case of government and private aided schools respectively. The unaided

schools increased from 20 per cent to 38 per cent during the same period. During1998-99 to 2002-03 the proportion of unaided schools has remained more or less constant. The government schools are found to be larger in number in rural areas while the unaided schools are more in urban areas. Chart 1 shows the high schools by management.

Chart - 1



5.2 Enrolment in Secondary Schools

Girl's Enrolment

The survival rate of girls declines at the higher classes on account of several socio economic and cultural factors**.** In the year 1997-98 the percentage of girls was 43 and it increased to 47 % in 2003-04. The percentage of girl's enrolment in the state is below 50 percent despite the steady increase in girl's enrolment over the years. Table 1 summarizes the proportion of girls' enrolment in the state at the secondary level (VIII-X).

Table 1

Percentage of Girls enrolled in Secondary Schools

Region/State	1998-99			2003-04		
	All community	SC	ST	All community	SC	ST
Bombay Karnataka	39.9	36.7	39.0	44.0	33.7	42.3
Hyderabad Karnataka	39.5	34.0	31.8	44.2	36.1	37.1
South Karnataka	46.8	45.8	43.7	48.2	44.1	46.3
North Karnataka	39.7	35.7	35.5	44.1	34.8	39.7
State	44.2	42.9	40.9	46.5	41.3	43.9

Source: CPI office, Government of Karnataka

South Karnataka has the highest proportion of girls in the state. Bombay and Hyderabad Karnataka have shown faster growth in the enrolment of girls than South Karnataka in respect of all communities. Highly impressive growth is registered in enrollment of girls from ST community in Hyderabad Karnataka. It is heartening to note that the proportion of girl's enrolment among the Scheduled tribes is higher than that of Scheduled castes and over the years the enrolment of ST girls has increased at a faster rate than others. There is not much difference between rural and urban areas in respect of girls' enrolment in the state. But significant difference is found in the enrolment of girls between rural and urban areas in some of the less developed districts of north eastern Karnataka like Bijapur, Bagalkot, Gulbarga, Bellary and Raichur. There is no significant difference in girl's enrolment in schools of different managements but mostly the enrolment of girls is relatively higher in government schools for all social groups.

Gross Enrolment Ratio

Gross enrolment ratio is a better indicator for assessing the enrolment than the absolute figures of enrolment. The Gross enrolment ratio in secondary education in Classes I-X has improved from 84 % in 1998-99 to 86 % in 2000-01. GER of girls is lower than the GER of boys. Across the social groups, it is found that GER of ST is lower than that for SC and all communities.

A completely different picture emerges if one examines the GER (two years of secondary schooling after primary) for classes IX and X only. We have estimated the GER for the classes IX and X. It is found that in 1998-99 the GER for secondary stage (IX and X) was 47.9 and it increased to 52.1 in 2003-04. There is not much difference

between boys and girls GER. The GER for these two classes is found to be almost half of that for the classes I to X. Table 2 summarises the GER.

Table 2

GER for Secondary Education for classes I-X and IX-X

Year	GER : Class I-X			GER: Class IX-X		
	Boys	Girls	Total	Boys	Girls	Total
1998-99 (All)	87.03	80.37	83.77	48.03	47.82	47.93
2000-01						
All	92.86	86.89	89.95	55.53	44.98	50.47
SC	97.63	90.77	94.31	46.85	44.32	45.66
ST	84.86	75.84	80.47	42.20	35.20	38.91
2003-04 (All)	86.99	84.31	85.69	53.91	50.13	52.08

5.3 Dropout Rate

There is a constant decline in dropout rate of secondary education (I-X) over the years. In 1992-93 the dropout rate in secondary education was 71 percent and in 2003-04 it was 60 percent. Table 3 presents a summary of the dropout rate.

Table 3

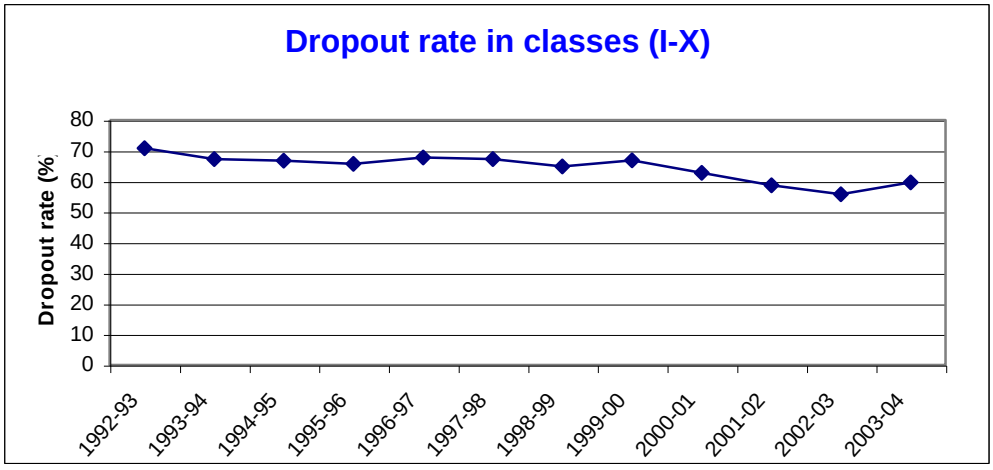
Dropout rate in classes (I-X)

Year	Dropout rate(%)
1992-93	70.85
1993-94	67.21
1994-95	66.76
1995-96	65.72
1996-97	67.78
1997-98	67.29
1998-99	64.83
1999-00	66.89
2000-01	62.78
2001-02	58.65
2002-03	55.79
2003-04	59.61

Source: CPI office, Government of Karnataka

Chart 2 presents the trend in drop out rate over the years in classes I – X.

Chart 2



5.4 Teacher Position

Pupil Teacher Ratio

The PTR has remained almost the same, as it was 24 and 25 respectively in the year 1990-91 and 2002-03. Across districts, Bidar had the highest PTR and Kodagu had the lowest PTR. South Karnataka has a lower PTR than north Karnataka. Normally all the teachers in government and aided schools are trained teachers.

Female Teachers

The percentage of female teachers is very significant in the schools particularly in rural areas as it helps in enhancing the enrolment and retention of girls at the secondary level. The percentage of female teachers was 34 per cent in the year 1998-99 and it was not increased by the year 2002-03, as it was 32 in 2002-03. The percentage of female teachers was higher in south Karnataka than in north Karnataka. As per the Seventh All India Educational Survey provisional figures, the percentage of female teachers in rural areas is almost half of that in urban areas in almost all the districts. The proportion of female teachers in both Hyderabad Karnataka and Bombay Karnataka is below the state percentage of female teachers. Table 4 summarises the position relating to female teachers in secondary education in Karnataka.

Table 4

% of female teachers in Secondary Schools by Rural and Urban Areas In Karnataka (2002)

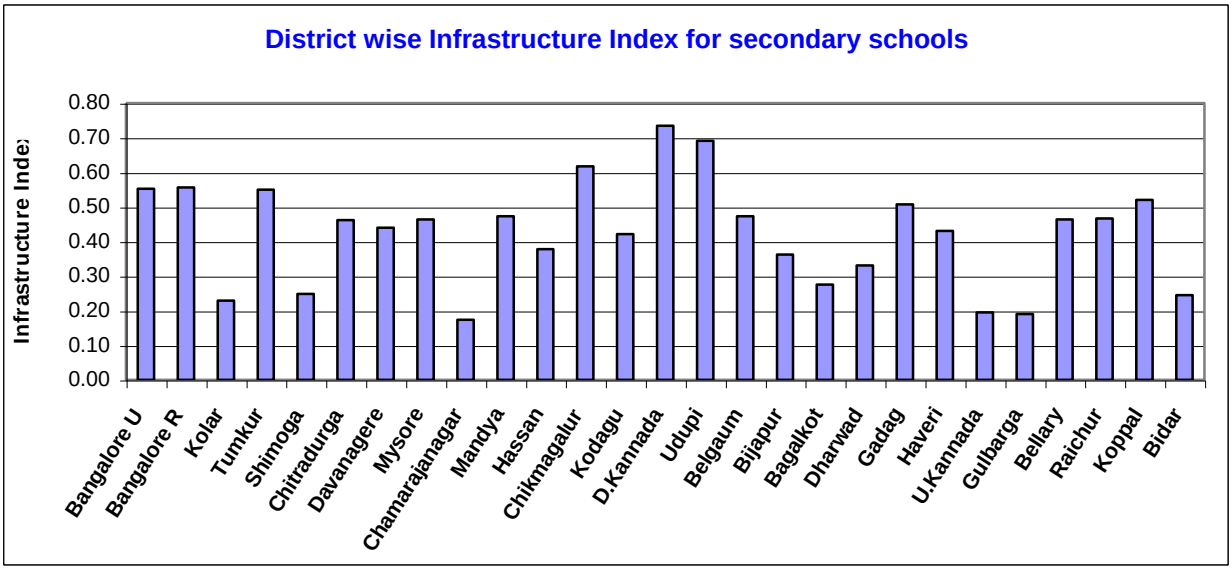
Region	Rural	Urban
Bombay Karnataka	19.24	40.52
Hyderabad Karnataka	17.36	49.24
South Karnataka	24.93	63.75
North Karnataka	18.59	44.10
State	22.46	58.13

Source: Seventh All India Education Survey, Provisional, 2002

5.5 Infrastructure Facilities of the schools

In order to assess the infrastructure facilities of the schools the infrastructure index was estimated by including all the necessary infrastructure in the schools. The infrastructure index of south Karnataka (0.47) districts is higher than the state index (0.42) and north Karnataka index (0.37). The lowest infrastructure index is found in Uttar Kannada and Gulbarga (0.19 each) district while the highest infrastructure index is found in Dakshina Kannada (0.73) district. Chart 3 presents infrastructure index.

Chart 3



5.6 SSLC Results

The performance of SSLC examination is found to be better in privately managed schools and in urban schools than the government and rural schools. Further, the non SC/ST student's performance is better than the SC/ST students. The girls' performance is better than that of boys. The enrolment of girls is lower and dropout rate is higher than boys. But if the girls continue their education, they perform better than the boys. Over the years the pass percentage has not shown any consistent trend. There is a marginal increase in the pass percentage from 54 per cent in 1990 to 56 percent in 2004 in the state. Table 5 summarizes the SSLC results.

Table 5

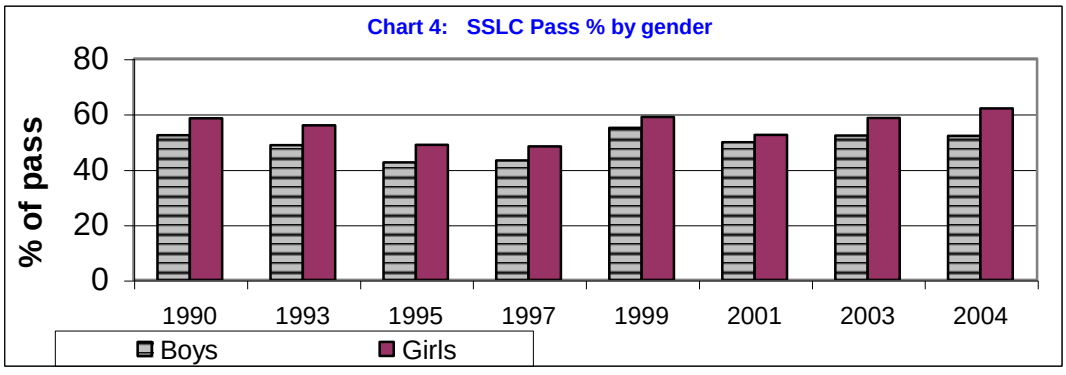
SSLC Results of Karnataka (% of Pass to Appeared students)

Results by	1990	1993	1995	1997	1999	2001	2003	2004
Type of School								
Government	45.4	39.8	30.6	32.5	47.3	42.5	51.2	62.2
Private	60.0	56.7	51.5	57.2	61.7	56.3	58.6	68.8
Gender								
Boys	52.3	48.7	42.5	43.2	55.0	49.7	52.2	52.1
Girls	58.4	55.9	48.8	48.3	58.9	52.4	58.5	62.0
Region								
Rural	52.4	46.4	40.5	40.3	54.1	47.9	53.7	57.1
Urban	56.4	56.4	48.8	57.2	59.9	55.9	56.4	55.6
Social groups								
SC/ST	41.3	40.8	32.5	32.1	43.8	36.7	51.3	52.7
General	57.1	53.6	47.8	48.5	59.6	48.1	54.6	57.0
State Total	54.3	51.48	44.9	45.3	56.7	51.1	55.1	56.3

Source: Karnataka Secondary Education Examination Board, Bangalore.

Chart 4 presents the SSLC pass % by gender in Karnataka for different years.

Chart 4



The faster growth of unaided schools in the sate is quite alarming as it affects both equity and efficiency of secondary education in the state. The GER at the secondary education over the period shows a marginal increase. The dropout rate at the secondary level is found to be very high as about 60 per cent of the students dropped out when they reach class X. The reason may be social i.e. withdrawal of girls after certain age and prevalence of child marriage in certain parts of north Karnataka. Also the low percentage of female teachers may be attributed to high dropout of girls.

The infrastructure of the school is relatively poor particularly in the districts of north Karnataka as the average index (0.37) of these districts is below the average index of the state (0.42). Even 54 percent of the schools in the state do not have a toilet at all in 2002-03 and 68 per cent of the schools does not have separate toilet for girls. This may have negative impact on the girl's enrolment and their retention.

The children of private schools and urban schools perform better than that in the government schools and rural schools as revealed form the SSLC results. The children from farming households as well as poor households largely continue their study in these schools, which has a long-term impact on their career.

The objective of vision document that 'about 80 per cent of those who join should complete secondary education' is yet to be achieved *as only 40 per cent of those who join completed secondary education in the state in the year 2003-04.*

6. Impact Assessment of Mahiti Sindhu Program (MSP):

The MSP was introduced in the right earnest to provide computer and computer-aided education to the selected schools in the state. The major features of the program are as noted below:

1) The MSP planned to provide computer education to 2.78 lakh students studying in $8^{th,}$ 9^{th} and 10^{th} standards in one thousand schools out of 2667 Government. secondary schools in Karnataka state.

2) Apart from Computer Education other subjects like Mathematics, Science, Social Science and English were also considered for teaching using computers. It also aimed at providing Internet facility to all students.
3) Teaching materials were to be provided according to the Medium of teaching (Kannada or English)
4. Computer Education would be provided to the extent of 4 periods per week per student. In addition to this, one hour would be devoted to each class for computer education.

Private computer agencies were involved in the prevision of computer education to the schools. Thus MSP also reflects the classic example of Public Private Partnerships (PPPs) in education sector.

In order to implement the program, following responsibilities were earmarked for different actors involved in the program.

6.1 Responsibilities for the Computer Agencies:

1. The agencies were required to supply computers and other accessories like printers, operating system software, modem, telephone connection along with internet facility, furniture, electricity connection and the like.
2. Depending the number of students, the number of computers to be supplied to the school varies and following is the norm for the supply of computers to the schools.

Table 6

Category of School	No. of Students	No. of Schools	No. of Computers
A	Up to 150	261	1 Server and 5 PCs
B	151 to 250	273	1 Server and 9 PCs
C	251 to 550	466	1 Server and 14 PCs

7. Supply of UPS systems

Category A Schools- On line 2 KVA with half hour battery back-up

Category B Schools- On line 3 KVA with half hour battery back-up

Category C Schools- On line 3 KVA with half hour battery back-up

8. Supply of Two Qualified Computer Instructors

9. Educating the children through Internet Active Multimedia

- Teaching different applications on computer and provide at least two hour Internet connection. Children would also be taught to open and operate an e-mail account.

- Providing computer training to regular teachers of the schools for a period of one month especially during the vacation.

9.1 Responsibility of the Department of Education:

The government had the intention to provide computer education to schools run by the Department of Education, Morarji Schools run by the Department of Social Welfare, Minorities and Backward communities, Girls' Schools in rural areas. Keeping these norms as the basis the concerned officers in the concerned district prepared the list of schools to be included under the programme.

9.2 Criterion for Selection of Schools:

The following criterion was laid down for the selection of the schools.

1. One Government Secondary School in each Hobli.
2. Priority to be given to Girls' Secondary Schools
3. Including all Government Secondary Schools where there is a Science Center
4. Including all Government Secondary Schools where Class Project in practice
5. Selecting residential schools run by the Departments of Social Welfare and Backward and Minorities Department.

9.3 Provision of Physical Inputs:

At the outset the need was felt to provide a dust free room in the school having three-phase electricity connection.

Commissioner, Public Instruction is responsible for the design, implementation and supervision. It also monitors the progress and makes suitable recommendations to be incorporated as corrective measures. Director DSERT is in charge of actual implementation of the program and it would oversee the issues relating to preparation of the detailed work-plan, post implementation administrative matters, finalizing the agencies, all administrative and financial matters of the program.

There is a well laid out plan for monitoring the progress of the program at the state level, district level and block level. The reporting system concerning the difficulties/problems faced by the schools is very effective. If the schools face any problems or shortcomings with regard to the roles played by the private agencies providing computer education, the chain of actions from the school level to the level of DSERT would act immediately to initiate the corrective measures. In case of failure on the part of the agencies to comply with the responsibilities assigned, the system has a mechanism of penalizing them. Thus the MOU signed between DSERT and the Agencies has inbuilt corrective mechanism which would ensure the smooth progress of the program.

10. Impact Assessment of MSP - Major Findings:

In the following discussion an attempt is made to present the major impact the MSP has made at the school level. The indicators relating to enrollment and attendance are examined to bring out the role of MSP. **Since the factors influencing enrollment and attendance are many, it would be difficult to separate out the impact of MSP per se in this regard. However, our discussions with the Head Masters, Teachers and Computer Instructors have confirmed the fact the MSP is successful in attracting the children to the school as well in enhancing their attendance at the schools.**

10.1 Enrollments in MSP and Non-MSP Schools:

The class wise average enrollments in MSP and Non-MSP schools do indicate the fact that the enrollments in MSP schools are distinctly greater than the average number of students per Non-MSP schools. It is also interesting to observe that such enrollments have been showing an increasing trend for the MSP schools. Thus, there is every possibility that the enrollments in MSP schools could have been influenced by the information technology based education in these schools. The following graphs depict such a picture for different standards.

Chart 5

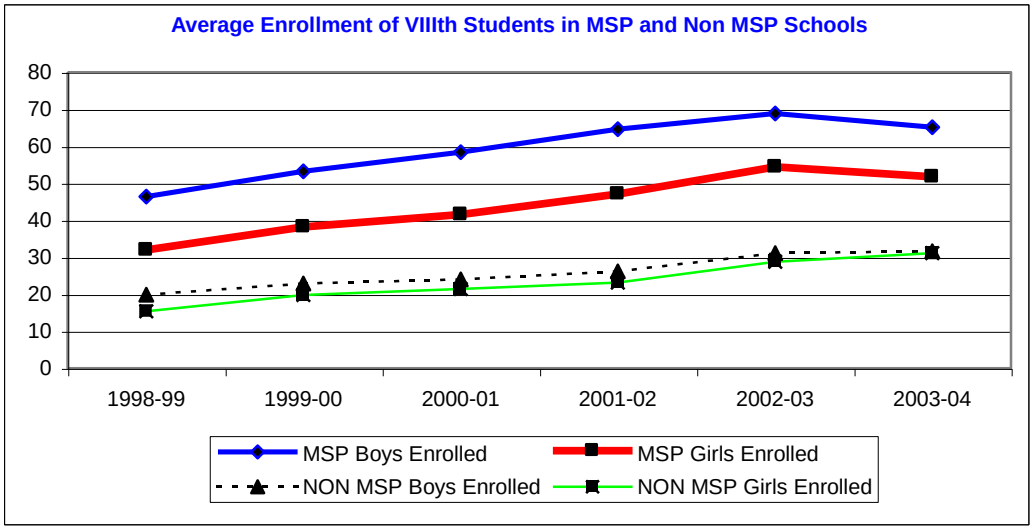


Chart 6

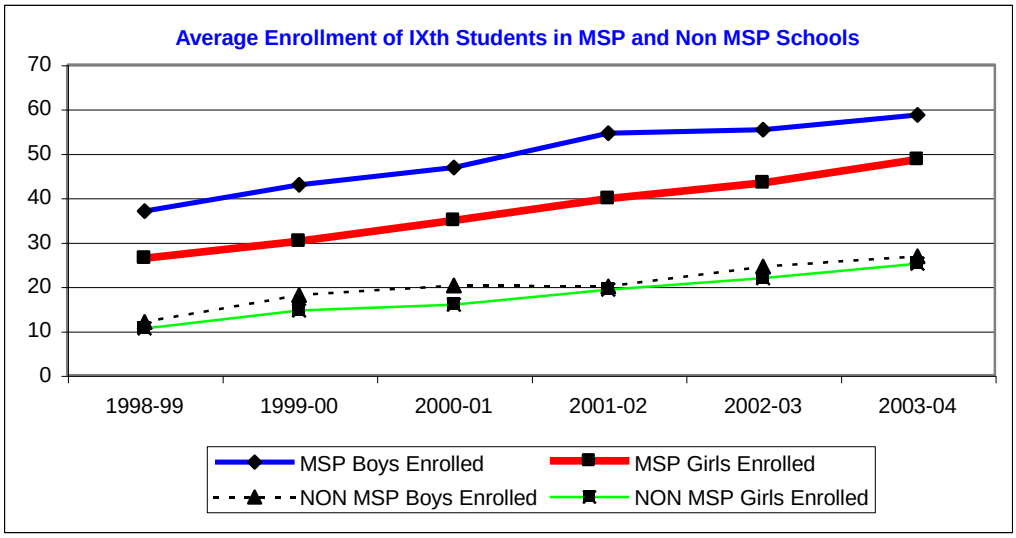
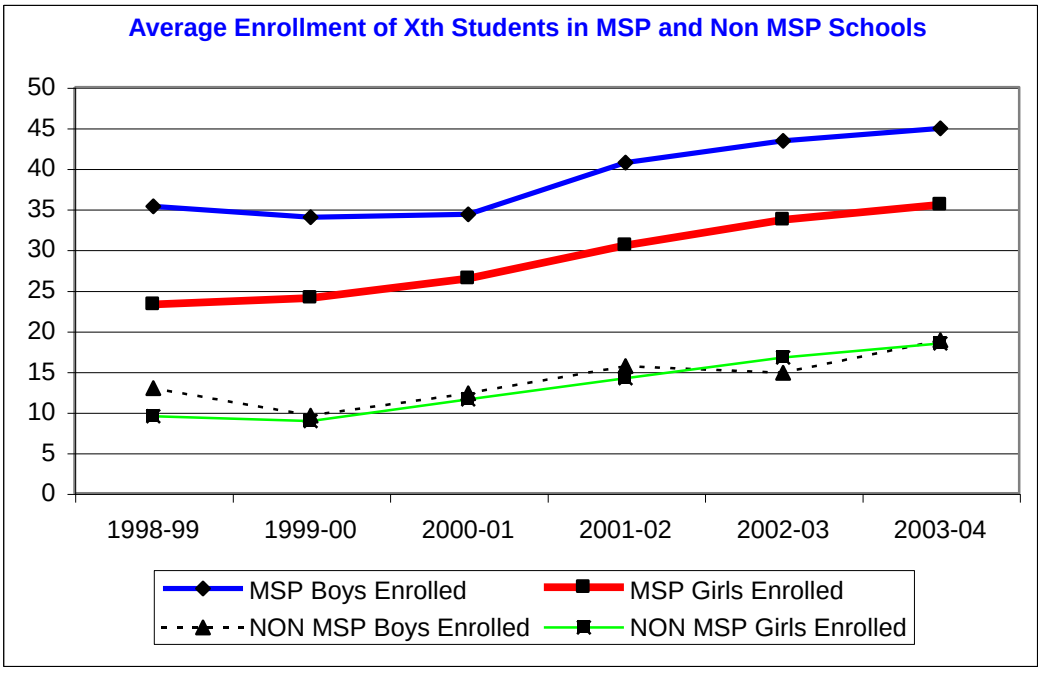


Chart 7



10.2 Attendance in MSP and Non-MSP Schools:

The picture that emerges out of the analysis of the attendance data also supports the positive impact of the MSP. For example, in the Non-MSP category schools we can note that the average number of students attending the respective classes is significantly lower than the MSP schools. Following graphs do indicate this for different classes for MSP and Non-MSP schools. In view of non availability of data for VIII standard the respective graphs is not presented in the report.

Chart 8

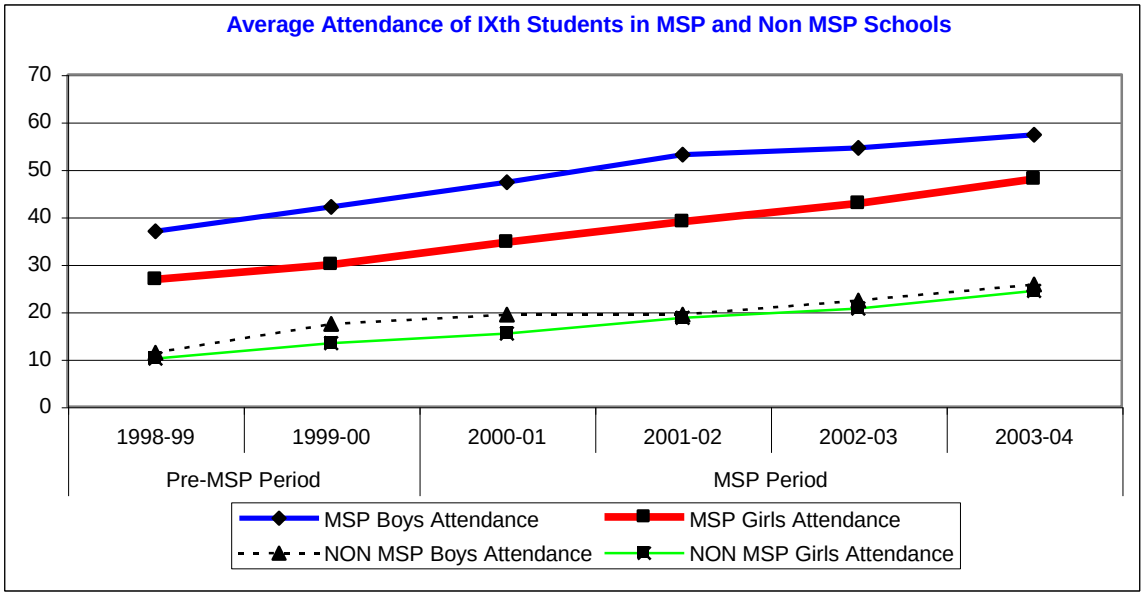
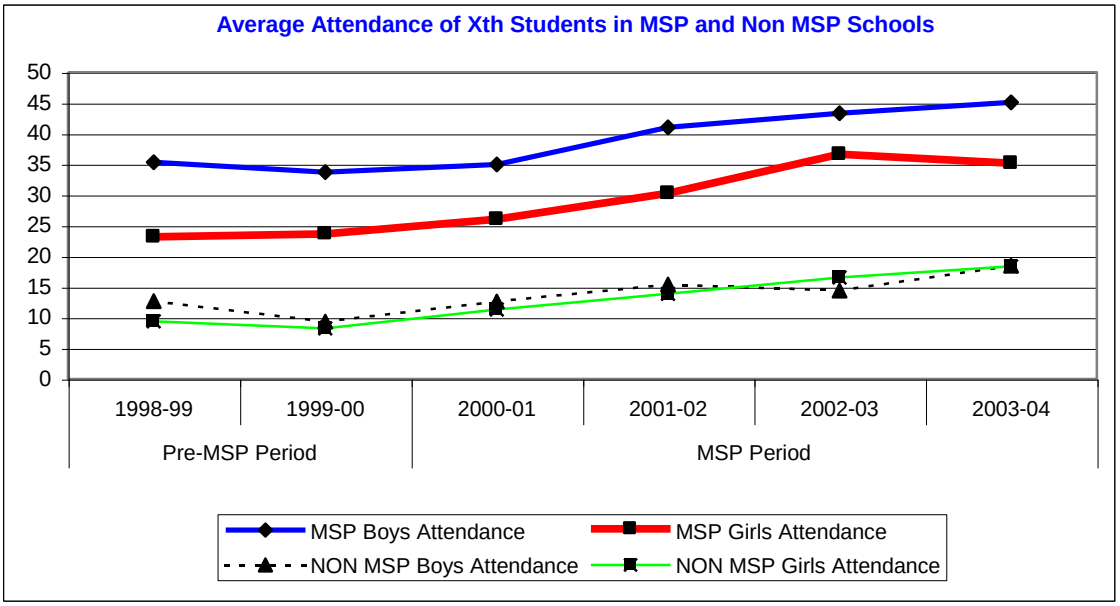


Chart 9



10.3 Proportion of SC/ST Students to Total in MSP and Non-MSP Schools:

It would be useful to know the impact of MSP on the enrollments of socially disadvantaged groups like SCs and STs. This would have a bearing on the equity considerations of the program as far as the distributional effects are concerned. In this background an attempt was made to know the proportion of SC/ST enrollments to the

total enrollments. This would tell us about the extent of participation of these socially backward groups in mainstream schooling. The analysis of the data clearly shows that the MSP has been successful in attracting greater number of students belonging to these groups in the schools under the program. Following graphs depict the picture for different classes for MSP and Non-MSP schools.

Chart 10

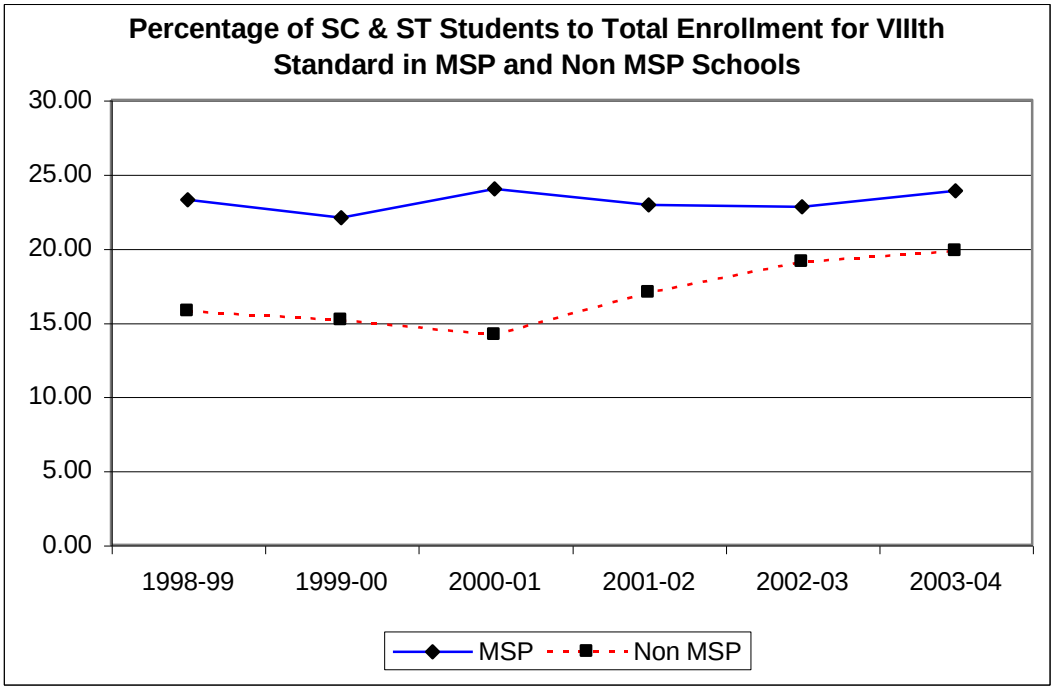


Chart 11

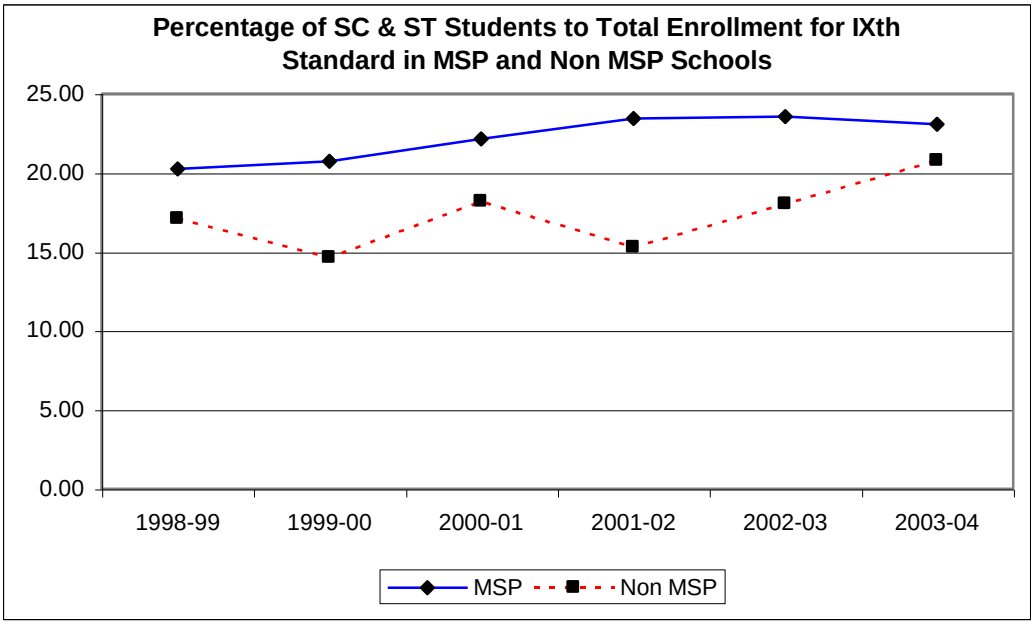
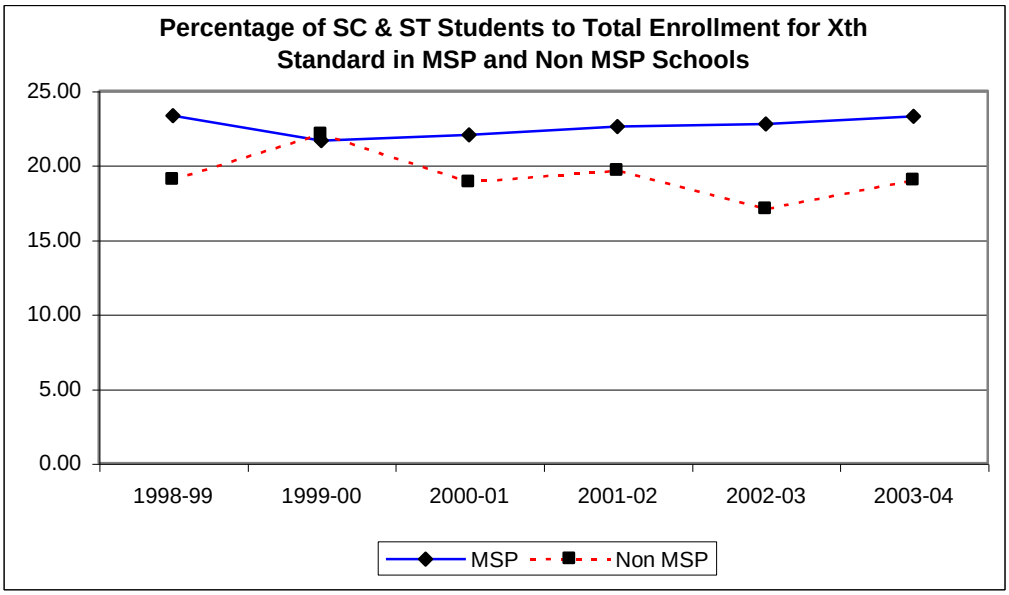


Chart 12



10.4 Proportion of SC/ST Students in Attendance in MSP and Non-MSP Schools:

As the SC and ST students are doing better in enrollments, an attempt was made to know their attendance status between MSP and Non-MSP schools. The percentage of SC/ST students attending to the total attendance at the schools revealed that they attending on a higher scale in the MSP schools. Thus, the MSP seems to be instrumental in not only enrolling greater number of students but it is also encouraging the socially backward students to go the school regularly. But unfortunately the same set of students are not so punctual in the Non-MSP schools. Graphical presentation of this information is presented in the graphs below.

Chart 13

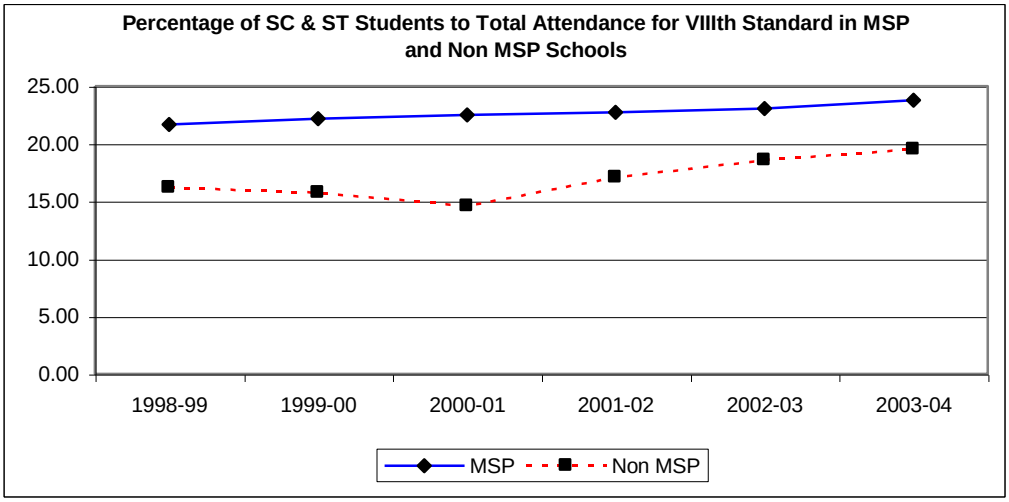


Chart 14

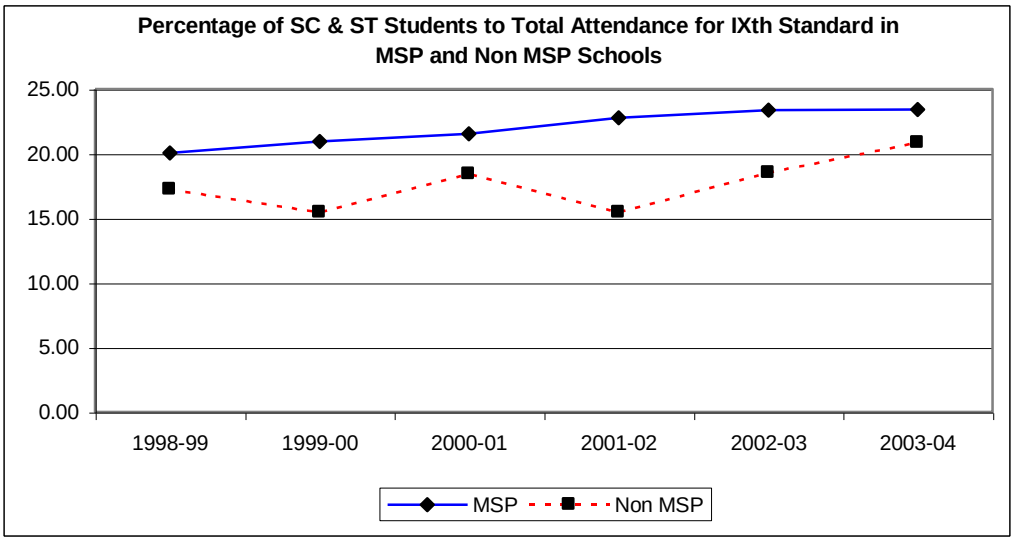
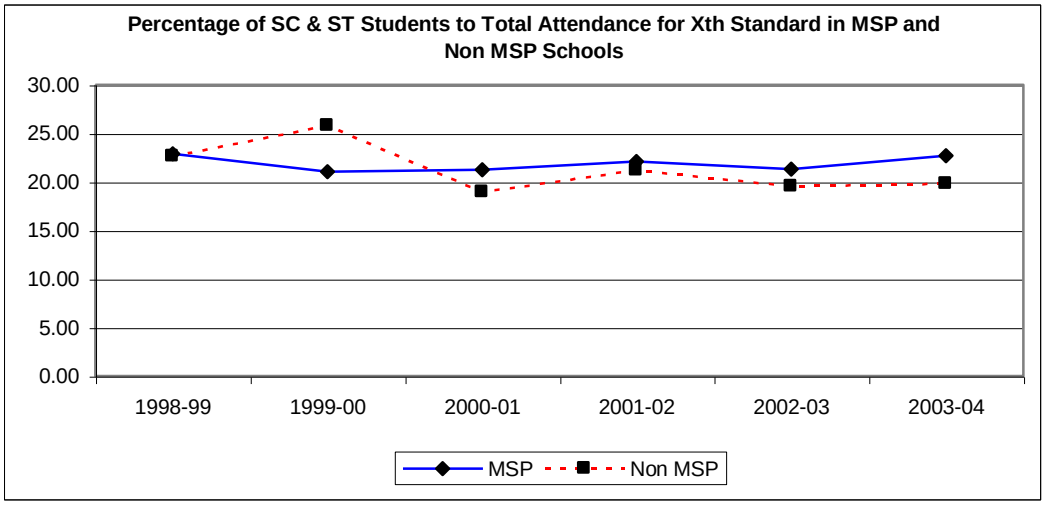


Chart 15

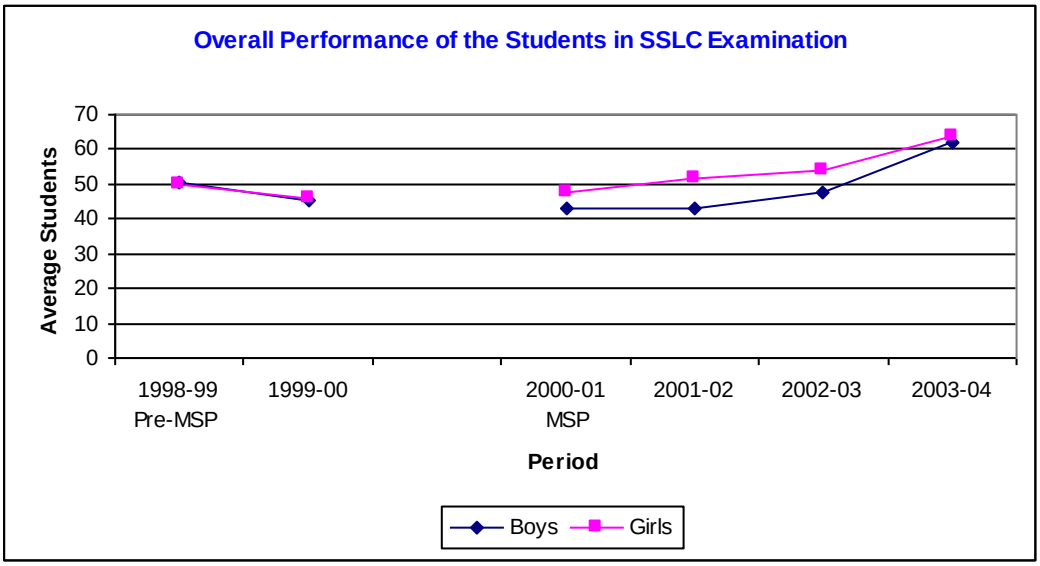


On the whole it appears that the enrollments and attendance have been influenced by the MSP quite favorably. One needs to be careful in attributing the effects on these crucial indicators. However, the qualitative impressions of different stakeholders' opinion on the issue of MSP favorably influencing enrollments and attendance does support the fact that MSP indeed has done a lot on the performance of these indicators.

11. Performance in SSLC Examination:

It is interesting to note from the graph below that in the period prior to MSP both girls and boys were on the same footing as far as performance in the SSLC examination was concerned. However, during the MSP period girls have been doing well in comparison to the boys. The overall performance of both boys and girls has been showing steady increase during the period of MSP which is a encouraging factor and probably the program has made an impact on the learning levels of the student community.

Chart 16



In the following graphs an attempt is made to show the performance of boys and girls separately for the MSP and Non-MSP schools. As far as boys are concerned, the performance seems to be better in the MSP schools than the Non-MSP schools. This would also reflect upon the additional inputs provided to the students through the computer-aided education. However the same argument does not seem to be favoring the girls' students. For example in the initial years the MSP schoolgirls' were performing

much better than the girls Non-MSP schools. But over the period of time even the Non-MSP girls have been performing as equally as the girls in the MSP schools. The reasons for such a scenario could be many and the need is felt to have in depth ethnographic studies in this regard.

Chart 17

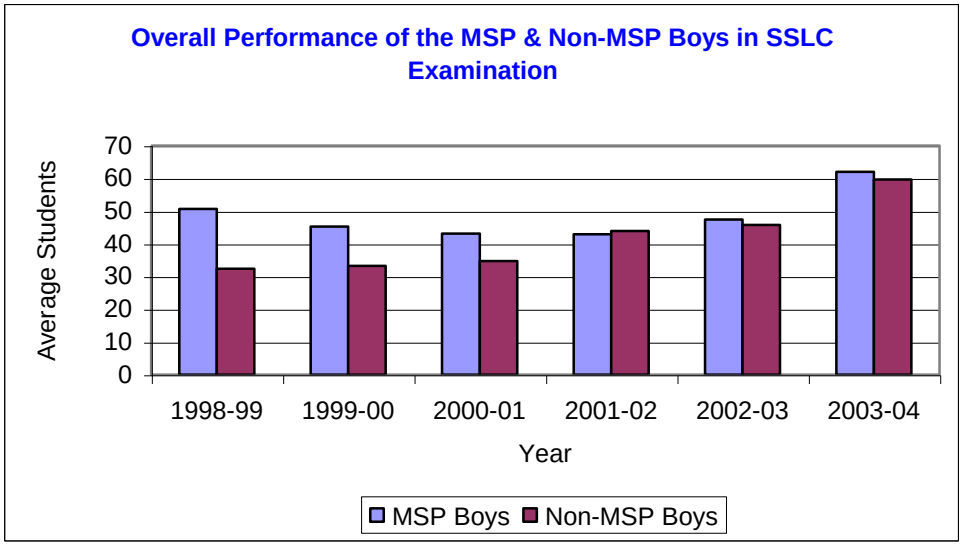
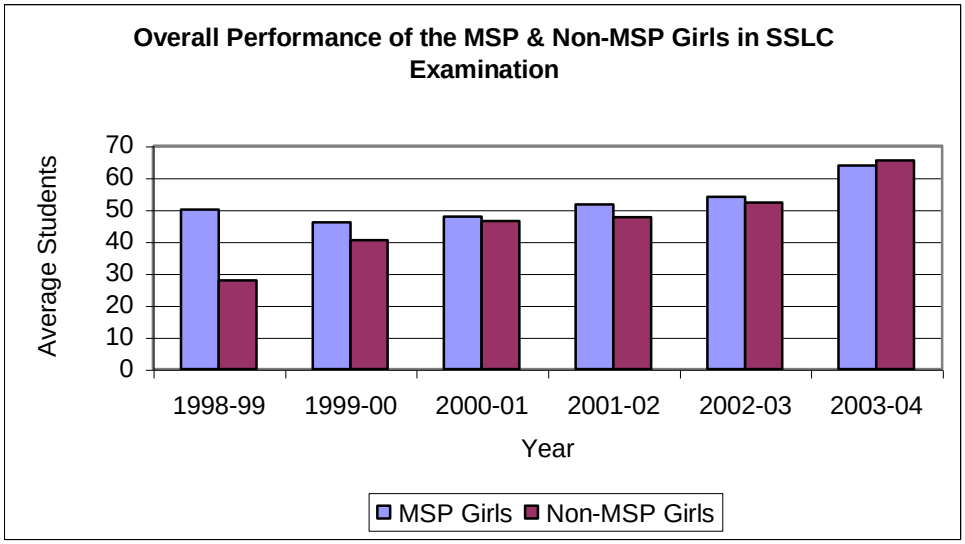


Chart 18



From the discussion presented above, it is quite clear that the major indicators like enrollments, attendance and performance at the SSLC have been favoring the MSP program. It is interesting to note that the favorable impact has been on the weaker sections of the society as well. Thus, the MSP has been instrumental in attracting as well as retaining the students at the schools. This could be the major impact of the program.

Coupled with this the performance of the students at the SSLC examination also seems to be tilting towards MSP, which is an achievement indeed.

12. Views of Computer Aided Teachers

As part of the evaluation process of MSP an attempt was made to get the views of the different stakeholders of the program. In the following discussion an attempt is made to present the views of the Computer Aided Teachers in selected schools.

The survey of teachers of the MSP schools has provided crucial information regarding various empirical aspects of the program. In the following an attempt is made to highlight the major responses of the teachers who are managing the computer aided education at the schools.

The language of computer education was considered to be the major handicap when computer education was introduced.. Every one believed that computers would require English language for imparting the knowledge. But the efforts by the DSERT to produce and distribute textbooks in the regional language deserve appreciation. For example the following chart shows that in about 81 per cent of the schools there were Kannada medium textbooks being used for teaching as well learning. Similar position is found with regard to the language of computer-aided education. This would indicate the fact that computer aided education is made as friendly as possible to the student community. The following charts would bring out this fact more clearly.

Chart 19

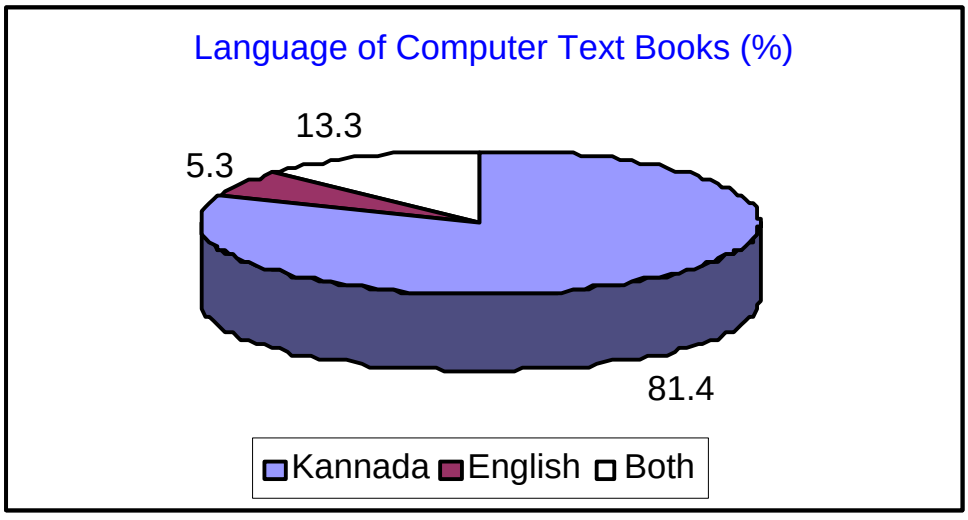
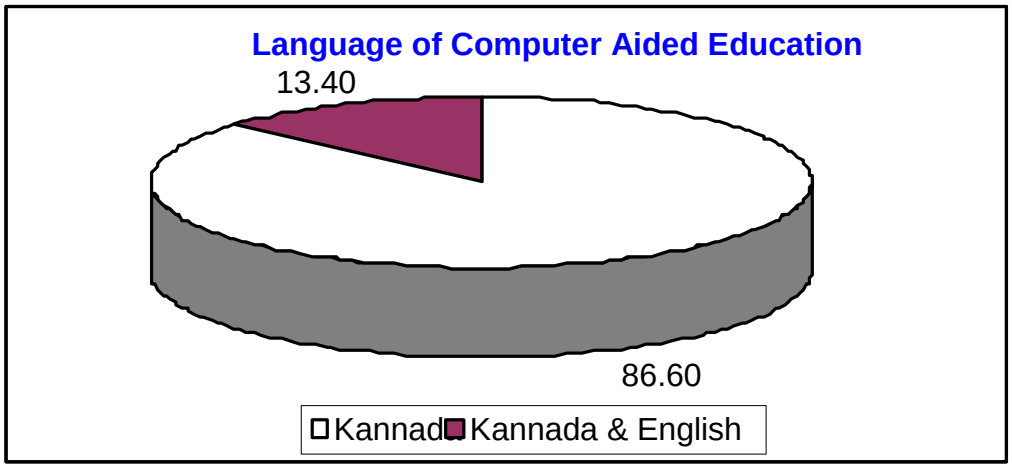


Chart 20

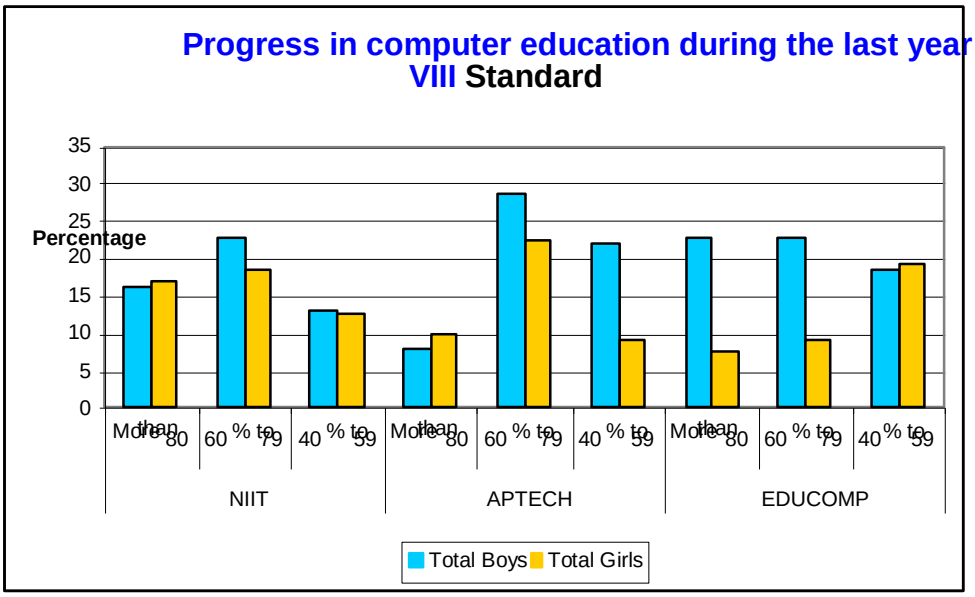


The performance of the students was examined by taking into account the percentage of marks obtained in the concerned class examinations. Different groups of percentages considered were as noted below.

- Students passing with greater than 80 percentage of marks
- Students passing with 60 to 79 percentage of marks
- Students passing with 40 to 59 percentage of marks

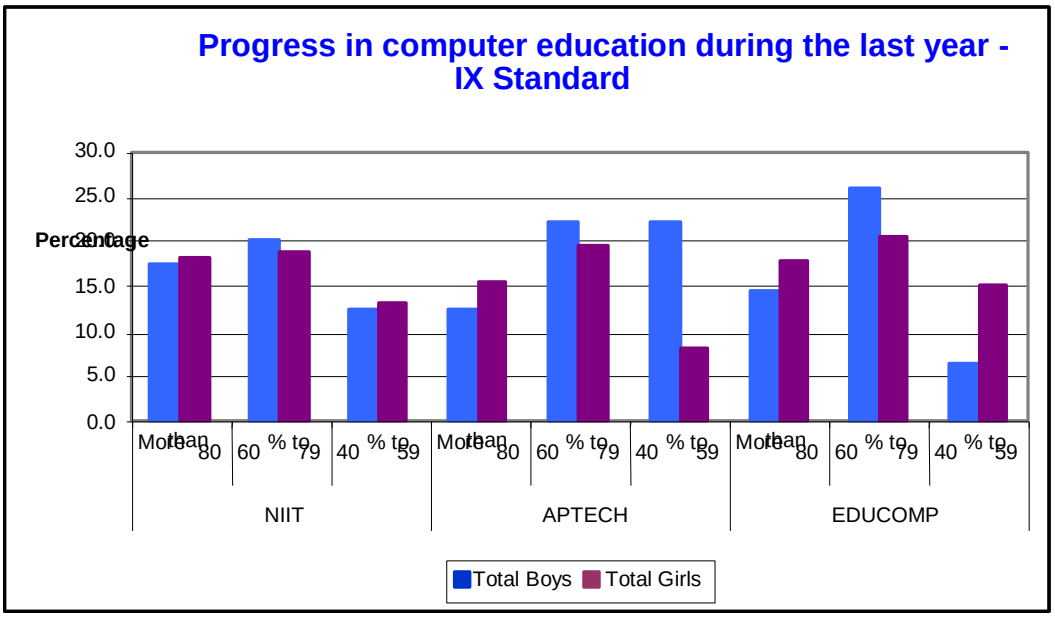
The provider wise information on this indicator shows that APTECH and EDUCOMP schools are doing well for the eighth standard. For the higher percentage levels the boys are doing well as compared to the girls.

Chart 21



For the ninth standard the picture seems to be a mixed one for all the providers. But the interesting fact is that majority of the students are found in the higher percentage category which could well indicate that the students are performing better in the recent year. One may as well attribute this to the new wave of teaching the subjects through computer-aided education. However, a longitudinal study in this regard would be throwing more light on the issue at stake. Due to limitations of resources and time the present study could not make much in roads into the matter.

Chart 22



Views of the computer aided teachers has clearly brought out the fact that the language issue of computer education had been effectively dealt with by the officials who are in charge of implementing the program. The performance of the students also seems to have improved due to the teaching of subjects through the help of computers.

13. Views of Computer Instructors

The survey also covered the computer instructors in the selected MSP schools. Various issues relating to the program were included in the questionnaire. The opinion of the instructors should provide broad pointers about the strengths and weaknesses of MSP due to the fact that they are the major actors in the framework of MSP.

13.1 Software's Taught

At the outset we tried to get the information relating to the soft wares that they teach in the schools. We can note from the table below that barring MS Excel and Internet almost all the instructors have been teaching MS Windows, MS Word and Paint Brush. As far as EDUCOMP is concerned even MS Excel is being taught to the extent of hundred per cent and it has also doing well with regard to the provision of internet.

Table 7
Software taught as part of MSP (%)

PROVIDER	Windows	MS-Word	MS-Excel	Paint Brush	Internet	Any Other
NIIT	100.0	100.0	97.5	100.0	92.6	72.8
APTECH	100.0	100.0	96.6	100.0	72.4	44.8
EDUCOMP	100.0	100.0	100.0	100.0	96.0	0.0

13.2 Impediments of MSP

The opinion was also sought to know the impediments faced by the instructors with regard to the following issues as stated in the table below.

Table 8
Opinion of Computer Instructors regarding constraints under MSP (%)

PROVIDER	Non-Performance of Software	Non-Performance of Hardware	Inadequate Time for Computer Classes	Head Teacher and other Teachers are not co-operative	Irregular Power Supply	No.Generator
NIIT	6.2	8.6	13.6	3.7	60.5	51.9
APTECH	10.3	27.6	20.7	10.3	48.3	48.3
EDUCOMP	0.0	0.0	0.0	0.0	25.0	75.0
Total	**7.0**	**13.2**	**14.9**	**5.3**	**56.1**	**51.8**

From the table one can note that non-performance of the soft ware was not a serious problem. On the whole about 7 per cent of the instructors felt that soft ware was

non functional. Similarly hard ware was non functional in bout 13 per cent of the schools and the major problem seem to be in the schools covered by APTECH. The major problems faced by the instructors seem to be on account of irregular power supply and non-availability of generator. This problem is quite acute in the schools covered by NIIT. However EDUCOMP seems to have managed this issue with lesser number of schools reporting the problem of irregular power supply. Our discussions with the instructors especially in rural and far flung areas indicated that the power supply was the major impediment and measures need to be taken immediately to overcome the problem.

13.3 Supply of Text Books

One important aspect of the supply of textbooks was relating to the language of the textbooks. It is encouraging to find that most of the textbooks were found to be in the regional language of Kannada as depicted in the table below. Thus the efforts of the DSERT in regard need appreciation.

Table 9
Satisfaction of Teachers on supply of Computer Text Books (%)

PROVIDER	Sufficient	Not- Sufficient
NIIT	87.7	8.6
APTECH	89.7	10.3
EDUCOMP	75.0	25.0
Total	**87.7**	**9.6**

Table 10
Medium of Text Books in the Schools (%)

PROVIDER	Language		
	Kannada	English	Both
NIIT	85.2	2.5	12.3
APTECH	86.2	3.4	10.3
EDUCOMP	50.0	0.0	50.0
Total	**84.2**	**2.6**	**13.2**

13.4 Computer Down Time

Computer down time is the major worry for the providers as well as the schools. The data gathered shows that on an average the computer down time is found to be around 21 days. EDUCOMP seems to be doing well in this regard with lesser down time

for computers. Down time for a printer was found in APTECH schools and the average number of such days was 15 days.

Table 11
Duration of Equipments / Accessories non-functioning

PROVIDER	Average No of days computer remained not-working	Average No of days Printer remained not-working
NIIT	26	0
APTECH	28	15
EDUCOMP	10	0
All Average	21.3	153

13.5 Repair and Maintenance

The encouraging absence of down time of computers was probable due the immediate attention paid to the repair and maintenance needs of the schools with regard to the systems and the printers. In majority of the cases the repair work was attended immediately or within a weeks time. However incidents of attending and repairing the instruments and equipments was also considerably high ranging from fifteen days or more. The need is felt to decrease such cases in order to speed up the upkeep of the materials supplied to the schools. The following table depicts in detail the time consumed for the visits by the concerned personnel as well as time taken to rectify the malfunctioning units.

Table 12
Status of attending the repair work of computers by providers (%)

PROVIDER	When did they visit				
	Immediately	Within a week	Within 15 days	More than 15 days	Not at all
NIIT	39.5	32.1	18.5	4.9	0.0
APTECH	20.7	27.6	10.3	27.6	3.4
EDUCOMP	50.0	25.0	25.0	0.0	0.0
	When did they repaired				
NIIT	37.0	44.4	8.6	1.2	1.2
APTECH	27.6	20.7	17.2	20.7	3.4
EDUCOMP	50.0	25.0	25.0	0.0	0.0

As a corollary of the above information, we tried to know the status of repairs based on the satisfaction expressed by the instructors towards such repair works. It can be observed from the table below that about 95 per cent of the instructors from NIIT schools

were satisfied with the repairs. The respective figures for APTECH and EDUCOMP were 69 and 50 per cent. This would indicate the fact that both these providers are requited to pay greater attention to the upkeep of the systems supplied to the schools.

Table 13
Satisfaction with regard to repairs (%)

PROVIDER	Satisfied	Not Satisfied
NIIT	95.1	3.7
APTECH	69.0	24.1
EDUCOMP	50.0	50.0
Total	**86.8**	**10.5**

13.6 Internet Facility

The most important component of the MSP was to provide Internet facility to the schools selected under the program. The survey of schools has indicated the picture as presented in the following table as far as the provision of Internet to the schools. But before reading the results, it needs to be borne in mind that the provision of Internet basically depends on the availability of telephone line in the vicinity of the school, which would be provided by the BSNL. Especially in the remote and far flung areas it would be very difficult to provide such facility and thus the provision of Internet may get affected on account of the factors beyond the capacity of the providers of computer education as well as DSERT. We can note from the table below that EDUCOMP has provided Internet facility to the schools covered under the study. APTECH seems to be lagging behind with about 62 per cent of the schools having Internet and NIIT is in a somewhat better position with the coverage of 85 per cent of the schools. On the whole it is important to note that about 80 per cent of the schools had Internet facility which indicates the gap to be covered in this regard.

Table 14
Internet Connectivity Status (%)

PROVIDER	Connected	Not-Connected
NIIT	85.2	14.8
APTECH	62.1	37.9
EDUCOMP	100.0	0.0
Total	79.8	20.2

In view of the problems associated with the problems with Internet supply for long duration in a day as well as for many days in a year, we wanted to know the opinion of the instructors with regard to the possibility of supplying Internet for 300 days in a year. The responses on the whole indicate that about 49 per cent of them feel that it is

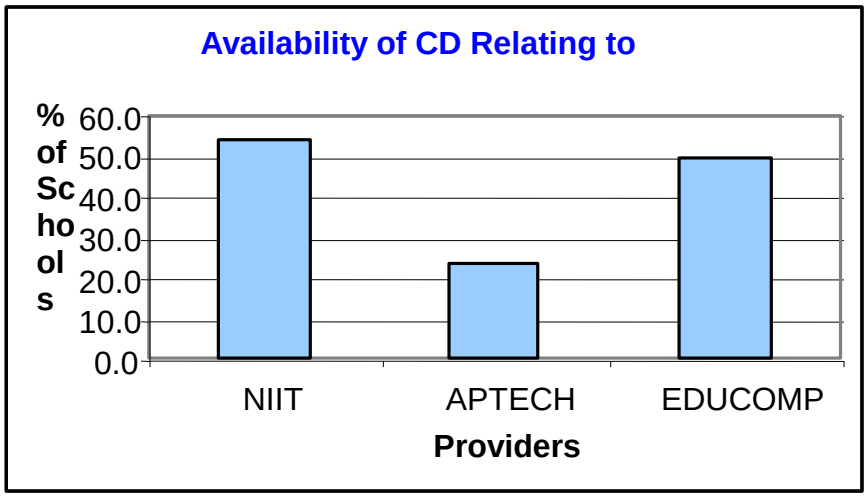
possible to provide Internet for 300 days with 100 per cent responses from EDUCOMP schools. NIIT instructors say that it is possible to the extent of 45 per cent and APTECH to the extent of 51 per cent. This only means that the responses vary according to the place in which they are placed and thus they need to be understood in that background.

Table 15
Status of Provision of Internet Connectivity for 300 Hours per year (%)

PROVIDER	Possible	Not-Possible
NIIT	45.7	45.7
APTECH	51.7	27.6
EDUCOMP	100.0	0.0
Total	49.1	39.5

The Internet related material were copied on the CDs and distributed to those schools where the Internet facility was not available in a effective manner. The supply of such CDs varied across the schools and from the chart below we can note that APTECH schools were placed in a disadvantageous position with about 22 per cent of the schools having such CDs. However, the respective percentages for NIIT was 55 and EDUCOMP was 50. Thus the provision of such CDs does not seem to be very effective and in the background of problems associated with the Internet connection, it would be beneficial to the students and the schools if efforts are initiated to supply such CDs at the earliest.

Chart 23



14. Computer Instructors and MSP

An attempt was made to know the opinion of the computer instructors with regard to the effectiveness of the MSP. The instructors who are engaged in the computer education per se would have gained sufficient insights about the issues that the MSP would touch upon and their view in this background would be quite useful to assess the impacts that the program has made till date. Following table gives the views of Computer Instructors on the following major issues.

Table 16

Opinion of Computer Instructors on the following (%)

Measures	Provider			
	NIIT	APTECH	EDUCOMP	Total
Increasing in Enrollment				
Very Effective	76.5	65.5	50.0	72.8
Average	17.3	13.8	25.0	16.7
No impact at all	1.2	6.9	25.0	3.5
Increasing in Attendance				
Very Effective	79.0	69.0	50.0	75.4
Average	14.8	10.3	25.0	14.0
No impact at all	1.2	3.4	25.0	2.6
Reducing Drop-out				
Very Effective	65.4	34.5	50.0	57.0
Average	22.2	10.3	25.0	19.3
No impact at all	4.9	24.1	25.0	10.5
Attracting Students to the Schools				
Very Effective	84.0	89.7	75.0	85.1
Average	13.6	10.3	25.0	13.2
No impact at all	0.0	0.0	0.0	0.0
Learning Levels of Students				
Very Effective	79.0	79.3	100.0	79.8
Average	17.3	17.2	0.0	16.7
No impact at all	0.0	0.0	0.0	0.0

Majority of the instructor feel that the effect of MSP in increasing enrollment is quite effective. The respective percentages of different providers like NIIT, APTECH and EDUCOMP favoring increase in enrollment were 76, 65 and 50. Marginal number of the respondents felt that the program would have an average impact on enrollments. Same viewpoints were applicable to the issue of increasing attendance at the schools as well. Again majority of the instructors supported the idea that the program is effective in reducing the dropouts. Interestingly there seems to be a almost unanimous opinion that the program attracts children to the schools. Thus the major positive side of MSP from

the view point of instructors is that it not only attracts the students to the schools but also retains them in the school.

Despite such problems the instructors have felt that they are quite satisfied by the MSP in general. About 74 to 82 per cent of the instructors feel that the program satisfies them. Level of dissatisfaction seems to be quite negligible. However, the level of satisfaction with regard to the supply and adequacy of computer textbooks seems to be manageable for schools under NIIT and APTECH. About 25 percent of the instructors under EDUCOMP schools felt that the computer textbooks were not sufficient. On the whole the issue of supplying adequate number of textbooks needs to be addressed effectively. Our field team learnt that in few schools the Head Masters were arranging these things by borrowing books from the students who had completed the course and in some cases there were instances of photocopying the books to be supplied to the students.

Table 17
Nature of Satisfaction of Computer Instructors (%)

PROVIDER	Very Much Satisfied	Somewhat Satisfied	Dissatisfied	Very Much dissatisfied
NIIT	74.1	23.5	1.2	0.0
APTECH	82.8	13.8	0.0	6.9
EDUCOMP	75.0	25.0	0.0	0.0
Total	76.3	21.1	0.9	1.8

In sum the computer instructors feel that they are satisfied by the MSP. Their views are important because of the fact that they are the people who are implementing the program at the school level and their interactions at the school would have given them good amount of insights about the impact of the program. Teaching of different soft wares seems to be in good shape and the instructors also feel that crucial indicators like enrollments, attendance and performance of students have been doing well. Their opinion with regard to the repair and maintenance of equipments is encouraging and the supply of textbooks in local language is also quite student friendly. However, they have also expressed some concerns about the regularity of power supply, internet facility in far flung areas and supply of internet based CDs. Thus there is a need to look into these areas to plug in the loopholes that exist in certain pockets of the state.

15. MSP: Views of the Students

As part of the evaluation of the MSP an attempt was made to elicit the views of the students about the program. The reflections from the survey would in a way provide us the information about the perceptions of the students for whom the program is really implemented. In the following paragraphs an attempt is made to present the major findings from the students' survey.

15.1 Awareness of MSP among Students

At the outset we wanted to know the awareness among the students regarding the MSP in the selected schools. More than 98 per cent of the students under the schools covered by APTECH knew about the program. This was followed by NIIT (97 %) and EDUCOMP, which was to the extent of about 95 per cent. This clearly indicates that majority of the students were aware of the program.

The average classes attended by the students are an important indicator because it does reflect on the satisfaction of the norms stipulated in the agreement with the agencies providing computer education. With regard to the schools covered by NIIT and APTECH we can notice that students on an average attended 3 classes in both theory and practical. However ECUCOMP was able to provide only two classes, which needs remedial action by the agency.

Table 18
Average Classes attended by the students (per week)

Provider	Theory	Practical
	Average Classes attended	Average Classes attended
NIIT	3	3
APTECH	3	3
EDUCOMP	2	2
Total	**3**	**3**

15.2 Students and Availability of Computers

On an average the computer labs in the schools covered under MSP keep working for about seven hours. The duration of working hours seems to be somewhat satisfactory, but at the same time one also feels that the guideline of working in the computer lab even after schooling hours is not maintained as per the opinion of the students.

Table 19
Average Hours of working of Computer Lab

Providers	Average Hours kept open
NIIT	7.0
APTECH	7.1
EDUCOMP	7.4
Total	**7.1**

The program of MSP basically aimed at imparting various computer skills to the students. If one looks at the table below, it is quite clear that the program has succeeded in doing so. However there are differing levels of skills imparted for different types of computer use. For example, the skills in operating MS Word are quite significant and range between 83 to 88 per cent between different providers. However the teaching of MS EXCEL seems to be not so effective and much distance needs to be covered in this regard. Operating Paint Brush is another achievement of the program and greater number of students have expressed the feeling that they could operate this particular software. The most striking shortcoming is found in the domain of Internet and operating E-Mail facility. The smaller proportion of students acquainted with these skills could be attributed to the larger issue of provision of telephone facility itself to the schools, which needs to be addressed with immediate effect. By and large the students opinion reflects that the program has made considerable impact in imparting computer skills to the students.

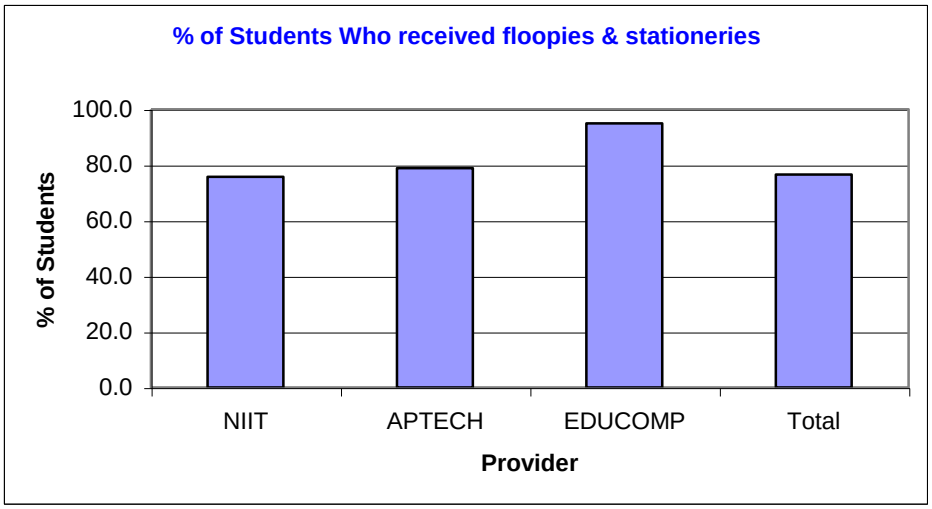
15.3 Use of Computer by Students

Table 20
Skills gained by students in Computers

Provider	Open MS Word a file	Typing in MS word	Saving MS World file	Open Excel file	Excel Data Entry	Save Excel File	Paint Brush	Internet Browsing	Sending and Receiving Email	Any Other
NIIT	86.9	88.1	84.3	23.8	16.9	23.4	95.0	29.0	22.8	0.8
APTECH	84.4	86.1	85.0	37.2	24.4	35.0	91.1	15.0	13.9	0.0
EDUCOMP	83.3	86.1	83.3	16.7	16.7	19.4	88.9	16.7	13.9	2.8
Total	**86.1**	**87.5**	**84.4**	**26.8**	**18.8**	**26.1**	**93.8**	**24.9**	**20.1**	**0.7**

Students are to be supplied with floppy and stationery by the agencies. The students' view on this issue does not seem to be encouraging. For example APTECH provided these things to about 70 per cent of the students and EDICOMP provided to the extent of about 95 per cent. NIIT was not so effective in the provision of these materials to the students. Our discussion with the students also revealed that there were instances of floppies being redistributed to the new comers, which were recovered from the students who passed out. Based on the Students' version of these supplies there is a case for improvement by the agencies.

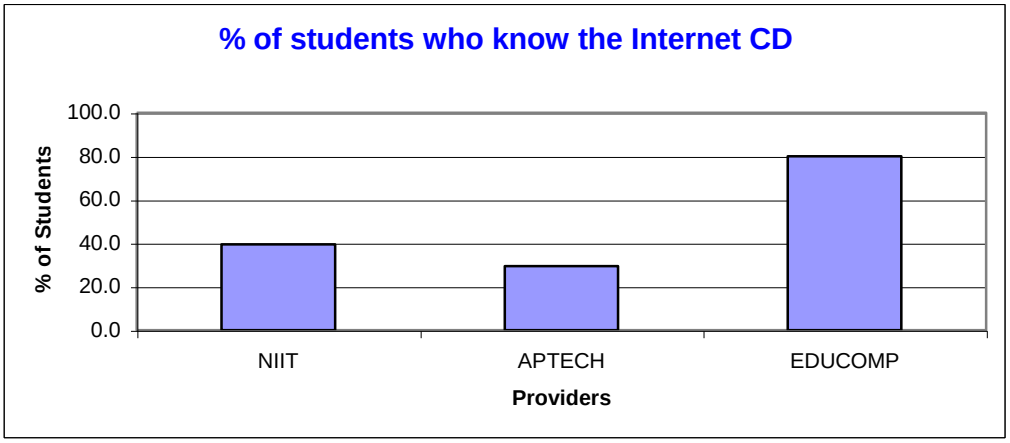
Chart 24



15.4 Students and Internet Facility

For those schools where the provision of Internet was difficult due to the problems associated with telephone connections, the departments had initiated the process of copying the material on the net to CDs and distribute the same to the schools for the benefit of the students. In this background, the study team made an attempt to know the availability of such CDs in the schools and awareness of the students about such facility at the schools. The following chart depicts such awareness among students in the selected schools. One can observe that in the schools covered by NIIT about 40 per cent of the students were aware of such CDs and the same was about 80 per cent in the schools covered by EDUCOMP and APTECH had a lesser share. It appears that much effort was not made to use and acquaint the students with regard to such useful study material by the students.

Chart 25



15.5 Learning by Students under MSP

Finally we also tried to know in what way MSP has helped the students with regard to their overall learning and participation in school activities. About 97 to 100 per cent of the students felt that learning was interesting though the computers. About 84 to 91 per cent of students felt that their confidence level has increased. Majority of the students have also opined that their absenteeism has declined, their pace of learning ahs increased, their performance in learning other subjects through computer has improved and they also feel to devote more time to the studies. These are depicted from the table below.

Table 21
What MSP Means to Students?

PROVIDER	Interesting	Confidence level increased	Absenteeism has declined	Learning Easier	Performance in the subjects and overall performance increased	Desire to study longer hours
NIIT	97.0	90.3	79.4	88.5	78.8	79.0
APTECH	96.1	84.4	81.1	86.7	73.3	73.9
EDUCOMP	100.0	91.7	77.8	88.9	75.0	69.4
Total	**96.9**	**88.9**	**79.7**	**88.1**	**77.2**	**77.2**

The views of the students on MSP have brought out the fact that greater numbers of students are aware of the program. It also seems that there is considerable improvement of the skills of the students on account of the computer and computer aided education. The attitudes of the students towards learning and participation in the activities of the school have also shown considerable improvement. The areas, which need

improvement, could be the supply of Internet based CDs and provision of other inputs to the students. On the whole the students community seem to be quite satisfied and they also enjoy this new and innovative method of teaching and learning.

16. Views of MSP Stakeholders at different levels

In the following paragraphs an attempt is made to summarize the qualitative information obtained through the discussion with various officials involved in MSP like Block Education Officers, DDPIs, Principals and Lecturers of DIETS, the officials of the computer agencies and lastly the key personnel at the state level who are in charge of the MSP.

16.1 Role of the Computer agencies in managing the MSP?

All the three agencies have been effective in providing services and have been active in attending the problems. They have also provided the faculty with good experience. But in some remote areas the problems persist with regard to the up keep of the equipments and provision of electricity and Internet. However, the agencies are trying hard to do away with the problems. Such a prompt actions from the agencies is primarily due to the fear of penalty measures, which would be initiated by the DSERT. Thus the role of the DSERT in putting the things back on the track attracts appreciation.

16.2 Feedback mechanism through quarterly evaluation of MSP

Quarterly evaluation seems to be effective and it brings out the shortcomings experienced by the schools. Nodal officers take prompt actions to initiate the corrective measures for those issues highlighted through such evaluation. Analyses of the information gathered through questionnaires as part of such evaluation needs to be utilized fully.

Taking stock of the reports, the nodal officers would act immediately and extend all kinds of co-operation to the schools. The chain of activities right from the school to the DIET and up to the state level seems to be quite effective in providing necessary assistance to schools in correcting the deficiencies.

16.3 Interaction between the Providers, Head masters, Teachers, SDMCs and DIET.

There is a regular exchange of views and experiences among Head Masters of MSP schools, Principals of DIETs and representatives of computer agencies. The outcome of such interaction seems to be effective in addressing the problems faced by the MSP schools. Some of the Lecturers who are looking after MSP felt that the interaction between the agencies, Head Masters and the DIET is not very satisfactory and the agencies play hide and seek with regard to the provision of internet on the server and other PCs. This issue needs to be resolved to help the students to have access to Internet for a longer period of time. They also felt that sometimes the irregularity of payment to the agencies is affecting the services by the agencies. There were instances where the agencies did not provide original CDs to the schools, which have created problems in using the concerned soft wares.

16.4 Impact of the MSP

a. Enrollment

The enrollment seems to have increased significantly in MSP schools. Almost all the respondents have unanimously endorsed which could be considered as a positive impact of the MSP

b. Attendance

Attendance of students on account of MSP has relatively improved in the schools. Most of the respondents have opined that the computer and computer based education at the schools has attracted students to the schools on regular basis. It was also observed by the school teachers as well as other block and district level officials that students prefer to stay at the schools even after the school hours. This indicates another significant achievement of the MSP.

c. Dropouts

The drop outs scenario has also considerably improved. The obvious effect of the above two factors has naturally brought down the drop out rate at the schools. Of course one cannot easily attribute the reduction of drop out or improvements in enrollment and attendance, but nevertheless the wise judgment of the responsible people in charge of the programme does form the basis for such inferences.

d. **Examination**

Many of the officials felt that the performances of the students have shown improvement in the examinations relating to the subjects as well as in computer related tests.

16.5 Opinion of the Officials and Teachers on the following:

16.5.1 Regularity of computer instructors at schools

Instructors are regular and they also do their duty effectively was the majority opinion. However there were instances of greater turn over of instructors, which have caused some concern at the school levels.

16.5.2 Training of Computer Instructors

Majority of the instructors are duly qualified and they have reasonable amount of training in this regard. The skills of such instructors seem to be quite effective in imparting the knowledge to the students.

16.5.3 Training of computer aided teachers

Most of the regular teachers have received training and the training by INTEL seems to be the center of attraction for them. The training is conducted during the vacations and such training satisfies majority of the teachers. One important aspect in this regard is that the Head Master should also receive training so that he/she can play more effective role in promoting the cause of the programme.

16.6 Major Concerns relating to supply of the following

16.6.1 Hardware to MSP schools

Hardware supplied at the beginning of the programme was good enough. But there are problems with regard to the supplies of floppies to the students. Every year floppies are not supplied and in place old ones are being re-distributed to the students. In some schools the net working problems exist

16.6.2 Software to MSP schools

The supply of CDs to schools containing soft wares seems to be all right. But problems persist with regard to the adequacy of such CDs on account problems with regard to the networking. In many cases anti virus kits are not supplied to the schools.

16.6.3 Telephone connection

The problem of supply of telephone connection to schools is acute in rural areas. In taluka and district places there is satisfactory situation as far as telephone connection is concerned.

16.6.4 Internet connection

The similar situation exists with regard to the Internet facility as well. The issues of extending the Internet to other PCs from the server exist due to problems faced by the proxy extensions.

16.6.5 Effective electricity supply (Un interrupted)

Uninterrupted power supply is the major problem and needs immediate attention. Though in some schools generator is supplied, there are many issues relating to the maintenance of it as well as procurement of diesel/petrol to the genset. Some people have opined that the possibility of supplying a solar based power system would be much more effective. The cost effectiveness of such option needs to be considered.

16.6.6 Repair and maintenance

Prompt and effective attention to repair and maintenance is found in majority of places. However due to dearth of anti virus packages the computer down time has increased. In some remote places and in majority of places of the districts of north Karnataka, the attention paid to repair and maintenance is not very effective which needs immediate attention.

16.6.7 Performance of students in computer education

Students do have acquired necessary skills as far as operation of computers are concerned. They have also learnt application of computers to their course work. The

officials believe that there is a sea of change in the way students learn and report the subjects after the introduction of the scheme.

16.6.8 Performance of students in computer aided education

In majority of the schools students have learnt to use subject related CDs and they have also been acquainted with the use of computers in their project work. More time and space at the schools is needed to enlarge the students participation in this regard.

16.7 Reasons for the best performances under MSP

It is a general experience that wherever the Head Masters have taken a lead role in implementing the computer-based education; the success rate of the MSP has been good. The proactive role of the head of the institution and the teachers seems to be crucial in the effectiveness of the program. But, unfortunately in few cases though the staff is enthusiastic there are certain technical problems like effective telephone connection and uninterrupted power supply which have hindered the progress of the scheme. But there was also a feeling among the teaching community that the scheme is something exogenous to their system and in this regard efforts should be made to internalize the scheme so that it would be able to yield greater positive results.

16.8 The following are the major bottlenecks / suggestions with regard to the MSP.

- Though there is a training a component under MSP it needs to be more comprehensive and the Head Master of the schools also needs training with regard to the use of computers in teaching
- The evaluation by the Engineering colleges should also test the skills gained by the students with regard to computer education.
- Telephone connection and internet facility could be the major impediments and steps should be taken to improve the situation especially in rural areas
- The power supply is another area where much needs to be improved. Some schools have suggested for the supply of solar-based power supply instead of a generator.
- There is a need to provide more furniture and additional room to the schools for the purpose of MSP activities.

- Since many agencies have started the process of terminating the instructors under the pretext of the end of MSP and hence the instructors are loosing interest in the teaching activities. Some sort of continuity needs to be assured to them to sustain their interest.
- Shortage of PCs is also one of the important handicaps faced by the schools
- Medium of textbooks also seem to be significant bottleneck and effective number of text books each year need to be supplied to the schools.
- Since there are problems with regard to the supply of Floppies, CDs, Printing paper etc., the Head Master of the school needs to be given the authority and financial powers to procure these things.

Opinion of the officials at different levels has really brought an array of strengths and weaknesses of the MSP. We believe that such viewpoints are quite crucial and they would be instrumental in taking forward the efforts in strengthening the extended phase of MSP with greater coverage.

17. Impact of MSP on SSLC Examination Results:

Another dimension of understanding the effectiveness of MSP is to measure the performance of students who appeared for the SSLC examinations. Thus, in order to understand the impact created by the MSP, an attempt was made to assess the secondary examination results across the selected MSP and Non MSP schools for the years 2004, 2005 and 2006. The data on SSLC results were collected from the Karnataka Secondary Education Examination Board, Bangalore. The analysis presents the cross comparisions between the results of MSP schools and the non MSP schools. The attempt tries to review the status of students passing out of 10^{th} standard from these schools precisely during the years 2004 and 2005.

17.1 Percentage of Students passing in different ranges. :

Data collected for this purpose pertains to 2004, 2005 and 2006. It is incomplete for the year 2006 for various reasons. As such, the comparisons between the performance of MSP and Non-MSP schools was limited to two year data i.e 2004 and 2005. The percentage of passing was considered as the basis, because MSP is implemented in selected Blocks and the absolute numbers are not comparable to each other. It was felt

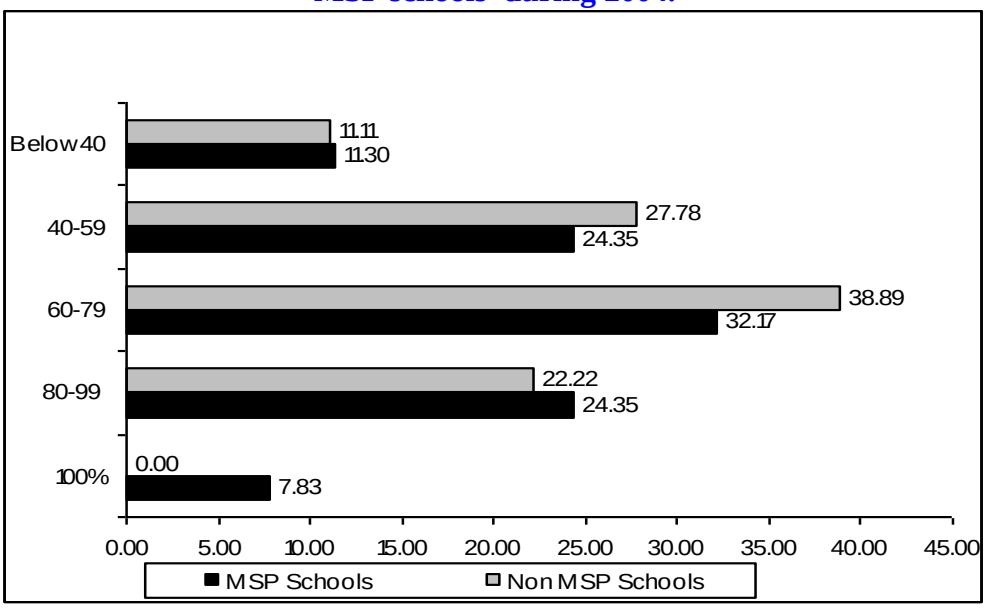
convenient to identify certain percentage ranges and compare the performance of students in SSLC examinations.. For example in a school there could be 100 per cent passes in the SSLC examination and in another school only about 40 per cent of the students may pass out. In order to make the comparison meaningful the following categories of passes were used in the analysis.

Schools reporting 100 per cent passes
Schools reporting 80 to 99 per cent passes
Schools reporting 60 to 79 per cent passes
Schools reporting 40 to 59 per cent passes
Schools reporting below 40 per cent passes

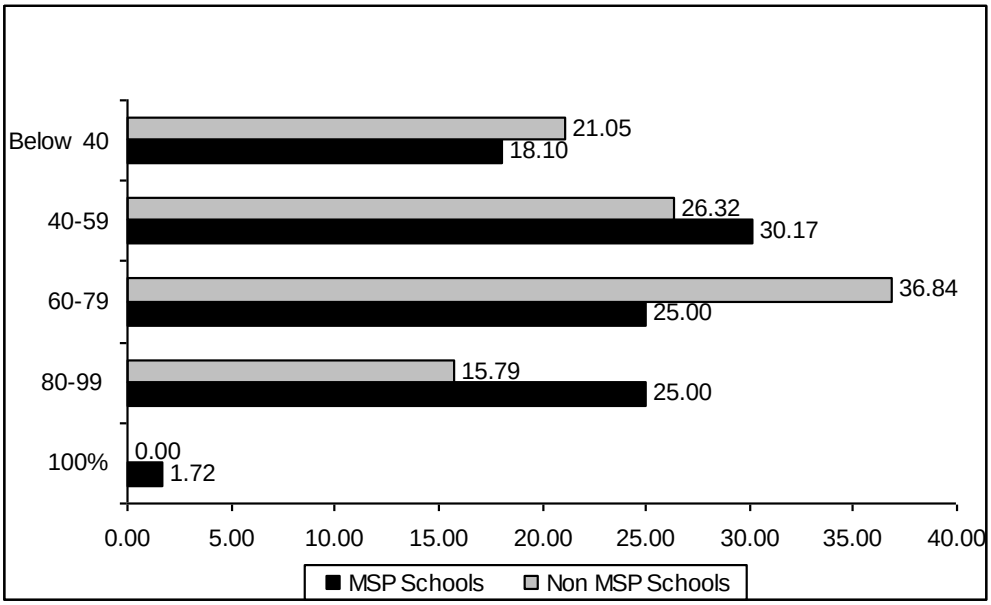
It can be observed from the graphs below that for the years 2004 and 2005 only in the MSP schools 100 per cent passes were reported and unfortunately such level of performance was not found in the Non MSP school category. In the next category of passes as stated above again the MSP schools have done better. For example, in the 80 to 99 per cent of passes one can observe greater proportion of MSP schools than the Non MSP schools. As a corollary of this, in the lower levels of passes naturally the Non MSP schools have greater proportions. Thus it can be observed that the number of students passing in the SSLC examination seems to be better in the MSP schools which certainly reflects on the performance of the student community with the additional input of computer and computer aided education.

Graph -26

Students Passing out SSLC Examinations in different ranges between MSP & non MSP schools during 2004.



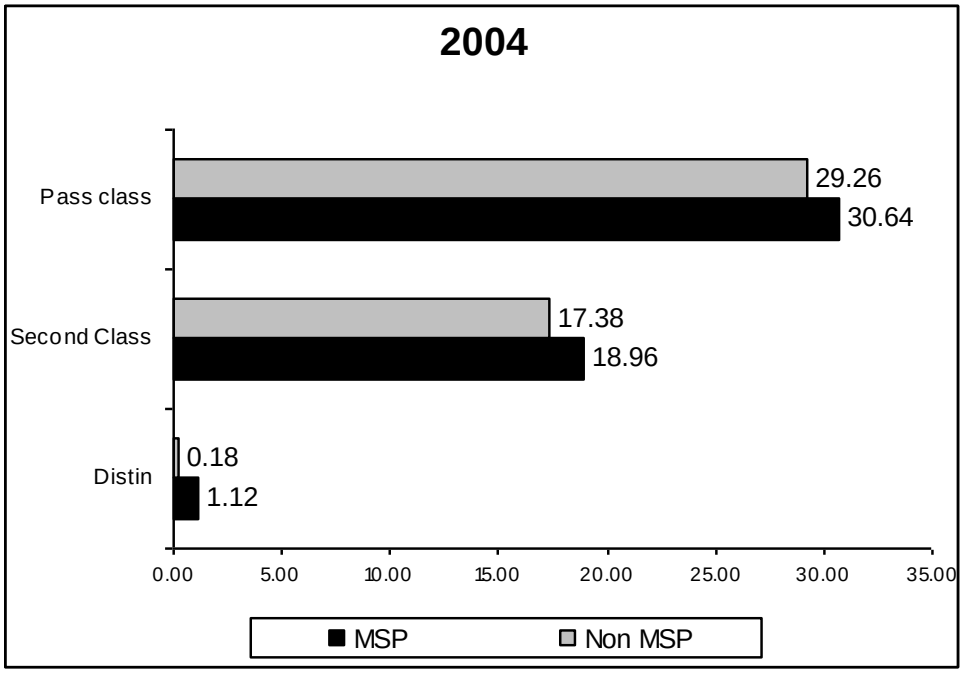
Graph -27
Students Passing SSLC examinations in different ranges from MSP & Non MSP schools during 2005



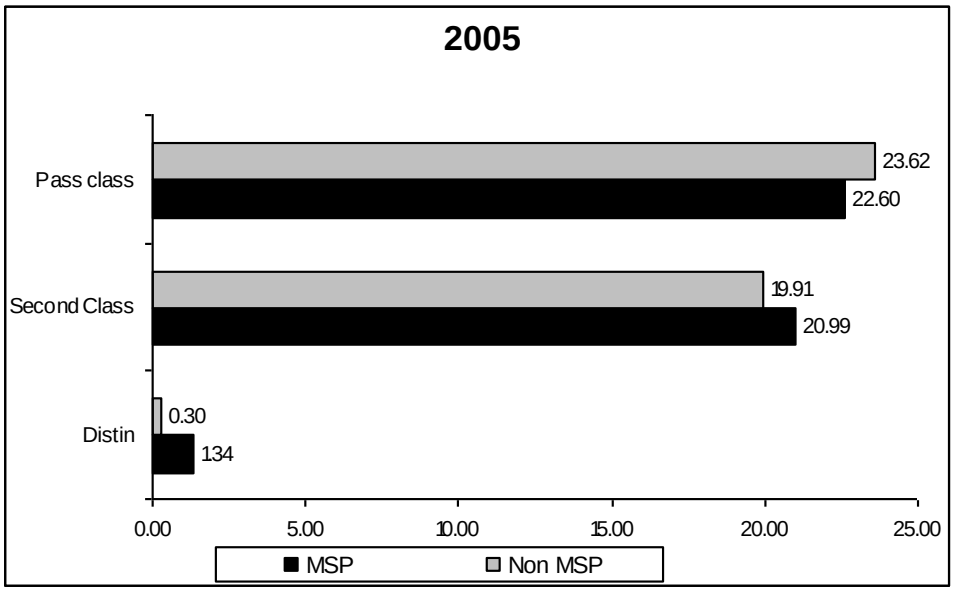
17.2 Level of Passing at the Selected Schools:

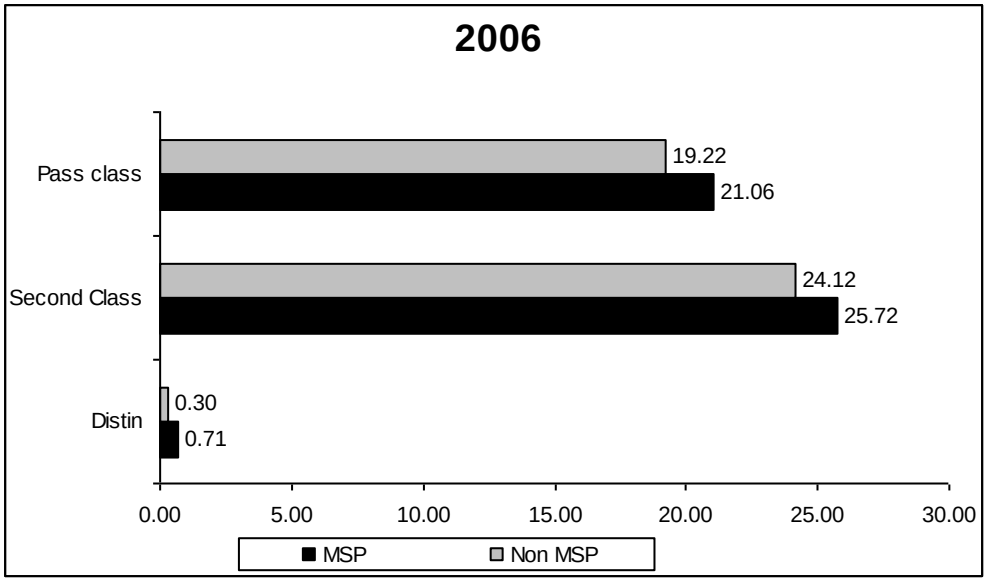
In order to understand effectively the rate at which the MSP & non MSP schools fared in the X standard examinations, the results were classified into pass percentages with distinction, second class and just pass class. **The analysis indicates that for all the three years in question the MSP schools have shown good progress in terms of distinctions and the number of passes. The same trend is not observable in Non MSP schools.** Thus the MSP schools apper to be doing better in pass turnout, especially with second class passes and ordinary passes.. Thus, one can broadly attribute the effect of MSP on performance of the students at the terminal level of examination.

Graph-28
Level of Passing at the Selected Schools



Graph-29
Level of Passing at the Selected Schools





On the whole, it can be inferred that the MSP has brought in positive impact on performance of the students. This is reflective of the fact that distribution of student performance in SSLC examinations is more skewed towards MSP schools than those in the non MSP category. This is substantiated through the analysis of the results of the Board of Secondary Examination in the state.

18. Concluding Observations

On the whole it appears that the MSP has been successful in making a significant impact on the students community. The indicators of enrolment and attendance have shown considerable amount of improvement as compared for the periods prior to MSP and during MSP. It also appears that these indicators are in a better position as compared to the schools in Non-MSP category.

Assets Created Under MSP

Computer Friendly Rooms 1000
Furniture – Tables-12, 286 Chairs-35,858
Equipments:

- Servers-1000
- Computers-10, 286
- Printers-1000
- Modems-1000
- Hubs-1000
- UPS (2KVA)-261
- UPS (3 KVA)-739
- Ceiling Fans-2000
- Tube Lights-6000
- LAN Facility-1000

The program has made considerable in roads in providing Kannada medium learning materials for the benefit of the students. The skills gained by the students with regarding to computer per say as well as computer aided education need appreciation. However, there are certain weak spots, which deserve immediate attention. Regular and uninterrupted power supply and effective internet connection are the two major ones in this regard.

Computer instructors feel that they are satisfied by the MSP. Their views are important because of the fact that they are the people who are implementing the program at the school level and their interactions at the school would have given them good amount of insights about the impact of the program. Teaching of different soft wares seems to be in good shape and the instructors also feel that crucial indicators like enrollments, attendance and performance of students have been doing well. Their opinion with regard to the repair and maintenance of equipments is encouraging and the supply of textbooks in local language is also quite student friendly. However, they have also expressed some concerns about the regularity of power supply, internet facility in far flung areas and supply of internet based CDs. Thus there is a need to look into these areas to plug in the loopholes that exist in certain pockets of the state.

Views of the computer aided teachers has clearly brought out the fact that the language issue of computer education had been effectively dealt with by the officials who are in charge of implementing the program. The performance of the students also seems to have improved due to the teaching of subjects through the help of computers.

The views of the students on MSP have brought out the fact that greater numbers of students are aware of the program. It also seems that there is considerable improvement of the skills of the students on account of the computer and computer aided education. The attitudes of the students towards learning and participation in the activities of the school have also shown considerable improvement. The areas, which need improvement, could be the supply of Internet based CDs and provision of other inputs to the students. On the whole the students community seem to be quite satisfied and they also enjoy this new and innovative method of teaching and learning.

As far as the performance of students in SSLC examination is concerned it seems to be better in the MSP schools than the Non-MSP schools. This would also reflect upon the additional inputs provided to the students through the computer-aided education.

Among the providers EDCOMP seems to be doing well as far as certain positive indicators of MSP are concerned. Most of the input indicators are favoring this provider which probably supports the argument of SMALL IS BEAUTIFUL.

The SSLC results compared across MSP and Non MSP also substantiate the fact that MSP has made significant impact on the learning levels of the student community with the input from computer and computer aided education.

The program happens to be quite innovative and stands as a model for emulation by other states as well. Though it had some teething problems at the beginning, the sincere and tireless efforts by the officials of DSERT have put the whole program on the right track. If extended, the MSP has great potential for the economy of Karnataka in the days to come.

Annexure:

Comments by CAG on MSP and the Replies by the DSERT for the Comments

The CAG report had highlighted the deficiencies of MSP with regard to the following.

- Against the stipulation of three hours of computer education per student per week the programme was able to provide classes to the extent of three hours, tow hours and one hour in different category of schools. This was as per the evaluation of MSP by engineering colleges during the period June 2001 to March 2004. The report also pointed out that the details of student population, number of schools in each category and number of hours of computer education and computer aided education in core subjects were not indicated. The reported based on the information supplied to it opined that out of the maximum enrolment capacity of 10.89 lakh students about 9.11 lakh students were enrolled. Out of the rnrolled only 5.35 lakh students received computer education for less than minimum of three hours, Student population of 3.10 lakh was not provided training in internet facilities.
- The report also took note of the problems of power supply but felt that the generators, which were supplied for the purpose of maintaining effective power supply, were not utilized due to want of funds for fuel.
- The failure to supply necessary software in time to the schools was also highlighted in the report.
- Due to want of additional enrollments as against the capacity of schools the report felt that about 1.78 lakh students were deprived of computer education which could have been provided to them without any extra cost.

Explanations Provided by DSERT to the observations of the CAG Report:

- Against all the difficulties which are beyond the limits of the DSERT, all efforts were made to provide telephone / Internet to the schools. Constant

pursuance of the matter by the department at the highest level has resulted in most of the schools getting connected by telephone / Internet. But the problem still persists due to the fact that some schools are located in far flung and remote areas.

- The audit observation that the payment made to the agencies at full rates for 3 hours per week is factually correct. At the time of Audit only 75 per cent of the installments were paid to the agencies. Remaining 25 per cent of the balance amount is being released to the agencies after deducting the actual cost and penalties wherever applicable for the short comings like shortage of Internet hours, absence of faculty and hardware problem as per the terms and conditions stipulated in the agreement. Penalties will be continue to be imposed wherever services are not provided in true spirit of the project.
- In some cases the enrollment exceeded the capacity of the schools and thus resulting in additional load on the program. The department tried to adopt certain criteria for providing computer education to children as it was not possible to accommodate all children in the practical classes due to limited number of classes and limited space available in the computer . labs.
- All software requited to operate computers were provided by the agencies at the time of installation of the computers itself. Providing subject based CDs for computer-based education took some time as it was an academic exercise to suit the content to the state syllabus and such CDs were not readily available in the market. Unlike computer education, which follows a set of agreed pedagogy, department took up the task of preparation of CDs suiting the syllabus followed in the schools which was unprecedented. Hence hard spots in each subject had to be identified by group of experts, evaluation of sample CDs provided by educational experts etc., After identification of hard spots, tenders were floated to identify the agencies for preparation of CDs. M/S. School Net has completed installation of CDs and training of teachers in respect of Mathematics and Social Science in all schools. The other two soft wares viz, Science and English have also been supplied to the project schools. Each stage of the preparation was to be monitored by subject experts and state consultant of MSP with the intention of making whole system fool

proof. Hence there was a little delay in implementation of computer aided education as compared to computer education per se.

- With regard to the students being deprived of computer education, the department feels that the maximum limit is fixed for categorizing the school and it is nowhere stated that the school should have maximum number. The instruction from DSERT to enroll students from Higher Primary Schools to High Schools wherever there was a dearth of enrollment was not part of the agreement and it was not binding. While issuing this instruction, the intention of the department was to cover the students to the maximum extent if possible. But in practice it is very difficult to enroll the Higher Primary School students to the High Schools as timetable of these schools is not co-terminus. There are also issues relating to learning levels of the students and the proximity of the school, which do come in the way. Thus the objection of deprivation of computer education to the students needs to be reconsidered.
- With regard to the unfruitful expenditure on generators, the department clarifies that the terms of agreement with three maintenance agencies don't prescribe them to provide generators as well as fuel to run them. It is department's responsibility to provide adequate power supply. As this could not be given, it was proposed to supply generators to schools and provide money required for purchase of fuel to SDMCs directly. Department did provide generators to 494 A and B category schools with the intention that fuel charges would also be borne by the department. Financial crunch has forced a situation wherein generators were left unused for want of fuel. The Department has already made correspondence with the Government to get funds for the supply of fuel to these schools. Due to lack of funds, the Department could not meet the fuel expenses of the generators of MSP schools. However, the agencies were requested to supply the fuel. The agencies have supplied fuel periodically and the generators are put to use. It is obvious from the above that, as generators are being made to run, the objection in this regard be dropped.

Appendix

Sample MSP Schools Selected In Different Taluks And Districts Under The Study

Agency : NIIT

SCHOOL NAME	ADDRESS	DISTRICT	TALUK	CAT	Total
NOVODAYA RESIDENTIAL SCHOOL	ADAKAMARANAHALLI	BANGALORE NORTH	ADAKAMARANAHALLI	A	3
GOVT HS	POTTERY TOWN		POTTERY TOWN	B	
GOVT HS	TANISANDRA		TANISANDRA	C	
Highest Enrollment					
GOVT HS FOR GIRLS	KANAKAPURA	BANGALORE RURAL	KANAKAPUR	C	5
GOVT HS	HERANDYAPPANAHALLI			B	
SC/ST RESIDENTIAL SCHOOL	DODDA MARALAVADI			A	
Lowest Enrollment					
GOVT HS	MARGUNDANAHALLI	BANGALORE RURAL	NELAMANGALA	B	
GOVT PUC	THYAMAGONDLU			C	
Highest Enrollment					
GOVT HS	BEVINAKOPPA, AMATURU	BELGAUM	BAILAHONGAL	A	7
GOVT HS	BAILWADA			A	
GOVT HS	KENGANOORA			B	
SBM GOVT GIRLS HS	KITTUR 591115			C	
Lowest Enrollment					
GOVT HS	SALAPURA	BELGAUM	RAMDURGA	B	
GOVT HS	MUDAKAVI			A	
GOVT HS	RAMDURGA			B	
Highest Enrollment					
GOVT HS MAK AZAD	FORT BELLARY CITY	BELLARY	BELLARY	C	4
GOVT HS (URDU)	MILLERPET			B	
Lowest Enrollment					
GOVT HS	BANNIKALLU	BELLARY	HAGARI BOMMANA HALLI	A	
GOVT PUC	RAMANAGARA			C	
Highest Enrollment					
GOVT HS	Babanagar/mamadapur	BIJAPUR	BIJAPUR	B	4
GOVT PUC	NAGATANA			C	
Lowest Enrollment					
GOVT HS	B.SALAVADAGI	BIJAPUR	MUDDEBIHAL	A	
GOVT HS	KOLUR			A	
Highest Enrollment					
GOVT HS	YALAGODU	CHITRADURGA	CHITRADURGA	A	3
GOVT PUC	DODDASIDDAVANAHALLI			B	
Lowest Enrollment					
GOVT PUC	MOLKALMOOR	CHITRADURGA	MOLKALMOOR	C	
Highest Enrollment					
MORARJI RESIDENTIAL SCHOOL	MULKI	DAKSHINA KANNADA	MANGALORE	A	3
GOVT PUC	HALEANGADI			C	
Lowest Enrollment					
GOVT HS	AJJAVAR	DAKSHINA KANNADA	SULYA	B	
Highest Enrollment					
SC/ST RESIDENTIAL SCHOOL	MAYAKONDA	DAVANAGERE	DAVANAGERE	A	4
GOVT PUC	KAKKARAGOLLI			B	
Lowest Enrollment					
GOVT PUC	NYAMATHI	DAVANAGERE	HONNALI	C	
GOVT HS	SORTHUR			A	
Highest Enrollment					
GOVT HS	DONGARGAON	GULBARGA	GULBARGA	B	7
SC/ST RESIDENTIAL SCHOOL	GULBARGA			A	
GOVT HS	KALLAHANGARA			C	
GOVT HS	KALMOODU			A	
Lowest Enrollment					
GOVT HS	CCI KURKUNTA	GULBARGA	SEDAM	B	
NAVODAYA RESIDENTIAL SCHOOL	MALKED			A	
GOVT PUC	SEDAM			C	
Highest Enrollment					
GOVT PUC	DUDDA	HASSAN	HASSAN	C	4
GOVT HS	DODDAKONDAGULA			B	
Lowest Enrollment					
GOVT PUC	ALUR	HASSAN	ALUR	C	
GOVT HS	RAYARAKOPPA			A	
Highest Enrollment					
MORARJI RESIDENTIAL SCHOOL	MADANAHALLI CROSS	KOLAR	KOLAR	A	3
GOVT HS	KYALANUR			C	
Lowest Enrollment					
GOVT HS	HAMPASANDRA	KOLAR	GUDIBANDE	B	
Highest Enrollment					
GOVT HS	HULI HIDER	KOPPAL	GANGAVATHI	A	4
GOVT HS	NAVALI			B	
Lowest Enrollment					
GOVT HS	HANUMASAGARA	KOPPAL	KUSTAGI	C	
MORARJI RESIDENTIAL SCHOOL	KUSTAGI			A	

Agency : NIIT

SCHOOL NAME	ADDRESS	DISTRICT	TALUK	CAT	Total
Highest Enrollment					
GOVT HS FOR GIRLS	HALAHALLI	**MANDYA**	MANDYA	A	5
GOVT PUC	V.C.FORM			B	
GOVT HS	MUTHEGERE			C	
Lowest Enrollment					
NOVODAYA RESIDENTIAL SCHOOL	SRIRANGAPATNA	**MANDYA**	SRIRANGAPATNA	A	
GOVT PU.COLLEGE	SRIRANGAPATNA			C	
Highest Enrollment					
GOVT HS	ILAVALA	**MYSORE**	MYSORE	C	8
NAVODAYA RESIDENTIAL SCHOOL	DODDA HUNDI			A	
GOVT HS	UDBUR			C	
GOVT PUC	KUVEMPUNAGAR			C	
MAHARAJA GOVT PUC	MYSORE			C	
Lowest Enrollment					
GOVT PUC	BETTADAPURA	**MYSORE**	PIRIYAPATNA	C	
GOVT HS	HARNAHALLI			C	
GOVT PUC	KITTURU			B	
Highest Enrollment					
GOVT HS	AYANOOR	**SHIMOGA**	SHIMOGA	C	4
GOVT HS	GAJANOORU			B	
Lowest Enrollment					
GOVT HS	BASAVANI	**SHIMOGA**	THIRTHAHALLI	B	
GOVT HS	BHAVI KRISURU			A	

Agency : NIIT

SCHOOL NAME	ADDRESS	DISTRICT	TALUK	CAT	Total
Highest Enrollment					
GOVT EMPRESS GIRLS HS	TUMKUR	**TUMKUR**	TUMKUR	C	9
GOVT PUC FOR BOYS	TUMKUR			C	
GOVT PUC	UOORU KERE			C	
GOVT HS	THONDEGERE			B	
GOVT HS	SWANDENAHALLI			A	
Lowest Enrollment					
MORARJI RESIDENTIAL SCHOOL	SIDDARABETTA	**TUMKUR**	KORATAGERE	A	
GOVT HS	HOLAVANAHALLI			C	
GOVT PUC	KORATEGERE			C	
GOVT HS	YALLIRAMPURA			B	
Highest Enrollment					
GOVT PUC	POLLIPPU,KAPU	**UDUPI**	UDUPI	A	3
GOVT HS	THENKA YERMALU			B	
Lowest Enrollment					
GOVT PUC	UPPUNDA	**UDUPI**	KUNDAPURA	C	
Highest Enrollment					
GOVT PUC	ALLANKI	**UTTARA KANNADA**	HONNAVAR	A	4
GOVT PUC	IDAGUNJI			C	
Lowest Enrollment					
GOVT HS	RAMANAGARA	**UTTARA KANNADA**	JOIDA	B	
GOVT HS	JAGALPETE			A	

Agency : APTECH

Name of the school	Name of the place	TALUKA	DISTRICT	CAT	Total No. of schools
Highest Enrollment					
GOVT HIGH SCHOOL	CHIMMADA	JAMKHANDI	BAGALKOTE (2)	A	
GOVT PU SCHOOL	BANAHATTI	JAMKHANDI	BAGALKOTE (2)	C	3
Lowest Enrollment					
GOVT HIGH SCHOL	SIDDAPURA	BILGI	BAGALKOTE (2)	A	
Highest Enrollment					
GOVT HIGH SCHOOL	BIDANAL	HUBLI	DHARWAD	A	
GOVT HIGH SCHOOL	VISHWASHWARA NAGAR	HUBLI	DHARWAD	B	3
Lowest Enrollment					
GOVT HIGH SCHOOL	KALAGATAGI	KALAGATAGI	DHARWAD	C	
Highest Enrollment					
GOVT HIGH SCHOOL	BETEGARI	GADAG	GADAG	A	
GOVT HIGH SCHOOL FOR GIRLS	HULKOTI	GADAG	GADAG	B	3
Lowest Enrollment					
GOVT HIGH SCHOOL	NARAGUND	NARAGUND	GADAG	C	
Highest Enrollment					
GOVT HIGH SCHOOL	GUDIHONNATTI	RANEBENNUR	HAVERI	C	
Lowest Enrollment					3
GOVT HIGH SCHOOL	MAASANAGI	BYADAGI	HAVERI	A	
GOVT HIGH SCHOOL	HADIGONDA	BYADAGI	HAVERI	B	
Highest Enrollment					
GOVT HIGH SCHOOL	YERGERA (GUNJALLI)	RAICHUR	RAICHUR	A	
GOVT HIGH SCHOOL	YAPALADINNI	RAICHUR	RAICHUR	B	3
Lowest Enrollment					
GOVT COMPOSITE PU COLLEGE	DEVADURGA	DEVADURGA	RAICHUR	C	
MORARJI RESIDENTIAL SCHOOL	YAMARE	BANGALORE	BANGALORE SOUTH	A	
GOVT HIGH SCHOOL	ATIGUPPE,VIJAYANAGAR,BL-40	BANGALORE	BANGALORE SOUTH	B	3
GOVT PU COLLEGE	ANEKAL	ANEKAL	BANGALORE SOUTH	C	
Highest Enrollment					
Morarji Residential School	Kamthana	Bidar	BIDAR	A	
Govt High School	Malegaon	Bidar	BIDAR	B	3
Lowest Enrollment					
Govt High School	Hokarana	Aurad	BIDAR	C	
Highest Enrollment					
MORARJI RESIDENTIAL SCHOOL	BASAVANAHALLI GRAMA	SOMWARPET	KODAGU	A	
GOVT HIGH SCHOOL	BESUR	SOMWARPET	KODAGU	B	3
Lowest Enrollment					
GOVT PU COLLEGE	PONNAMPET	VIRAJPET	KODAGU	C	
Highest Enrollment					
GOVT PU COLLEGE	PANCHANA HALLI	KADUR	CHIKKAMAGALUR	B	
KLK GOVT HIGH SCHOOL	BERUR	KADUR	CHIKKAMAGALUR	C	3
Lowest Enrollment					
GOVT HIGH SCHOOL	DHAREKOPPA	SRINGERI	CHIKKAMAGALUR	A	
Highest Enrollment					
GOVT PU COLLEGE	HANUR	KOLLEGAL	CHAMARAJNAGAR	B	
GOVT PU COLLEGE	LOKANAHALLI	KOLLEGAL	CHAMARAJNAGAR	B	3
Lowest Enrollment					
GOVT PU SCHOOL	YELANDUR	YELANDUR	CHAMARAJNAGAR	C	

Agency : EDUCOMP

SCHOOL NAME	LOCATION	DISTRICT	TALUK	CATEGORY	TOTAL
Highest Enrollment					
Govt. PU College	Batlahalli	Kolar	Chintamani	A	**3**
Govt. PU College – Girls	Chintamani			C	
Lowest Enrollment					
Govt. High School	Gulur	Kolar	Bagepalli	B	
Highest Enrollment					
Govt. PU College	Chickmagalur	Chickmagalur	Chickmagalur	C	**3**
Morarji Residential School	Chickmagalur			A	
Lowest Enrollment					
Govt. PU College	Koppa	Chickmagalur	Koppa	C	

References :

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Impact of MSP on SSLC Examination Results:

Another dimension of understanding the effectiveness of MSP is to measure the performance of students who appeared for the SSLC examinations. Thus, in order to understand the impact created by the MSP, an attempt was made to assess the secondary examination results across the selected MSP and Non MSP schools for the years 2004, 2005 and 2006. The data on SSLC results were collected from the Karnataka Secondary Education Examination Board, Bangalore. The analysis presents the cross comparisions between the results of MSP schools and the non MSP schools. The attempt tries to review the status of students passing out of 10^{th} standard from these schools precisely during the years 2004 and 2005.

Percentage of Students passing in different ranges. :

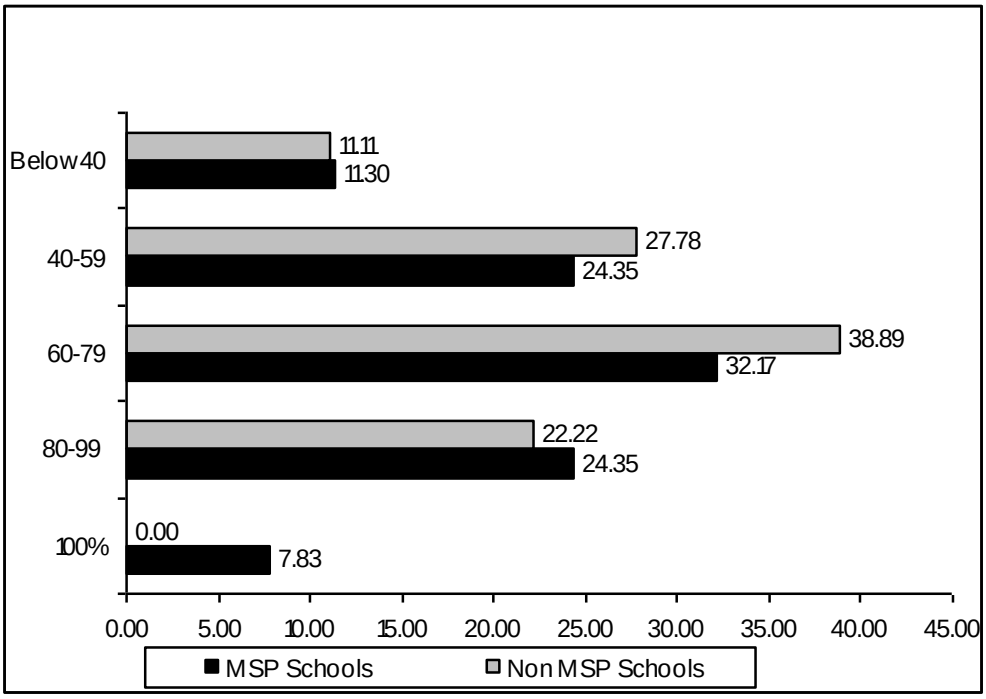
Data collected for this purpose pertains to 2004, 2005 and 2006. It is incomplete for the year 2006 for various reasons. As such, the comparisons between the performance of MSP and Non-MSP schools was limited to two year data i.e 2004 and 2005. The percentage of passing was considered as the basis, because MSP is implemented in selected Blocks and the absolute numbers are not comparable to each other. It was felt convenient to identify certain percentage ranges and compare the performance of students in SSLC examinations.. For example in a school there could be 100 per cent passes in the SSLC examination and in another school only about 40 per cent of the students may pass out. In order to make the comparison meaningful the following categories of passes were used in the analysis.

Schools reporting 100 per cent passes
Schools reporting 80 to 99 per cent passes
Schools reporting 60 to 79 per cent passes
Schools reporting 40 to 59 per cent passes
Schools reporting below 40 per cent passes

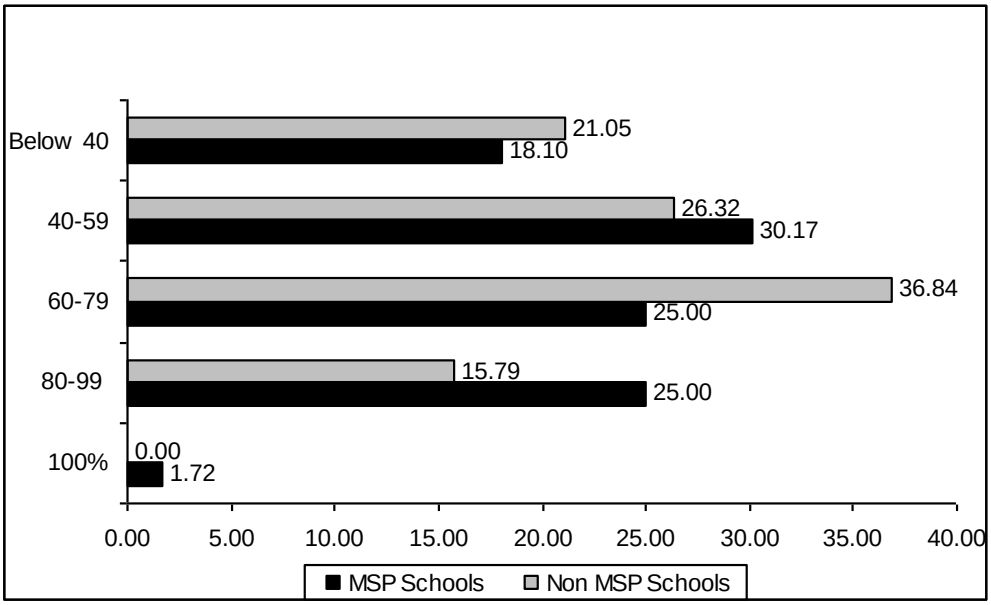
It can be observed from the graphs below that for the years 2004 and 2005 only in the MSP schools 100 per cent passes were reported and unfortunately such level of

performance was not found in the Non MSP school category. In the next category of passes as stated above again the MSP schools have done better. For example, in the 80 to 99 per cent of passes one can observe greater proportion of MSP schools than the Non MSP schools. As a corollary of this, in the lower levels of passes naturally the Non MSP schools have greater proportions. Thus it can be observed that the number of students passing in the SSLC examination seems to be better in the MSP schools which certainly reflects on the performance of the student community with the additional input of computer and computer aided education.

Graph…(No).
Students Passing out SSLC Examinations in different ranges between MSP & non MSP schools during 2004.



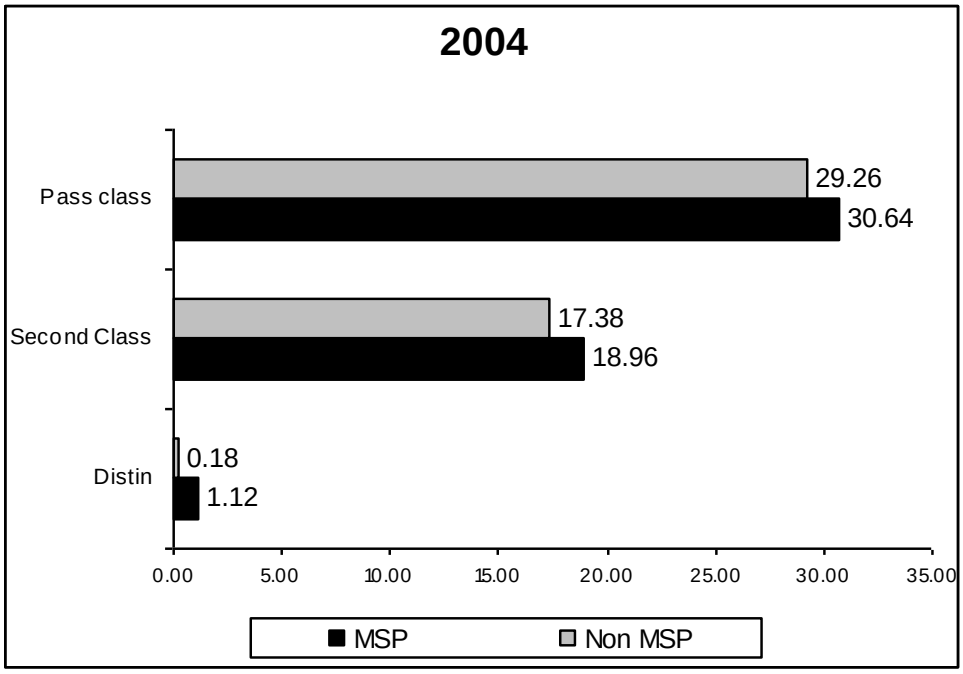
Graph: No----
Students Passing SSLC examinations in different ranges from MSP & Non MSP schools during 2005



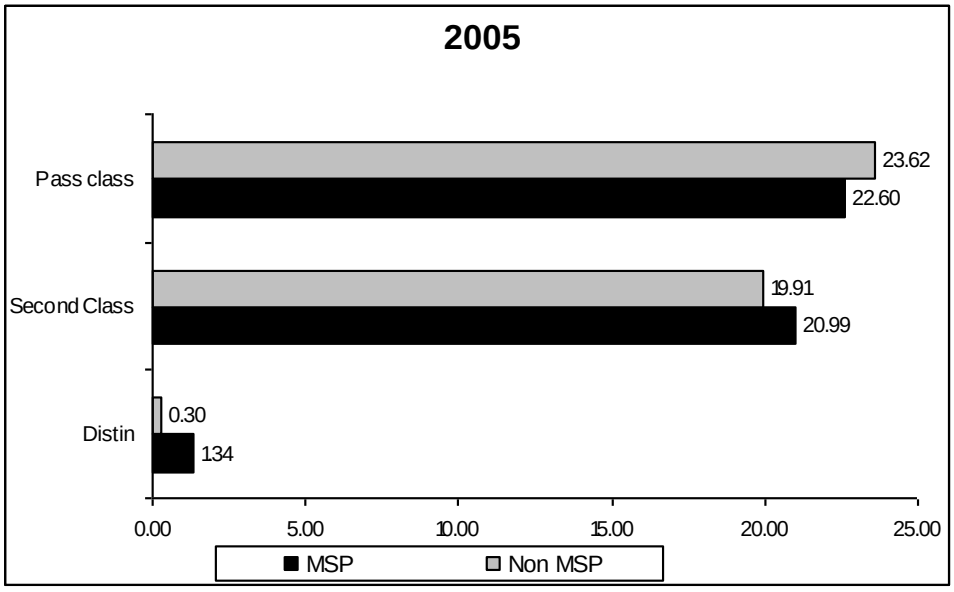
Level of Passing at the Selected Schools:

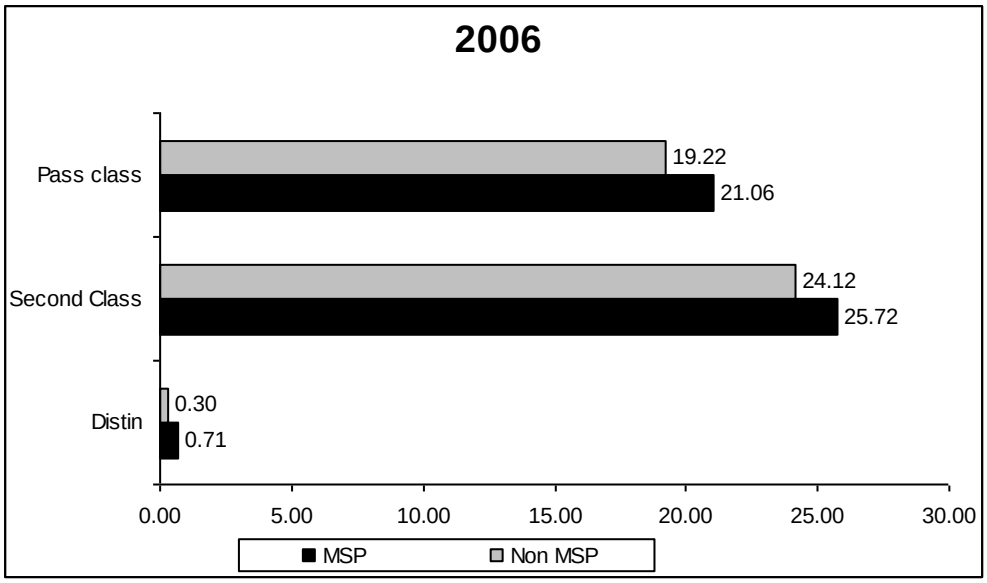
In order to understand effectively the rate at which the MSP & non MSP schools fared in the X standard examinations, the results were classified into pass percentages with distinction, second class and just pass class. **The analysis indicates that for all the three years in question the MSP schools have shown good progress in terms of distinctions and the number of passes. The same trend is not observable in Non MSP schools.** Thus the MSP schools apper to be doing better in pass turnout, especially with second class passes and ordinary passes.. Thus, one can broadly attribute the effect of MSP on performance of the students at the terminal level of examination.

Graph…..
Level of Passing at the Selected Schools



Graph…..
Level of Passing at the Selected Schools





On the whole, it can be inferred that the MSP has brought in positive impact on performance of the students. This is reflective of the fact that distribution of student performance in SSLC examinations is more skewed towards MSP schools than those in the non MSP category. This is substantiated through the analysis of the results of the Board of Secondary Examination in the state.