Learning Achievement of Slum Children in Delhi

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LEARNING ACHIEVEMENT OF SLUM CHILDREN IN DELHI

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Abstract

The paper is based on a study that was conducted to examine the learners' achievement level of slum children in the government schools and privately run unrecognised schools. The study tried to find out the achievement scores of Grade I and Grade IV children in language and mathematics. An effort was made to examine the inter-school and intra-school variations in mean percent achievement scores. The study points out the differential achievement scores between the government and unrecognised schools considering the fact that those children are from the same socio-economic background. A stock of the availability of schooling infrastructure, teachers and other facilities in the selected schools was taken. The family characteristics of children belonging to slum areas were also investigated. This study also examines the situation with respect to the home factors, school environment and adequacy of facilities in the selected areas. The association between these factors and learning outcomes is also examined within the stipulated constraints. Some of the questions pertaining to the achievement level of slum children have been raised. These are: Do the children in slums have access to schools with satisfactory and appropriate quality of infrastructure, teachers, and teaching- learning resources? How much do these children learn? How do the learning outcomes vary between the schools under different managements but working in similar kind of environment? Do the slum children perform differently in different schools? Such an analysis acquires significance, as there is not much research into teaching-learning styles and characteristics of the schools serving the urban slum population. Finally, the study makes recommendations to improve the educational attainment among the children living in slums.

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SECTION I

LEARNING ACHIEVEMENT OF SLUM CHILDREN IN DELHI

The Context

The last few decades have witnessed an unprecedented expansion of basic education opportunities throughout the world and particularly in the developing countries. After attaining independence, many Asian, Latin American and African countries, spurred by the impetus provided by UNESCO and other national and international agencies, recognised basic education as a fundamental right and figured it prominently in their development agenda and political declarations. India has been no exception. The development planners in India also made basic education as an integral part of the national development perspective plan for achieving the objectives of growth with equity and social justice. The country since independence is committed to the fulfilment of educational goals by providing universal access and a satisfactory quality of basic education. The recently enacted 86th Constitutional Amendment recognizes elementary education (6-14 years age group) as a fundamental right.

In order to fulfil these objectives of reaching education to all, the following five conditions are required to be satisfied simultaneously and on sustainable basis:

- Provision of easy access to an educational facility for all children in the eligible age group (6-14 years) irrespective of the caste, creed or location.
- All children enrolled at the right age, implying universal intake through formal, non-formal or alternative modes of educational facility.
- Universal retention throughout the primary and upper primary education cycle, implying no dropout and repetition once the children are enrolled.
- Universal transition from primary to upper primary grades for all children irrespective of the type of school from which they started their education.

- Comparable and satisfactory level of achievement by all students at the end of primary and upper primary classes.

The move towards achieving the UEE has to be chartered out in a way that various forms of inequities do not accentuate in the interim period but rather constantly reduce gender, regional and social inequities in accessing education, and in participation and achievement levels.

Even though the Indian government has launched various programmes and projects to meet the basic learning needs of all children, the reality is far short of expectations. In India, the state governments are responsible for the implementation of educational reforms in school education. The Indian states have considerable autonomy to establish their own priorities between and within the development sectors and allocate the financial and other resources accordingly. In terms of outcomes, the indicators of intake, enrolment and the quality of schooling infrastructure and its outcome vary vastly between and within the states. The perpetuation of many forms of disparities in educational development is an ongoing concern of policy planners and program managers but not enough success has been achieved to reform the system to respond to these challenges effectively. The continuation of various types of gender, social, regional and economic disparities on the one hand and disenchantment among beneficiaries on the other, are the consequence of the following five factors affecting the demand and supply of education:

a) The perpetuation of supply side constraints and bias/discrimination in the provision of educational infrastructure.

b) The inefficiencies in the management of education, teacher preparedness and deployment of teaching and allied resources.

c) Poor information management systems to prevent the real problems from being discovered and tackled in real time.

d) Straightjacket approach to the content and process of education for all. The relevance of the standardized curriculum and teaching-learning methodologies for all target groups affect the pace and quality of output.

e) The demand side constraints include the child, family and the societal responses to the public sector initiatives, which are also intrinsically linked to the religious, social and economic status of the family, the place of living and the expected tangible returns from a given level of education.

Expressed in a generalised sense, the above factors constitute building blocks of a vicious circle of continuing educational underdevelopment and are sustained by each other. To achieve a virtuous circle of development, a straightjacket approach of achieving demand and supply equilibrium has neither worked in the past, nor would work in the future. As the regions/social groups progress towards universal participation, the strategies to meet the basic learning needs of the marginalized groups of population require an approach which is future-oriented rather than extension of the established practices meant for some other groups of population.

The models of mass education have not been able to attract the marginal and left-out groups of children. The urban poor constitute such a marginalized category. While the urban areas are characterized by affluence, modern living styles, having access to latest technologies, high educational attainment and high levels of income, the marginal groups continue to suffer from the lack of adequate living standards and access to health, education and meaningful employment opportunities. The urban poor and marginal groups certainly lack say in the corridors of power and hence not much attention is paid to their real needs. The five conditions mentioned above would never be met, if lack of data and understanding about the problems of poor continue to persist at various levels. These disparities are further confounded when the education sector is viewed from the prism of religious, gender, social and economic inequalities in a large and diversified country like India.

A comprehensive model of educational development, especially at the grassroots, is yet to emerge in each area-specific context. For a given area, the plans prepared continue to be partial and fail to take into account the contribution of other agencies and players as providers of educational services. The confusion is at its worst in the large urban areas and metropolitan centres. The following discussion further elaborates on some of the contradictions between the perceived and the realised goals.

Access and Quality: Is There a Trade-off?

Rapid developments in educational provisions in independent India have led to many positive outcomes, which are necessary but not sufficient conditions for the UEE to happen. India now boasts of the second largest education system in the world. It presently comprises of about 640,000 primary schools, 206,000 upper primary and 126,000 secondary / senior secondary schools. The arts, science, commerce and professional colleges number about 10,000. Nearly, 114 million students study in primary, 43 million in upper primary and 28 million in secondary/senior secondary grades. The number of teachers working in primary, upper primary and secondary/senior secondary schools approximates 1.9 million, 1.3 million and 1.7 million respectively (Educational Statistics 2000-01, MHRD). These are no small achievements by any standards but are not sufficient to meet the needs for achieving sustainable UEE.

While the enrolment at primary and upper primary schools has increased since independence, the intra and inter-regional disparities have persisted, thus depriving a large number of children to meet their educational needs. By 1980's, it was very clear that expansion alone would not help. By that time, considerable quantitative expansion had taken place as far as formal primary education was concerned. An equally important question began to rise was related to the improvements in quality of education delivery. Parents and the public in general often complain that

children graduate from the schools without attaining competencies corresponding to the level of certification. Studies have also shown that even when children attend school regularly for five years, they still fail to successfully graduate the primary education cycle (Aggarwal, TN cohort, 2001). Many poor parents feel cheated due to irrelevant content, inadequate infrastructure and low motivation of the teachers to inculcate the necessary competencies and values among the children.

Consequently, based on various reviews and recommendations of the commissions and numerous committees, many schemes were launched to bring about improvements in the quality of education. Consequent upon the adoption of the National Policy on Education (1986), the scheme of Operation Blackboard was launched in 1988 with the premise that each primary school would have a minimum of two all-weather classrooms and two teachers. The establishment of National Council for Teacher Education was seen as a major reform in improving the quality of teacher training institutions. Realising that the teachers play a significant role in the delivery of education services, the establishment of DIETs was considered as a landmark initiative in improving the quality of in-service and pre-service training. Besides these innovative reforms by the central government, many other incentives for students have been in the form of free textbooks, free uniform and midday meals. The response and success of these reforms in various states has been uneven. As a net outcome of the reforms, the gap in scholastic achievement between the privileged and the deprived children is unacceptably high and has persisted over the years. The dual system of education is getting accentuated over the years and no solution seems to be in sight (Aggarwal, Haryana, January 2001). The central and state governments in India are responsible for providing basic education of a comparable quality to all children. Unfortunately the improved access is accompanied by a decline in the quality of primary education in government schools. This has resulted in the proliferation of private fee-charging schools even for the benefit of slum children.

Following the above discussion, it is evident that major educational reforms for improvement of quality are needed to meet the educational needs of the marginal groups, which constitute 10-20 percent of total population. This ratio is far less than the corresponding poverty ratio. Therefore, while many children from the poor families are already benefiting from the existing educational provision in the public and private sector, the needs of many others have yet to be addressed to. Who are these children? Detailed information needs to be gathered on all the out-of-school children and their families in India. It is a common perception that all such children are deprived on one or the other count and include: children with special needs, children living in remote and inaccessible habitations, street children, children working in informal sector, especially in the urban areas, children living in slums where access to educational facilities is limited and many other such categories of children.

Characteristics of Urbanisation in India

According to Census 2001, 27.8 percent of India's population lives in urban areas. The Indian urban scene is characterized by the existence of towns of varying population sizes. It varies from a large number of small towns that are no different from their rural hinterlands, to the large metropolitan cities, which are among the largest in the world. Some of the Indian metropolitan cities have shown a phenomenal population growth rate of 4 to 5 percent per annum during the nineties. Urbanization is thus a continuum in India with large variations in population and socio-economic characteristics. It would be futile to compare Jalgaon with Mumbai, both of which happen to be urban areas within the same state. Thus the contextual factors have serious implications for the design and implementation of educational planning models for urban areas. What works in one urban area may not work in the other due to differences in the social and economic nature of population groups.

The National Commission on urbanization has described that urbanization in India emerged in response to the push and pull factors, which resulted in a large migration from the villages to urban areas. The illiterate, semi-skilled and manual workers have been migrating in search of better employment opportunities and partly due to the demand created for skilled and semi-skilled labour in industrial and commercial undertakings. Poor agricultural productivity and frequent crop failures have also added to the pressure for rural-urban migration. Every year, large numbers of poor migrant workers come to cities, like Delhi and Mumbai with the hope of assured income and better employment opportunities. Some migrate to avail of better educational opportunities for their children. City planners never anticipated the large influx of the migratory population and their civic needs. They could not provide adequate facilities at affordable costs, which has led to the emergence of slums/ghettos, where people prefer to live without basic amenities for various compulsions.

Practically in all cities of India, the development planners have not been able to mobilize resources for meeting the growing needs for urban infrastructure and civic amenities for the vastly growing city population. This has given rise to strikingly sharp inequalities in access to basic physical amenities within the cities. It is true of the basic education and health facilities also. While some are privileged to have air-conditioned homes and cars and hire the most expensive teachers, the others are living in small hutments without electricity and portable drinking water. People living in these squatter settlements are bereft of basic civic amenities of health, shelter and education.

The proportion of people living in slums varies from one city to another. Estimates published by the Census of India (2001) indicate that about 41 million persons live in urban slums in 706 urban areas and constitute 22.8 percent of the population of

these towns. The 1999 estimates indicate that Delhi alone had 3.2 million people living in slums of various types[1].

Problem of Urban Poor

Slums are a universal phenomenon and exist in practically all the cities across the world. Delhi alone has approximately 1,100 big and small unauthorised settlements comprising six lakh jhuggies forming various clusters of slums, with around 3.2 million people living in these slums (Table 1).

Table 1: Growth of Jhuggies and Slum Population, Delhi

Year	No. of Jhuggies	Population (Estimated)	% Slum Population to Total Population
1951	12,749	75,000	4.3
1961	42,815	3,00,000	11.3
1971	62,594	4,00,000	9.8
1981	98,709	15,00,000	24.2
1991	2.59.344	18,00,000	19.1
1994	4,80,429	24,00,000	23.2
1999	6,00,000	32,00,000	23.5

Source: DDA Slum Wing 1951-99.

The data on slum population and its structure, availability of social infrastructure and amenities is lacking. Departments like Delhi Development Authority, Municipal Corporation of Delhi, New Delhi Municipal Committee, Delhi Vidyut Board, Delhi Jal Board and other agencies have though compiled various statistics, but these are not easily available. In the absence of such information, an exhaustive analysis of the demand and supply gaps and the quality of social services like education, health, water and sewerage cannot be undertaken.

[1] The estimates of population living in slums vary. The census estimates are far lower than the corresponding data provided by the DDA.

Educational Disparities & Urban Poor

A large number of projects and programmes were launched to reduce the gender and regional disparities but the problems faced by urban slum dwellers were by and large ignored. Various measures were suggested in different policies and five year plans for the development of rural and backward areas but no concrete strategies were evolved to look into the educational problems of urban deprived. The average socio-economic indicators, like per capita income, infant mortality rate, literacy level, enrolment of the school going children, are much better in urban areas as compared to the national average, but the same is not true of the slum areas. The situation in some slum areas is even worse than many rural areas. It is only recently that the administrators have started thinking about the educational needs of this segment of population, which remained neglected for decades. The Ninth Five-Year Plan recognizes that the relative inequalities are more pronounced in urban areas and reduction in urban poverty is proceeding at a lower rate. The poverty ratios in the urban areas are projected to exceed those of the rural areas (Govt of India, 1999). As the World Bank (1994, P. 9) rightly recognized, "Poverty is not only a problem of low incomes; rather, it is multi-dimensional problem that includes low access to opportunities for developing human capital and to education". Slum children too face educational deprivation in terms of accessibility and quality as well.

Many children from slum areas do not have access to schools with adequate facilities and teachers who are tuned for teaching the under-privileged. If the remote and backward areas have natural geographical barriers like hills, mountains and adverse weather conditions, children of the slum areas have hindrances like busy road, railway track and temporary obstructions. The school may be available within a reasonable distance but the child may need to cross a busy road or railway crossing which becomes an impediment for attending the school. In reality, the

supply side constraints in urban settings cannot be removed by considering the physical distance norms alone. It is the settlement structure, social stratification and the population density that play critical role in the demand for amenities and facilities. A major administrative problem is the location of schools at the demand points. Therefore, overcrowding in schools has emerged as a major issue in urban settings especially in the schools serving the urban poor.

The implications of the medium of instruction have not been adequately examined especially from the viewpoint of learning styles of slum children. Since most of the people living in the slums are first or second-generation migrants, their mother tongue is generally different from the medium of instruction (Hindi in case of Delhi government schools, English in unrecognised schools). The specific educational problems of the slum children as enunciated above needs to be addressed through appropriate interventions and strategies.

Objectives of the Study

From the above discussions, many social, economic and organisational factors associated with education of the poor have been identified. While there are many issues related to the provision of educational and other facilities for the slum population, the existing literature is particularly inadequate to develop a broad understanding of the learning outcomes of various schools serving the children living in slums. The study estimates the average performance of students on the competency based tests in language and mathematics at the end of both Grade I and the penultimate Grade of primary education.

The main objectives of the study were to:

- Examine the achievement scores for the Ist and IVth Grade competencies in language and mathematics;
- Examine the variations in mean percent achievement scores between Government and unrecognised schools;
- Analyse the availability of schooling infrastructure, teachers and other facilities in the selected schools;
- Examine the family characteristics of children belonging to slum areas;
- Present an analytical frame based on the analysis of achievement scores, family characteristics and the school related factors.

Sample of the Study

The study was conducted in six slums selected purposively from different parts of Delhi. The religion, caste and occupational characteristics do differentiate various slums and also clusters within the slums. All these factors have significant influence on the choice of schools and the parents approach to the education of their children. Not all children from the slums go to the government schools. Many children from the slums are also attending private unrecognised schools and their parents have a more open attitude and feel that government schools do not provide the right type of education. In view of these factors and lack of basic information on slums characteristics, it was decided to select a purposive sample. Slums were identified on the basis of location, religion and socio-economic variations.

A sample of 30 schools (16 government schools and 14 unrecognised schools) was selected for the conduct of achievement tests. Only those schools were selected where the children from these slums were studying. Only slum children were selected for administering the achievement test. Achievement test was administered to 654 children of Ist standard (415 children from government schools and 239 children from unrecognised schools) and to 576 children of IVth standard (372

children from government schools and 284 children from unrecognised schools). Questionnaire was administered to 92 teachers from the sampled schools.

Tools of the Study

Following tools were employed for conducting the study:

a) Oral achievement tests, both in literacy and numeracy for Grade I achievement levels;

b) Paper and pencil achievement tests both in language and mathematics for Grade IV achievement levels;

c) School schedule;

d) Teacher schedule;

e) Student profile;

f) Unstructured discussions with the household members, children and educational officials.

Microsoft Excel and Statistical Package for Social Sciences were used for the analysis of data. Average scores were computed for the schools under study. The main findings of the data are presented in the subsequent sections.

SECTION II

SALIENT CHARACTERISTICS OF SAMPLED HOUSEHOLDS

Household profile tries to encapsulate the socio-economic background of the children. The household questionnaire formed an important component of this study because household educational decisions determine the utilisation of available educational facilities (whether to send a child to school or not, and whether and when to withdraw a child from school). These educational decisions are governed by the domestic circumstances. In India, especially in the poor sections of the community, education cannot be taken in isolation. It has to be seen in the wider social context. Thus both home and school factors are important for determining the educational status and attainment of the child. Keeping in view the close relationship between these two factors, the survey of the sampled households becomes a significant part of this study.

Socio-economic and occupation related information was collected from the households of the children of IVth Grade, as they are many a times not able to give details about the occupation, educational status and monthly income of their parents and other siblings. The findings relating to socio-economic details are discussed below.

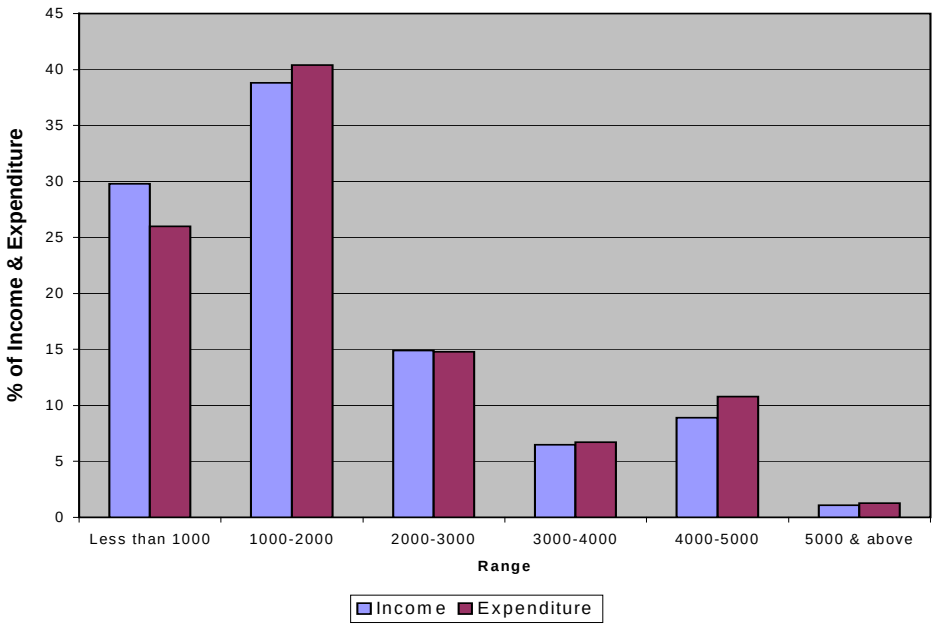
Family Size

The average size of households is 5.8 persons per family suggesting that most of the families have 6 to 8 members. A larger family size implies higher dependency ratio, making it difficult to afford the education of all the children and pay due attention to them.

Household Income

Analysis of the income is very important, especially for the economically backward people as large amount of their income is spent on meeting the basic requirements. Education of children becomes the second priority, as it is difficult for parents with low income to incur expenditure on stationery and uniform. It becomes all the more difficult if they have 2 or more school going children. The income level of the household is calculated by clubbing the total income of all members of the family. Around 69 per cent households had one family member working; around 24 per cent had 2 members working and around 5 per cent had more than 2 family members working. The details of household income and expenditure are given in **Figure 1.**

Fig-1 Income & Expenditure of the Sample Household



The average household income is around Rs.2200 per month for these households. But if we relate the increasing prices of essential commodities with a family size of 6 to 7 members, it becomes difficult to provide for education for these households. Therefore, majority of them have to depend on the government schools for the education of their children. Even then, around 27 per cent households are spending more than Rs200 per month on liquor and alcohol. As far as occupation of father is concerned, around 55% are engaged as skilled or unskilled labourers, have irregular jobs and low income. When the income of the government school going children and private school going children was compared, it was found that most of the households of later category had slightly higher monthly income and the fathers were employed in more organised and regular jobs.

Environmental Conditions in Slums And Their Impact on Children

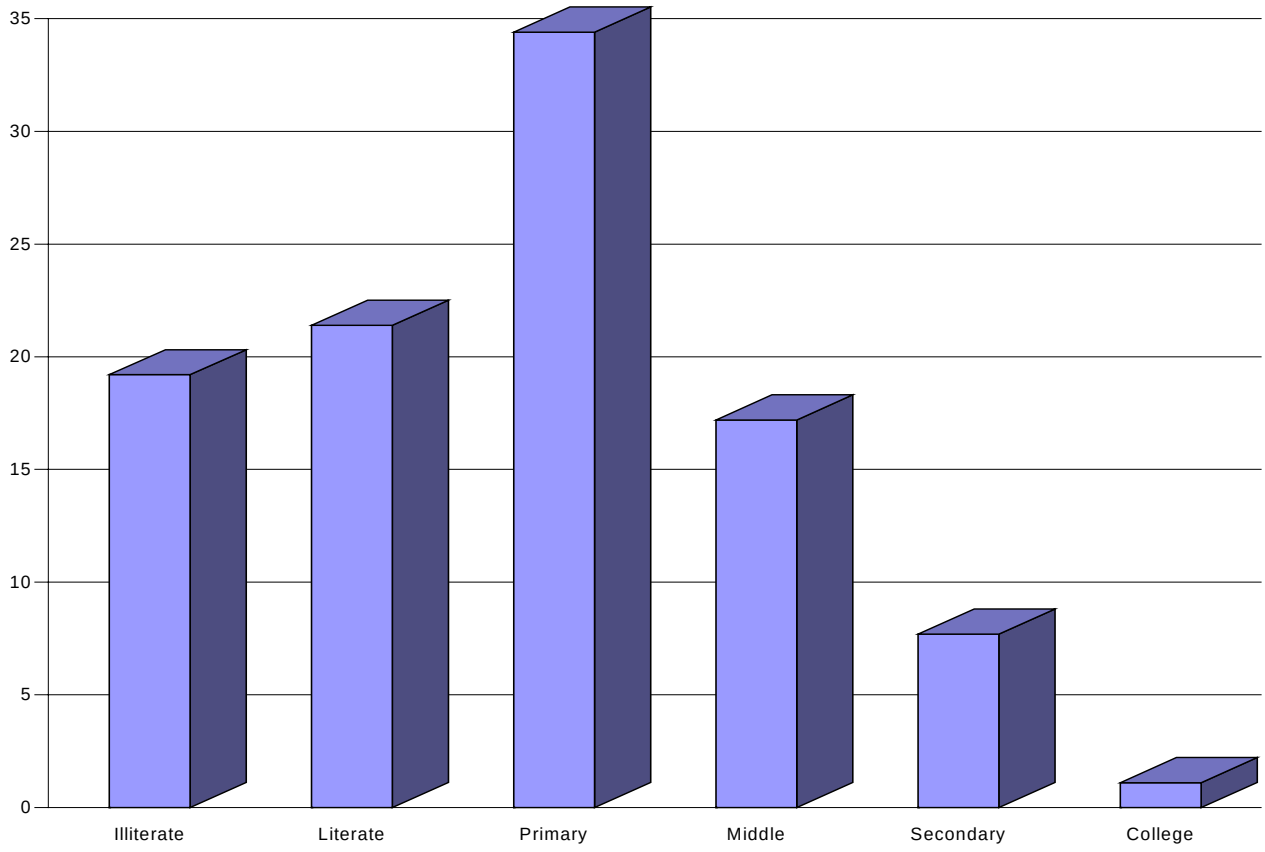
Justice P.B. Sawant has clearly mentioned that shelter for a human being is not mere protection for his limbs and life. It is in his home where he has opportunity to grow physically, mentally, intellectually and spiritually. Right to shelter, therefore, includes right to adequate living space, safe and decent structure, clean and decent surroundings, sufficient light, pure air and water, electricity, sanitation and drainage facilities. Slum people are devoid of all these essential physical facilities and they are always living under the fear of 'unsettlement'. Around 65 per cent of the sampled population have only one room and 35% two rooms only. Rooms are dingy, small and without proper ventilation. Only a few have the toilet facility at home, only around 12 % people have individual tap water supply, rest of them are dependent on the community tap and tanker water. Around 50 % spend one hour daily and around 20 % two hours daily to collect water. When asked further, it was found that 25 % students were given the major responsibility of collecting water. Girls are supposed to help in the domestic work daily. Unless the developmental

programmes are initiated in slums, it would be very difficult for these children to come up to the expected level of learning.

Education Attainment of the Parents

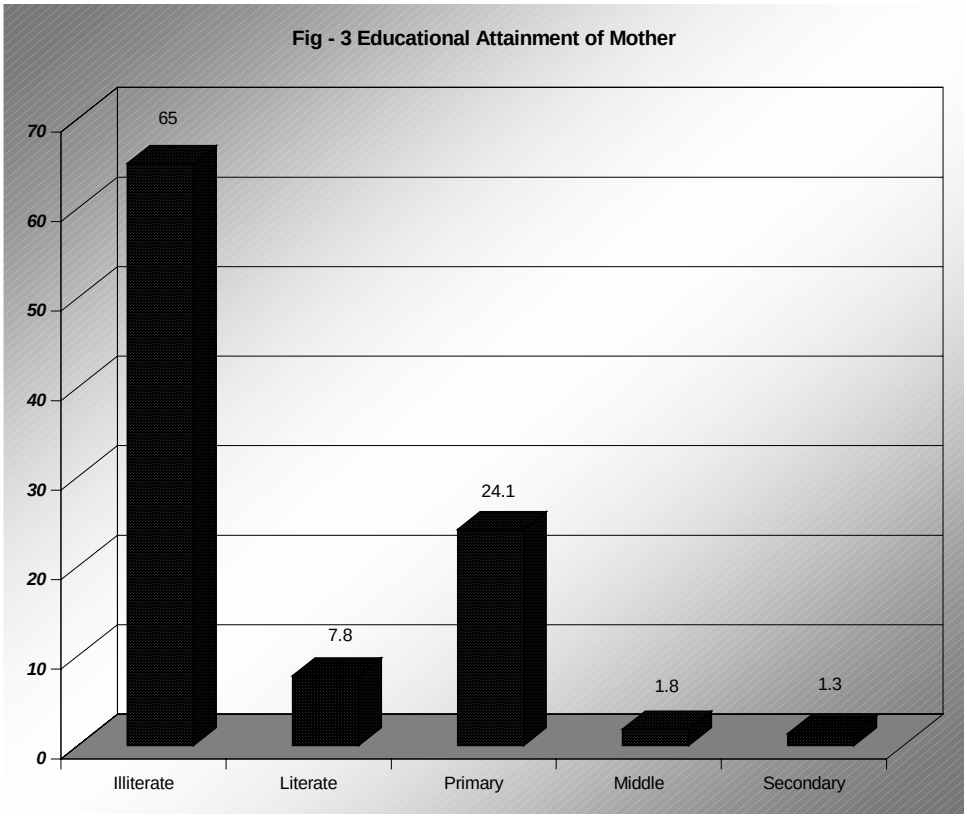
The education of the parents and other elder siblings has an impact on the educational progress of the child. The data on education attainment of the father is given in **Figure 2.**

Fig- 2 Educational Attainment of Father



Around 59 % of the fathers of sampled children are educated and thus can pursue or help their children in their study. But despite this, the achievement level of the children was low. Most of the parents reported that fathers come back home tired after long working hours and have more than one school going children. Therefore, they hardly help the children.

Mothers take major responsibility in the upbringing of their children. Therefore, the education level of mothers is more important for the education of the children. The educational status of the mothers of sampled households is given in **Figure 3.**



The above data speak sufficiently about the educational backwardness of women. Around 73 per cent mothers are either illiterate or literate only. Thus they cannot help the children in their studies; as such it reflects on the achievement levels of children. . The schools of these areas need to take additional responsibilities and

work more efficiently to help these children. But in reality, they are malfunctioning with low teacher motivation and no accountability.

Aspirations About the Education of Children

The parents of all Grade IV learners were asked a question regarding the educational aspirations of their wards. They were asked whether they would like them to study up to primary, middle, secondary or other higher levels of education. It was encouraging to note that most of the parents wanted their children to study up to secondary and senior secondary levels. Table 2 depicts the levels up to which the parents expect their children to study: -

Table 2: – Expectation of Parent as to the Study Level of Children

Level	Percentage of the Total
Primary (Up to Grade V)	1.3
Middle (Up to GradeVIII)	8.3
Secondary (Up to Grade X)	25.8
Senior Secondary (Up to XIIth)	30.9
Up to College	20.7
Professional Course	12.7
Not interested in studies	0.3

The data clearly reveal that there is general awareness about the importance of education among these deprived groups. The parents want their children to break the vicious circle of educational backwardness and obtain higher education. But the household and school environment where these children go, put constraints on them and as a result a large number of children dropout before completing the primary or upper primary levels. And those who survive, only few of them achieve the competency level corresponding to their level.

Reasons for Disinterest of Children in Studies

Although most of the parents expressed the desire that their children should study up to higher levels, however the children did not want to study due to various reasons. Some of them were interested to take up job while few of them could not understand what was taught in the school. A number of children reported against the rude behaviour of teachers and some of them said that no teaching takes place in the school. Many of them found it difficult to meet the educational expenditure and some of them opined that school is far off and they were not able to reach on time. It clearly implies that the incentive schemes like the provision of free uniform, free supply of textbooks are yet to be implemented effectively and benefit the poor.

SECTION III

STUDENT PROFILE

Students profile tried to capture the responses of Grade IV children on the functioning of the teachers. It also helped to ascertain the academic support of the family to the children of IVth standard. Data were gathered from 576 households of the children studying on variables, like the time taken to reach the school, help provided by the family in the education of the child, expenditure on tuition, regularity of teachers in coming to the classrooms, checking of the homework, availability of books and other instructional materials.

The distribution of the learners show that 60.7% were boys and 39.3% were girls, 35 per cent belonged to SC, 1 per cent to ST, 36 per cent to OBC and 28 per cent were from the general category.

Distance of the School

As far as the access to school in the neighbourhood is concerned, it was found that majority of the children walked to reach the school. Around 18 percent used local bus and other means of transport (auto rickshaws or private scooter) to reach the school and had to spend more than 30 minutes to reach the school.

Pre-Primary Education

Early childhood care and pre-primary education has been greatly emphasized in National Policy on Education (NPE), 1986, for the achievement of UEE. Pre-primary education tends to develop the sharing of fun and pleasure among the children, which facilitate in the enrolment and retention subsequently. It has become especially an urban phenomenon and private pre-primary schools are charging high fees for preparing children for admission to the formal schools. However, in the slums, due to the non-awareness and non-affordability, very few

children attend such schools. Around one fifth of the total children from the selected slums had gone to the Pre-Primary centres, i.e. Anganwadis or Balwadis.

Parental and Other Members' Academic Support

Considering the fact that there is high illiteracy among the slum dwellers, especially among the women, children face more difficulties in pursuing their education. Even if the children manage to attend the school, they remain deprived, as they do not receive academic help from their parents. With poor school functioning and no help from the parents impact greatly on their academic achievement. Data from the field also reveals that around only 33% children get help from their family members in their studies. Only about 5 per cent children are helped by their fathers, 23 % by their mothers and 5 percent by their elder siblings. However, many a time the parents cannot fully help them and the children have to depend upon the tutors.

Tuitions

While looking at the mushrooming growth of tuition centres in the city, there is a growing awareness among the slum dwellers that children cannot learn from the school only. They need additional support if they have to perform well in the school. They are also conscious of the fact that their children are being provided inferior quality of education. Their children attend the school where the teachers' motivation level is low and therefore the children are not taught properly. To compensate this, private tuitions are becoming very popular even among the slum dwellers. The field level data also show that around 45% children were taking private tuitions out of which around 11% had the tuitions for the whole years and 31 per cent were having for a few months only. Most of them were taking tuitions in a group of more than five children. When the causes for taking tuitions were probed, it was revealed that many of them (32%) intended to get more marks in the examination. Around 11 per cent attended tuition with an aim to understand the

subject, while a few of them said that their teacher did not teach in the class and compelled them to take tuitions. Some of them needed help to complete the homework. Out of those children who were taking tuitions, around 47 % parents spent less than Rs100 rupees per month on the tuition and around 47 % spent between Rs100 and 200 and only 6 % parents reported to be spending more than Rs 200 on tuition. When we analyse the achievement results of these children, the qualification of tutors and the quality of tuition centres itself also become questionable.

Age of Learners

Child is admitted to Grade I at 6 or 6+ age and by the time he/she reaches Grade IV, he/she should be about 10 years of age. The age of learners is depicted in the table below.

Table 3: Age of Children Studying in Grade IV

Age (in Years)	No. of Children	% of the Total
9	48	8.4
10	233	40.6
11	146	25.4
12	94	16.1
13	46	8.0
14	9	1.5
Total	**576**	**100**

The above table depicts that around 49 per cent children were of relevant age group for Grade IV. More than 50 per cent were over-age. It is probably due to the fact that either children are admitted late for causes like visit to native place, sickness, adverse household circumstances or they repeat the same grade.

Availability of Instructional Materials

The teaching-learning process in the schools is still dependent upon the textbooks. Teachers always refer to the textbooks as these provide prescribed syllabus. The subjects taught at primary stage include language, mathematics, science, and social studies. Each subject has a separate book. Availability of textbooks is a pre-requisite for the learners to learn. The findings on this aspect were encouraging, which is clear from the following table.

Table 4: Availability of Textbooks (Percentage of Children)

Subject Book	Yes	No
Hindi	82	18
Maths	91	9
Science	90	10
SST	80	20

Around 10 to 15% children did not have one or the other subject book. As the survey was conducted in the month of April, a few children had still not purchased the books. Around 85 per cent children of government schools reported that they obtained books from the school free of cost, around 13 per cent purchased them and 2 per cent borrowed from other children, while the children of the unrecognised school had to purchase the books from the school.

Provision of Mid-Day Meal and Other Incentives

To enhance the enrolment and retention, Government of India has been launching various schemes and programmes for the benefit of the underprivileged and poor. Supply of free textbooks, uniforms and mid-day meal are some of the incentives given to enhance the enrolment and retention, especially at the primary level. Around 45 per cent children of the government schools reported that they were

getting regular supply of mid-day meals. Two schools in particular said that the supply was irregular, insufficient and of poor quality. Most of the children received free textbooks but very few children got uniforms from the school.

Regularity in Attending School

Jyotsana & Jha (2002) in their report have stated that there is a need to redefine Universalisation of Elementary Education. It should include universal enrolment, regular attendance and sustained participation. Regular attendance keeps the child disciplined, well versed with the curriculum and continuity in studies. Among the children of slum areas, a particular phenomenon is noticed that they remain absent for a long time when their family goes to their native home. Many a time they go away without informing the school. When they return, either their name is struck off or they lose track of the school syllabus. When a child attends school after a long absence, he/she would have been out of touch and also would have missed the studies at school. This loss cannot be compensated because in most of the cases no academic support from the family is available. At the primary level, they cannot share among themselves. Therefore, certain concepts and skills remain unclear, leading to poor comprehension and poor performance. Around 71 per cent children had missed school for less than 10 days, around 26 per cent between 10 and 20 days and around 3.0 per cent had not come to school for more than 20 days. Children of the government schools were more irregular than the children of the unrecognised schools. The reason could be that the parents are paying for their wards in the private schools and the study does take place in these schools. Moreover, the track of the child is kept in these schools. Around 15% reported that they had gone to the native village and overstayed. Absence due to sickness (around 21percent) is related to the poor environmental and sanitary conditions in which these children stay. Slums are devoid of basic physical facilities, leading to various diseases like diarrhoea, typhoid, measles etc. Around 15 per cent of the absentees were those who could not finish the homework or classwork of those

days. Around 49% children took the help of teachers and fellow students to fill the gaps for the days they were absent from the school. A few of them managed the work either with the support of the family or the tutor and some of them did not bother to do the work.

Classroom Processes and Learning Achievement

Learners' achievement greatly depends on the motivation, regularity and interaction of the teachers. Classroom process implies the course of action and kind of activities that take place in the classroom. School building, availability of instructional room, space to sit, teaching-learning materials and ancillary facilities like drinking water, toilet, are the essential components of the physical aspect of classroom climate. Most of the studies conducted in the field of learning achievement level of children concentrate on the school inputs and background information of learners. These studies assume that given the same inputs, the outcomes will be same. Anitha (1993) tried to investigate the classroom processes in nine different schools. After observing each school for fifteen days, it was found that there was a wide variation in the classroom processes although the schools had comparable physical and human resources.

An attempt was made to investigate the regularity of teachers in schools, in classrooms and the method of their transactions. Around 75 percent children reported that teachers came to the classroom regularly and daily, 21 % children replied that teachers were more or less regular and 2% said that most of the time the teachers came late. Around 65% children were of the opinion that the teachers explained the subject topic in the classroom and around 10% reported that the teachers seldom explained or never explained, and around 25 % children, perhaps out of the fear of the teachers did not respond to this question. It is surprising that the teachers were more or less regular and explained the topics, still the achievement level was low and not up to the mark. Around 51% children reported

that they were able to read what the teachers wrote on the blackboard and around 9% could not understand it, 33 percent responded that they could understand partially and probably the difficulties of these children were not tackled at the right time which further multiplies and ultimately the children were not able to cope with the speed and level of the curriculum, resulting into low achievement. If a little attention is paid at this stage, the achievement level of a large proportion of the children could be improved. The curriculum needs to be made flexible and differentiated as per the background and requirement of the child.

For teaching math, it is necessary that the teacher explains the concept and demonstrates it on the blackboard. Around 29% children reported that the teacher never wrote math sums on the blackboard, 33% children reported that teachers did the math sums on the blackboard and 28 percent children did not respond to this question. The field data reveals that a considerable improvement in the curriculum transaction and classroom processes is needed. It is essential for the teachers to make use of the teaching aids, like blackboard, chalk, chart etc. for enhancing the comprehension level of the children. The active participation of each and every child is a prerequisite for improving the achievement level of children. Around 69% children reported that they were not able to grasp what the teacher taught in the classroom. The actual time devoted for classroom teaching has great significance for student learning rather than the scheduled learning time. The schools have the working days and hours well prescribed. However, in practice it has been found that a considerable amount of time is not utilized due to various reasons, like the absence of teachers, teachers' involvement in census work, departmental work, etc. Therefore, the actual time for teaching remains much less than what has been prescribed.

The time is calculated in terms of the engagement of learning groups by the teachers. In a study of Kerala DPEP districts, the following estimations were made of the loss of instructional time:

- Average loss in government schools: More than one out of every three days (.385).
- Average loss in the private aided schools: Less than one out of every twenty days (.045).
- Average loss in the tribal schools: More than two out of every five days (.411).

An analysis of the reasons thereof reveals that the most common cause for large-scale loss of instructional time, i.e., in periods, sessions and days, is either the delayed start of the school or the early closure of the school or the non-availability of the teacher to the students of a particular class. Keeping the children busy in some namesake activity and unmonitored classroom where children are engaged in play than learning are the other major reasons. The data from the field reveal a considerable loss of opportunity time. Around 58% children replied that in the absence of teacher, the class monitor is made the Incharge, while 22% reported that two classes are often merged together. Under such circumstances instruction on planned activity is not given and there is loss of opportunity time. When further probed as to what happens in the classroom even when the teacher is present, around 64% children said that the teacher asked them to write a page in Hindi regularly, 72% students were of the opinion that mathematics sums were given regularly, and 84% responded that they were checked regularly by the teachers themselves. However, to verify the responses, a few of the notebooks were checked. It was found that in government schools, they were duly signed in most of the cases but the mistakes were rarely pointed out.

Children of the public schools are better performer not only due to the socio-economic condition but also because they are helped in their studies by parents, tutors and teachers. Even if the slum children manage to attend schools, they remain deprived, as they do not have conducive environment at home and most of them have illiterate mothers. Therefore, in most of the cases, they are not helped in

studies at home and also their parents fail to bear additional expenditure required to purchase supplementary materials, like help books, instructional materials and good private coaching. Around 44% children responded that they did not receive any assistance if they failed to understand the content matter. About 50% tried to get the clarification from the teacher and rest depended upon the family members, tutors or peer group.

Nature of Homework

Due to time constraint, all the questions and problems cannot be sorted in the classroom. Thus homework is an important assignment for the children as it gives them more time to understand the topic. Around 58% children mentioned that their teachers gave them homework regularly and 36 percent preferred not to respond to this question. Around 65% students mentioned that it took about half an hour to two hours to complete the homework depending upon the number of subjects and the question given on a particular day. While around 28% reported that it took less than 30 minutes to complete the homework and around 7% replied that they never did the homework. Around 88% children mentioned that they were punished if they did not complete the homework.

Teachers Behaviour

NPE (1986) and Programme of Action emphasized on joyful learning and congenial atmosphere in the classroom. It advises that the teacher should act more as a facilitator rather than as a mentor only. Around 88% children reported that they were afraid of the teacher for the scolding and beating. More than 60% children mentioned that they were beaten up by the teacher. Scolding and beating creates an oppressive environment in the classroom and many a time the children are not able to concentrate leading to poor comprehension and disinterest in the studies.

Subjects Difficult to Comprehend

Around 72 percent children reported that they found maths to be the most difficult subject and the achievement tests also prove it. Around 13 per cent children replied that they found social studies to be the most difficult subject. Only 5 per cent children found Hindi /English language to be the most difficult. The curriculum planners, developers and transactors may need to develop and transact the material in a simpler and interesting way so that it could be easily understood by the children who basically depend upon the school and teachers for learning the basic concepts and competencies.

The analysis of the student profile clearly indicates that students find it difficult to understand the mathematical concepts and operations. Less than half of the students are able to afford private tuitions and more than half does not have any academic support from their families.

The household profile indicates that accessibility is still a major problem in the urban slum areas. Out of six selected slums, the government school is located within one slum only. Most of the children do not receive any academic assistance and help from their families. More than half of the children were overage, which could be due to late admission or high repetition rate. As far as the regular attendance of the children is concerned, 3 percent remained absent for more than 20 days and 26 percent missed the school for 10 to 20 days. It becomes an important factor for low achievement, as these children primarily rely upon school for learning. Most of the students reported that the teachers were regular, gave and checked homework regularly. These responses are hard to believe, especially when we look at the achievement level of these children. The analysis of the household characteristics of these children also reveals that their parents mostly work in unorganised sectors with irregular jobs and low income. Women of these areas are either illiterate or have low attainment of education. Having lived in the affluent

city the awareness level of parents is high and therefore they mostly want their siblings to study up to secondary and senior secondary levels. Although the aspirations are high, yet due to socio-economic constraints and the kind of schools their children are forced to patronize, children loose interest in studies. Consequently, the children either dropout without completing the primary education cycle or not able to achieve the desired competencies.

SECTION IV

SCHOOLS AND TEACHERS PROFILE

As mentioned earlier, the schools in the sample were selected purposively. Only those schools which were either located within the selected slums or where the children from the selected slums studied were selected. In all 30 schools were selected. Of the 30 schools, only one government school and three unrecognised schools were located within the slums and the remaining were situated outside the slums. Three schools were managed by the New Delhi Municipal Committee (NDMC), 13 by the Municipal Corporation of Delhi (MCD), and the remaining 14 schools were unrecognised schools run by the private bodies. In Delhi, MCD is essentially responsible for the management of primary education. However, a few such schools in the NDMC area are managed by NDMC. The schools falling within NDMC area also follow the same curriculum as followed by the MCD schools. Even the selected unrecognised schools are also following the same curriculum.

***Accessibility to Education Facilities*:** A unique feature of the government schools in Delhi is their large size and lack of adequate dispersion. Due to constraints of space, the schools have expanded vertically rather than more schools being established viably and in a well-dispersed manner. The dispersion of schools is evident from the fact that there are hardly any schools in the slum areas, whereas the education of children living in these areas is a priority of the government. The children from these colonies have to walk down to neighbouring areas to attend schools. The survey of the slums indicates that while educational facilities provided by the government are at a distance, there are many privately managed schools running from small houses within the selected slums. The access to private schools is selective and is based on the ability of the parents to pay fee and meet other

incidental expenses. The direct cost of education in private schools is definitely high as compared to the government schools. However, the same may not be true of the intangible benefits accruing from the government and private schools.

***Infrastructure Constraints*:** The government schools were established long ago and over the years have expanded at the same site. Due to pressure on land for commercial purposes, the government is not able to establish many new schools to meet the growing demand from the unserved population groups. All the schools in the study area were established when the demand of education by the slum population was negligible. However, the present scenario is different and all children are expected to attend schools. But where are the schools? Large schools are at locations, which are not conducive for the slum children. How do they go to school? By walking and crossing many man-made hurdles.

Some schools operate double shift to overcome the increased demand from the neighbouring areas. The double shift schools are sometimes segregated in terms of gender. Two shift schools provide education for boys in one shift and to girls in the other shift. This is not an ideal solution as far as children are concerned, since there are alternative ways available of organising double shift schools.

School Size: On an average, a school in the study sample has 24 classrooms. While two schools have 33 rooms, many others have only 8 classrooms. The unrecognised schools are small but have a separate room for each section. Many government schools have multiple sections for the same grade. Therefore, the school size is not a constraint. In fact some of the schools can be classified as over-crowded. Many of the government schools in the study area cannot accommodate more children. There have been instances of admission being refused to children, as there was hardly any sitting place.

Enrolment: The enrolment statistics do not fully reflect the real picture as the admissions were still continuing when the data collection took place. Therefore, the

actual admission, particularly in Grade 1, could be much higher than what has been reported in the data. A total of 8930 students were registered in various grades of the government primary schools. The average enrolment per school was 525 children and the minimum and maximum enrolment was reported as 266 students in one of the NDMC run school to 1001 students in one of the East Delhi schools. Therefore, all the government schools can be described as large. The large schools have certain economies of scale in terms of provision of teachers and facilities but at the same time present a challenging situation for the management. Maintenance of quality of teaching and learning in large schools can be a problem due to the heterogeneity and other associated factors. On the contrary the enrolment in the unrecognised school was small due to the fact that very few families could bear the expenses. By the end of the year there could be 10 to 20 per cent of dropouts due to non-payment of fees in these schools. Therefore, untrained teachers are employed by these schools as they are prepared to work on low salary.

***Pupil-Teacher Ratio and Student Classroom Ratio*:** There are norms for the appointment of teachers and these are related to the enrolment in different sections and grades. Similarly, the class size is also fixed and is usually related to the number of sections/grades in a school. Such norms are easy to implement in large schools as compared to smaller schools where minimum number of teachers, classrooms and other facilities is fixed. The pupil-teacher ratio and student-classroom ratio were calculated for all schools. Out of 16 Government schools, eight schools had teacher-pupil ratio in the range of 30 to 40 , five schools had 40 to 50 and three schools had 70 to 80, considering the fact the admissions were still on and had to continue for another two months. As far as student-classroom ratio (SCR) is concerned, it was observed that around 50 students were sitting in a class in four schools whereas in two schools the number was as high as 70 per classroom. Such large variations have serious implications for the learning outcome as well. Teachers beyond a number would find it difficult to hold classes

in an urban school. There is hardly any space to hold classes in the open in urban areas. Therefore, the constraint of space/classrooms is playing havoc with the teaching-learning outcomes. The agencies have no solution for this problem. It is very difficult for them to get space for additional schools. No one knows how to address the demand of increased population of school going children in fast expanding urban areas. In a city like Delhi, the population would continue to grow even when it is shrinking in the rural hinterlands. The expansion is largely due to immigration rather than the natural growth of the city. The unrecognised schools had low teacher-pupil ratio and that could be one of the reasons for the better performance of the children in mathematics.

***School Organization and Other Characteristics*:** Pre-primary section was not available in all the schools. Six of the 16 government schools had pre-primary section. This was in the form of nursery sections.

Many schools are faced with the shortage of teachers, resulting in large class size. All the schools reported the existence of school timetable and all were reported to be following the same.

Teachers

The sample covered 92 teachers (57 from government schools and 45 from unrecognised schools) from 30 schools under study. The selection of teachers was done according to the classes taught by them. The teachers who taught Grade I and Grade IV in the previous academic year were included in the study. The highlights of the teacher characteristics are as under:

- Out of 92 teachers, 67 were females and 25 were males. Two-third of sample teachers were females in the Government schools and around 80 percent were females in the unrecognised schools.
- Mean age of the selected teachers was 35 years (32 years for males and 37 years for females) in government schools. The mean age for unrecognised

schools was much less and it was 26 years (21for males and 27for females). Teachers of the unrecognised schools were comparatively young in age. Although less experienced and most of them being untrained, they appeared to be more enthusiastic and innovative probably due to the insecurity of the job.

- 81 percent teachers were married in government schools and around 50 per cent were married in the unrecognised school.

- Majority of the teachers (79 per cent) were having qualifications as graduate and above.

- 66 percent teachers had studied mathematics up to X^{th} standard and another 20 percent up to senior secondary level.

- Most teachers had studied Hindi / English during their educational carrier.

- All Government school teachers had acquired professional qualifications prescribed for teaching jobs. 59 percent teachers had acquired graduate level professional qualifications, 7 percent post-graduate level (MEd), and the remaining certificate level professional qualifications. Only 60 percent teachers of the unrecognised schools were trained teachers. It implies that the commitment and the dedication is better indicator of the quality of teachers as compared to the training.

- All sample teachers, except one, were permanent employees of the MCD/NDMC.

- 86 percent Government teachers reported that they have availed of professional development courses/training, which was not the case for the private school teachers.

- 95 percent teachers stated that all classes are held regularly.

- The selected teachers had taught Grades IV and I in the previous academic session and were currently teaching Grade II and Grade V classes. That means the selected teachers had taught the students whose competencies were tested. Thus the teaching styles and teacher behaviour were good approximation of what was experienced by the students under investigation.

- Nearly half of the Government school teachers and around 75% teachers of unrecognised schools were teaching more than one grade during the same academic session.

- Since no subject specialization is required for teaching primary grades, all the four subjects are taught by the same teacher.

- All teachers reported the availability of facilities like blackboards, chalks and dusters. All teachers stated that they use them regularly for classroom teaching- learning.

- While 80 percent Government teachers reported the availability of teacher guides, only 50 percent reportedly were using them regularly. About 14 percent admitted that they have never used the teacher guide for preparation and delivery of subject contents. Another 20 percent used the teachers' guide sometimes. Teachers' guides were not available in unrecognised schools.

- 62 percent Government school teachers and 80 percent unrecognised school teachers stated that dictionaries were available in their schools. However, very small proportion of teachers was using dictionaries regularly (35 percent). 54 percent teachers reported that dictionaries were seldom used and the remaining did not use the dictionaries at all in classroom teaching-learning situations.

- Only 29 percent Government teachers reportedly were using additional teaching- learning materials during the classroom interactions and teaching-learning situations. Most of the private school teachers used them extensively.

- The use of teaching-learning equipment was less than satisfactory. The use of globe, maps, charts and flash cards was made by a small proportion of teachers. Only 15 to 30 percent teachers of the Government schools reported their use but all the teachers of unrecognised school utilised them.

- The Government schools have also been supplied with mathematics and science kits. The use of these kits in the classroom is expected to facilitate teaching- learning. However, about one-third of teachers reported that despite their availability, they were not using these kits in classroom teaching-learning. The study did not seek the reasons for not using the science and mathematics kits but it was learnt that teachers were not comfortable in using the kits in the classroom. Unrecognised schools used blocks, clay etc extensively in their classroom interaction.

- ***Classroom Teaching-Learning Situations***

    - All teachers reported that they used textbooks in the classroom and read from the books and explained the contents to the students. All

teachers also reported that they also asked the children to read from the textbooks in the presence of the teachers. The teachers then explained the contents. Children were also asked to study and read the contents of various topics from the books.

- All teachers reported that they regularly gave homework to children. Practically all teachers reported that the progress of the homework was monitored orally as well as by manual checking of the notebooks.

- All teachers reported that they specially focused on the weak children during the classroom teaching-learning by putting more questions to the weak students. The teachers further reinforced their efforts by teaching the students who were weak in studies.

- Practically all teachers stated that they covered environment and its importance in the lifecycle of human beings. They also stated that their efforts were to make teaching-learning interesting and interactive by adopting modern methods of teaching-learning.

- Teachers also stated that they often consulted the school head teacher or their peer group to strengthen their capabilities in teaching-learning.

- ***Follow Up with Low Performing Students***

  - It is not only that almost all teachers stated that they gave high importance to teaching in the classrooms, they also said that adequate attention was given to provide feedback to the parents of the weak students.

The foregoing analysis of the data provided by the primary school teachers presents an interesting picture. If the teachers are to be believed, they do not leave any stone unturned to ensure for the children to acquire the skills and knowledge expected of them. However, the reality is quite different. If the teachers are performing all their tasks with commitment and due diligence, there is no reason for the children to fail or to perform poorly. An important conclusion that can be drawn from the data provided by the teachers is that perhaps they have not provided the genuine information. Since there is no other means to check on the quality and reliability of the data provided by the teachers, not much credibility is given to the data thus provided.

Lack of research into the classroom teaching-learning situation for primary schools in Delhi is a major handicap to build the model of teachers' interaction in the classroom and the outcome in the achievement tests. Only after the knowledge about teaching-learning styles is adequately generated that some meaningful insights into the teacher training requirements can be acquired.

SECTION V

ANALYSIS OF ACHIEVEMENT TESTS: GRADE 1 & GRADE IV

Mean Achievement Scores: Grade I

According to the prescribed curriculum for Grade I, a child should achieve the proficiency in the counting of objects, addition and subtraction, and preceding and succeeding numbers. To achieve these basic skills, the child needs to have the conceptual clarity and regular practice. Children from the slum areas are primarily dependent upon the school and teachers to make them understand the basic concepts, as there is little or no academic support from their respective families.

Earlier studies have shown relatively higher mean scores for Grade I competencies as compared to Grade IV. The same is true for the present sample of students also. Thus, the issues related to the transition from oral to written mode of communication are also valid for the present study.

The mean score for Grade I competencies was 59.64 percent for mathematics and 55.65 percent for Hindi in the Government schools. However, for the unrecognised schools the mean score for Grade I competencies was 77.5 percent for mathematics and only 35.2 percent in language. Therefore, on the whole, the mathematics competencies were better than language. This is quite in contrast with other findings (Aggarwal, 2000). One major difference, which may have caused such an outcome, is the manner in which the Hindi / English language tests were administered. While the tests were oral, the children were asked to respond by looking at the picture. They were also required to read the same word from the four options given alongside the question. Any mismatch between the two was treated as a wrong answer. This enabled to relate the competencies of visual interpretation with the corresponding word in the text. Many students were able to identify the

picture correctly but were not able to respond to the words. This shows the absence of reading abilities.

Lower Levels of Achievement Among Students Living in Slums

A comparison with an earlier study undertaken by Aggarwal, 2000, showed that the performance levels of the schools serving the slum children was much lower than before. The corresponding mean achievement score for Delhi schools was: mathematics-80.2 per cent and for language (Hindi or English) -78.2 per cent. The standard deviation was not much different for the two subjects. As mentioned above, the corresponding values for the Government schools covered in the present study were 59.64 for mathematics and 55.65 percent for Hindi. For unrecognised school it was 77.5 for mathematics and 35.2 percent for language. The achievement levels of the children from the slums are therefore, lower by about 26 percent in mathematics and 30 percent lower in the medium of instruction (Hindi in the present case in Government schools). For unrecognised schools the difference was of 3 percent only in mathematics and 37 per cent in language (English for these schools). The low level of achievement in schools even in the first year of schooling is a matter of serious concern. The slum children require higher levels of achievement in order to fight for their place in the world of work.

Mean Achievement Score in Mathematics

Mathematics is always perceived a dreadful and difficult subject. Pervious studies on the learning achievement (Aggarwal, 2000; DPEP) have also revealed the gloomy picture of mean achievement scores in mathematics. For the present sample of students, the mean score achievement in mathematics was 59.64 percent for Government schools and 77.5 percent for unrecognised schools.

Low Performing Students in Mathematics

Although the mean scores are relatively low, the variability in individual and aggregated scores continues to be high both within and between schools. Children scoring less than 40 percent in any subject are considered to be under performers. The distribution of students falling in different fractions is shown in Table 5.

Table 5: Distribution of Students by Category of Scores in Mathematics
(Grade I)

Mathematics in Govt Schools				Math in Unrecognized Schools		
Score (Range)	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
0-20	24	5.8	5.8	1	0.4	
20-40	79	19.0	24.8	11	4.7	5.1
40-60	100	24.1	48.9	26	10.8	15.9
60-80	132	31.8	80.7	58	24.3	40.2
80-100	80	19.3	100.0	143	59.8	100.0
Total	415	100.0		239	100.0	

One in every four students in Government schools is an under performer in mathematics. Almost 24 percent of students attained 40-60 percent scores in mathematics in Government schools. Children scoring more than 80 percent were considered as high achievers. As per the MLL, all children should attain 80 percent competencies, which imply almost the same score. In reality, the proportion of children scoring in Government schools more than 80 percent in mathematics test accounted for 19.3 percent. This percentage is very low as compared to the targets. However, in private schools around 60 percent children scored more than 80 percent, which is a very encouraging sign.

Analysis of Responses to Individual Questions

The low levels of achievement in mathematics in Government schools have many implications for improving quality of education through various measures. It also

affects the study of science and technology in higher education. The first and foremost question that needs to be addressed at this stage of analysis is regarding the response of students of Government schools to different type of questions and to determine the hard spots in teaching-learning.

Counting of Objects

The first four questions in the achievement test pertained to simple counting of objects. 95 percent children could answer them correctly. Around one percent children did not respond and around 4 percent answered incorrectly. Therefore, as far counting of objects is concerned, the level of achievement was satisfactory.

Addition and Subtraction

Around 60 percent children of Government schools could do the simple addition and around 18 percent did not respond to these questions. It implies that the real problems in mathematics start with the addition of numbers. When the children were given two-digit subtraction, less than half (49.2%) of them could answer correctly. Therefore, even the concept of addition and subtraction is not fully mastered at Grade 1. For unrecognised schools the results were better. About 85 percent children could do simple addition and around 70 percent could do two-digit subtraction.

Succeeding and Preceding Numbers

The data reveals that most of the children had good grasps over some of the concepts, like succeeding numbers, greater or smaller, whereas about 40 percent Government schools children and 30 percent unrecognised school children could not answer on the related concepts like the preceding numbers. This type of learning outcome is a reflection on the teaching styles. The children are taught forward counting but little attention is paid to recalling the backward numbers.

Response to the Concept of Ones and Tens

It appears that a few concepts, like 'one' and 'tens' were not covered fully. Barely one- quarter of children could answer those questions correctly. Even in unrecognised schools one-quarter children could not answer this question. The same is true of the two-digit addition and subtraction. It can be said that except for counting and simple addition majority of the children could not achieve the competencies in mathematics expected of Grade I learners. This is the cause of particular concern because Grade I is the first year of formal schooling and if the foundation remains weak, subsequent structure cannot be expected to be strong enough to ensure quality learning at higher levels. Therefore, poor quality of learning is one of the reasons for students not completing the primary education cycle.

Mean Achievement Score in Hindi/ English Language

Families with different linguistic, religious and caste backgrounds reside in the same slums after migration. Therefore, there exists a cultural and linguistic diversity among the slum dwellers. It was also observed during the fieldwork that after migration, most of the families in the slums had learnt the use of Hindi as a means of communication. A large number of the school going children happened to have been born in Delhi. Therefore, the gap between the spoken language and the language taught in the school was not much pronounced. However, children were not familiar with the English language therefore the children of unrecognised school performed poorly in language. In the Hindi achievement test (for Government schools) and English achievement test (for unrecognised schools), the children were supposed to recognize the picture and read the corresponding word depicting the picture.

The mean percent achievement score for Hindi was 55.65 and for unrecognised schools the achievement score for English was only 34 percent. This level of

achievement is considered to be much lower than the expected outcome specified under MLL for the primary schools.

The analysis of responses for different questions from the Government schools suggests, the language comprehension skills were not achieved even by one-third of the total children. Children found it difficult to read a few words like (*chatta*, *topi* and *guria*). There is a need to look into the teaching styles in the MCD schools. It was observed that children could recognize the figure and name but when they were told to read its alphabets, they found it difficult to do so. There were a few children who always marked on the same serial number without reading or recognising the particular word. The result of Hindi test has repercussions for other subjects as well. Unless the children are able to read the basic words, they would find it difficult to comprehend the other subjects like Environmental Science, Social Science etc.

Children of unrecognised schools too performed very poorly in language. Majority of the children from these schools could not read the words and after recognising the picture responded in Hindi only rather than in English. Looking at the high achievement score in mathematics, it appears that the methodology of teaching language needs to be looked into analytically.

The foregoing analysis of mean achievement score of Grade I competencies indicates that the performance of children from the slums studying in the government schools was low. In comparative framework, the performance level of students of schools serving slums was lower than of those of government schools. The unrecognised schools serving to the similar kind of population have much better scores in mathematics but poor scores in language. Children from these areas could not understand the English language. It is thus evident that not only it is the school that matters but also an equally important factor is the social and economic

status of the parents of the children. The school management does make a difference even for the children with similar conditions.

Analysis of Achievement Test – Grade IV

As mentioned earlier, language and mathematics tests were conducted for the children of Grade IV. The mathematics test contained 40 items and Hindi/English reading comprehension and word knowledge tests contained 35 items each. The achievement test in mathematics evaluated competencies related to understanding of whole numbers, addition, subtraction, multiplication and division of whole numbers. It also included simple problems of day-to-day life relating to units of money, length, mass, capacity, area and time. Questions related to the use of fractions, decimals and percentages, and basic understanding of geometric shapes; solving some problems related to speed and distance were also included in the achievement tests. For Hindi /English language, two types of tests were administered to the students. While one test tried to assess the grammar knowledge and questions pertained to the synonym and antonym, the other test had the comprehension passages. Four options were given and after reading the passage the children were supposed to mark on the correct answer. The results of the tests are discussed below.

Mean Achievement Score in Mathematics

The distribution of score in mathematics was examined and the results are presented in Table 6.

Table 6: Distribution of Students by Category of Mathematics Scores (Grade IV)

	Score in Govt Schools			Score in Unrecognised Schools		
Score Range	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
0-10	83	22.3	22.3	0		
10-20	78	20.9	43.2	2	0.9	0.9
20-30	81	21.8	65.0	9	4.4	5.3
30-40	61	16.1	81.1	34	16.8	22.1
40-50	44	11.8	92.9	45	22.1	44.2
50-60	19	5.1	98.0	55	26.9	71.1
60-70	6	1.6	99.6	38	18.7	89.8
70-80	1	0.4	100	18	8.8	98.6
80-90	0			3	1.4	100.0
90-100	0			0		
Total	372	100		204		

Question-Wise Analysis

The average score in mathematics of the Government schools was only 25 percent, whereas for unrecognised schools it was 40.1 percent, which was quite close to the Aggarwal's study of government schools in 2000 that had average score of 40.5 percent. The score of slum children was 14 percent lower in the Government schools. This range of scoring is highly dissatisfactory as compared to the expected achievement level of 80 percent and above for 80 percent of students. Around 65 percent children could not get the minimum pass marks. Not even a single child could attain more than 80 percent marks in Government schools and only 3 children from unrecognised schools scored more than 80 percent marks. Questions related to counting of days, problems related to the subtraction of one number from the other, multiplication, unitary method, had a poor response from Government schools; only around 20 to 22 percent answered correctly. Around 30 percent children of unrecognised schools answered it correctly. It appears that the concept of division, LCM, factorisation, either had not been dealt well or had not been explained in the class as only around (10 to 15 percent of Government school

children) could answer it correctly and majority of the students left it blank. Only 13 children out of 372 could answer correctly as to how a fraction could be written in decimals. Around 58 percent children did not attempt the problem pertaining to concepts of fraction. The situation in the unrecognised schools was little better only as around 22 percent answered it correctly. Even the children of those schools found it difficult to answer problems related to LCM, factorisation etc. This means that most of the pupils were very weak in the basic concepts of mathematics.

The contents of the books are arranged in a sequential and graded manner and if a child fails to comprehend any fundamental concept in a particular Grade, it would not be possible for him/her to understand relatively more advanced and complex concepts in the next Grade. It could lead to cumulative deficiency in children for that particular subject. Curriculum developers and teachers who transact the curriculum, should take serious note of the situation and take some remedial measures to improve the achievement level of children in this subject. The data make it evident that a serious modification is necessary in the curriculum and teaching methodology of mathematics. Either the number of hours for the teaching of the subject should be increased or remedial teaching should be introduced for the weak children.

Performance in Language

The performance in language in Government schools was a little bit better as compared to mathematics but it was also not satisfactory and acceptable. Around 43 percent children of Government schools and 25 percent children of unrecognised schools in comprehension attained less than the average score of 30. ‘No responses’ in case of language tests were much less as compared to mathematics. The results of Hindi grammar and comprehension are presented in Table 7

Table 7: Distribution of Students by Category of Scores in Comprehension

	Score in Govt Schools			Score in Unrecognised Schools		
Score Range	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
0-10	58	15.6	15.6	1	0.5	
10-20	40	10.8	26.4	6	2.9	3.4
20-30	59	15.9	42.3	43	21.1	24.6
30-40	60	16.1	58.4	67	32.8	57.4
40-50	31	8.3	66.7	42	20.5	77.8
50-60	37	9.9	76.6	5	2.4	80.3
60-70	39	10.5	87.1	34	16.6	97.1
70-80	19	5.1	92.2	6	2.9	100.0
80-90	17	4.6	96.8	0		
90-100	12	3.2	100.0	0		
Total	372	100.0		204		

Around 13 percent children scored more than 70 per cent in the comprehension whereas only around 3 percent attained more than 70 per cent in English language in unrecognised schools. The results of Hindi language makes it clear that although the migrants are from different linguistic backgrounds yet the children do not find much problem with Hindi as a medium of instruction whereas they find English language more difficult to comprehend.

The results for Hindi/English Grammar are given in the following Table 8.

Table 8 : Distribution of Students by Category of Scores in Word/Grammar

	Score in Govt School			Score in Unrecognised School		
Score Range	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
0-10	45	12.1	12.1	2	0.9	
10-20	53	14.2	26.3	1	0.5	1.4
20-30	34	9.1	35.4	8	4.0	5.4
30-40	57	14.7	50.1	7	3.4	8.7
40-50	44	12.6	62.7	43	21.2	29.9
50-60	72	19.4	82.1	63	30.9	60.8
60-70	21	5.6	87.7	45	22.2	82.8
70-80	21	5.6	93.3	15	7.4	90.2
80-90	11	2.9	96.2	16	7.9	98.1
90-100	14	3.8	100	4	1.9	100.0
Total	372			204		

It is seen from the table that around 35 percent children scored below the range of 30 percent in Government schools but for unrecognised schools it was only 5.4 percent. The grammar results make it clear that children of the unrecognised schools find it easy to mug up the synonym and antonym but are not able to understand the comprehension passage. Majority of the children from the unrecognised schools scored in the range of 50 to 80 scores. The above figures clearly point out that the learning outcomes of slum children are much below the expectations. Poor comprehension leads to disinterest in studies and failure in a particular class ultimately leads to dropout from the system. The above scoring pattern also puts a question mark on the universalisation of primary education. It seems meaningless to have half literate graduates ultimately lapsing to illiteracy. It is the wastage of resources both in terms of humans, time and money. However, this is not to suggest that we should not strive for the goal of UEE. Appropriate

interventions and strategies should be devised to tackle this problem of under-achievement.

A comparison between the scoring patterns of Grade I and Grade IV presents a distinct picture. The following points emerge from the comparison:

- The average achievement level was much lower in Grade IV as compared to in Grade I. This was true of both for language and mathematics competencies.
- The achievement level of the slum children of Government schools was much low as compared to children of other Delhi schools (Aggarwal, Delhi, 2000).
- The score in mathematics of unrecognised schools serving the similar kind of socio-economic disadvantaged groups was better than the Government schools.

The following factors could be responsible for the above phenomenon:

- Tests for Grade I standard were oral and for Grade IV were written. Children were better in expressing themselves to the oral questions but found it difficult to answer in writing.
- The test for Grade IV competencies may be more difficult as compared to Grade I competencies or vice versa. Since both the tests were standardized and validated, these differences should not be significant.
- The level of teaching deteriorates as children progress through various grades. Children do not practice and therefore are not able to cope up with syllabus, resulting into poor comprehension.
- A peculiar phenomenon of the slum children is that they remain absent for a long time due to their visit to their native places. When they come back, they have missed out studies for those days. The loss cannot be compensated, as they have no academic support from their families, leading to low achievement.

SECTION VI

CONCLUSION AND POLICY OPTIONS

Pursuit of better performance has become a key factor for individuals and nations. The desire for a higher level of achievement has put tremendous pressure on the students, teachers and the education system itself. Quality of education has become a major area of concern. Mere quantitative expansion is not the target but the achievement of learning skills of comparable standards is the focus of educational system of any country.

The goal of the basic education is to give students the skills to communicate adequately, to solve basic mathematical problems and to apply this knowledge to everyday situations. Children should understand what they read and be able to write. This is indispensable not only for acquiring the basic competency but also to continue learning and be part of the society that operates on the basis of written communication. Once basic knowledge is obtained, higher levels of understanding can be reached by complimenting what students know, with exercises, correlation, differences, inconsistencies, a search for information and willingness to learn from mistakes. As far as the output at the primary level is concerned, it is expected that all children are able to attain the learning achievement levels in all the subjects, corresponding to their grades. In practice it has been observed that the achievement level of students in primary school is poor. Various studies conducted under the DPEP have shown that a large percentage of children have low achievement level and only very few children attain 80 percent levels of achievement in various subjects. A study conducted by Aggarwal in Delhi schools observes that the schools managed by MCD reported the lowest mean scores. In the case of mathematics test based on Grade IV competencies, around 50 percent students could score less than 40 percent. (In the case of 13 percent learners, the mean achievement score was less than 20 percent in MCD schools. This is a significant

proportion indeed and cannot be overlooked). Very few studies have been attempted to assess the learning achievement of the children of slum areas. Knowing the inequities in the Indian social, economic and education system, an attempt has been made to assess the achievement level of slum children in the government primary schools and unrecognised private schools. Information was gathered from six slums of Delhi, about various input indicators like the socio-economic and educational background of the child's family, teacher's professional and academic qualifications etc. The details about the school infrastructure, teacher-pupil ratio, availability and utilisation of teaching aids were collected, as these are the significant inputs to determine the learning achievement level.

The present study also looked into the facilities available to the selected schools and gathered information on the available physical infrastructure. It further probed whether, given the schooling infrastructure and facilities, the children from slums could have access to good quality education or not, and whether there were any differentials in terms of quality of access, provision of resources, which contribute to the learning achievement levels.

The analysis of the six selected slums clearly reflects that the slums are bereft of necessary physical and civic amenities, with no schooling facilities or with poor schooling facilities. The plans have been made to provide schooling in the difficult terrains and hilly areas but no provision has been made for the marginalized population of urban areas with regard to the availability of schools to these children in the neighbourhood or within slum areas. The schools, which are provided to them, have poor infrastructure, over-crowded and teachers are not trained to deal with the learners who reside in temporary settlement with poor physical facilities. The socio-economic backwardness is further exacerbated by the poor quality schools available to these children. The data collected on achievement competencies on the field collaborates this hypothesis.

The data revealed that the performance of the slum children was much below the expected levels in both the subjects and in both the grades. Children of unrecognised schools have performed much better than the Government schools children in mathematics but not in language. Most of the unrecognised schools have English language as medium of instruction and probably these children could not get familiar with this language. The achievement in mathematics is significantly lower than the language in Grade IV. This is true for most of the schools. The low achievement specially 'no response' is a matter of serious concern and needs special attention of curriculum developers and translators. The achievement scores based on competencies of Grade IV were lower than those obtained by learners in Grade I. Besides the complexities of concepts and subjects, the transition from oral to written mode of communication and evaluation may be one of the factors responsible for this pattern of scoring. Low educational qualifications of the teachers in mathematics could be one possible reason. Low motivation of the teachers to teach the children of poor socio-economic background and low educational status of the mother could be another probable cause. The poor achievement in mathematics for a large proportion of children requires further probing and investigation. If the remedial measures are not initiated, the quality of education cannot be assured. The analysis of response patterns for individual questions has identified the competencies on which the special emphasis should be given in order to bring a conceptual clarity among the school children. There is a need to move from the traditional modes of teaching to modern methods of teaching. When we compare the achievement results of unrecognised schools with that of Government schools it is clear that with small and inadequate infrastructure, less financial resources and untrained teachers with low salaries, children of unrecognised schools are performing better especially in mathematics than those of the Government schools.

Policy Options

Generally, the municipal corporations are responsible for the provision of primary education facilities within the municipal boundaries. These provisions are made from the municipal budget, which is under severe constraints for most of the municipalities. Moreover, each municipality follows a different set of norms for opening and maintenance of primary schools. Many suggestions have been made to improve the school effectiveness in municipal areas. Some of these are:

- Establishment of norms for opening and upgrading of schools, provision of teachers and other facilities for the schools located within the municipal limits;
- Motivation of teachers for understanding the problems of slum children. Special training of teachers is required to ensure that the problems of urban children are properly tackled. The urban children face special problems in the form of child abuse, danger of infections due to unhygienic slum conditions. Teachers need to make them aware about the importance of personal and environmental cleanliness.
- Developing a network of government and private schools to share common resources. Co-operation of private school teachers and volunteers should be sought for helping these children in increasing their basic competencies.
- The NGOs and self-help groups operating in the slums can be mobilised to organise remedial teaching at some central locations in the slums. This will build confidence among the children who are not able to keep pace with others.
- The present scenario demands that teachers should make the children understand that classroom is a safe place to experiment. Teachers should encourage children to take risks, to have courage to explore, to keep time for thinking and reflection and to generate in them the capacity to concentrate. If the children are provided with a greater friendly space to learning through joyous activities, attractive texts and materials and free interaction with the teacher and their peer group, the learning competency would greatly improve. Teachers should be trained to manage the classroom without the use of rods.
- The slum children have a peculiar problem as they visit the hometown generally during the harvesting season with their parents and overstay there during the academic session. Remedial teaching should be arranged as most of them have the similar time and period of their absence. The school days otherwise should be adjusted accordingly.

- The data from the field reveals that certain concepts are either not dealt or hurried through in the class. Members from the community should be involved for the monitoring of the coverage of curriculum.

- To improve the competency in mathematics, serious modification is needed in the curriculum and teaching methodology of mathematics. Teachers should give assignments to the children on each topic and they should be discussed in the classroom. Few solved sample paper on each topic should be circulated amongst the students.

- For improving the competencies in language, audio and video-cassettes should be used. Children should be given the simple storybooks to read and teacher should take the feedback from the children.

- To improve the competency of language in unrecognized schools it is suggested that they should keep Hindi as medium of instruction and English language is kept as a separate subject. Curriculum and teaching methodology of English language needs modification.

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