

Executive Summary

OBJECTIVE

The Education is intended to develop basic learning skills, reading, writing, arithmetic and life skills, necessary for the children to survive and improve the quality of life. During childhood, developments in the domains of literacy and numeracy take place through acquisition of basic learning competencies (BLC). These competencies represent levels of learning in a particular subject comprising basic knowledge, understanding, abilities, interests, attitudes and values. The competencies are essentially to be acquired by the end of a particular stage or standard of education. As far as the primary stage is concerned it is in fact the foundation stage for the development of basic competencies.

Primary education in particular has remained a serious concern of the nation since independence. A large number of programmes and schemes have been initiated both by the union and state governments to realize the goal of the universalization of primary education. This has led to the opening of a large number of schools with emphasis on enrolment and retention coupled with focus on quality of education. The quantitative expansion seems to have diluted the quality of education. Research studies conducted both at national and state levels point out low level of learning in schools and the situation becomes worse as children move to higher classes. Poor level of achievement at primary stage is a big de-motivating factor resulting in repetition and drop out from the schools.

Though there are a number of factors which determine the quality of education, the most vital one that attracts the attention of one and all is the level of achievement. These levels of achievement for any nation are so important that they need to be known periodically to keep a tab on the general health of the education system. Such a requirement warrants the conduct of periodical achievement surveys at different stages of school education in order to initiate remedial measures for improving the quality of education. National Policy on Education (NPE) - 1986 recommended the conduct of periodical achievement surveys at all stages of school education. This has also been reiterated in the National Curriculum Framework for School Education-2000.

Since 1990 no major achievement study on all India basis has been undertaken. More than a decade has elapsed and a concern has been expressed both at the state and national levels for conducting a large scale achievement survey to know the health of our education system. NCERT has also been thinking of institutionalizing periodic achievement surveys. Therefore this survey undertaken. The objectives of this study were:

- To study the level of achievement of children in Language, Mathematics and Environmental Studies at the end of Class V
- To study the differences in achievement, categorywise, areawise and genderwise.
- To study the influence of intervening variables like home, school and teacher on students achievement.

TOOLS

For capturing the learning attainment of students across the states, tests in the three main subjects were developed and standardized. These tests were produced in 17 Indian Languages and used in different states/UTs. Each test used in achievement survey had 40 multiple choice items. In EVS most of the test items were based on concepts related to daily life activities, environment, health, hygiene, food functions, powers of different organs of democracy etc. In Mathematics the test items broadly covered number system, four fundamental operations, problems involving, HCF, LCM, decimals, fractions, percentage and its simple applications, sale-purchase, average, mensuration, and problems on geometrical figures etc. The Language test had two parts. The first part contained 20 items testing usage and grammar. A number of competencies testing grammatical structures, use of appropriate vocabulary, use of correct spelling and recognition of errors etc. were covering this part. The second part of the test focused on the reading ability of the students. It contained three different activities. The first activity was based on the comprehension of different signs and hoardings that children come across at different places. In the second reading activity, a school time table has been given and the children have to interpret it. There were two unseen passages which were not only interesting from students point of view but also value oriented. The questions on these texts were set to evaluate the students ability to locate informations, grasp ideas and indentify the theme of the passage, identify relationships between ideas, events, characters etc. and to interpret ideas and events. To study the influence of school and home environment on students achievement, three questionnaires e.g. School Questionnaire, Teacher Questionnaire and Pupil Questionnaire were also developed and used for collection of relevant information.

SAMPLING

Multistage stratified random sampling design was used for the selection of districts, rural blocks, urban areas, schools, teachers and pupils from each State and Union Territory of the country. It was planned to select 10% districts with a minimum of 4 districts from each state except Goa which had only two districts and one of them was selected. Each Union Territory was considered as one district. Finally, 116 districts were selected for the survey. From each selected district, four rural blocks and three urban areas were selected. Further, from each district a maximum of 50 schools were selected both from rural blocks and urban areas on proportionate basis. From the sampled school, a maximum of 30 students of class V were selected. Teachers teaching EVS, Mathematics and Language to these students were selected for filling teacher questionnaire.

Out of 35 states/UTs, Jharkhand state and three UTs i.e. Lakshadweep, Dadar and Nagar Haveli and Daman and Diu could not participate in this survey. Meghalaya state participated in the survey but could not be included in this report as the data received was incomplete and of very few schools. Therefore, the data from 88,271 students, 10,796 teachers, 4787 schools from 105 districts spread over 27 states and 3 UTs was collected.

ANALYSIS

Keeping in focus the objectives of the achievement survey, a detailed 'Framework for Analysis of Data' was developed. This framework provided details regarding data entry, data cleaning, data verification, preparation of different files, format of various tables and use of various statistical techniques for getting the answers to the some

basic questions often raised about the school education. The data was analysed to know the profiles of schools, teachers and students. The achievement of students was analysed to study the differences in achievement among social groups areas, genders within and across the states. Besides, the influence of intervening variables such as school, teacher and home on students' achievement was also analysed.

PROFILES

School Profile

In rural areas pre primary classes were attached with about 27% schools whereas in urban areas, these were attached with about 28.5% schools. Facilities related to teaching-learning process such as maps were available in approximately 85% schools, children books, globes and charts were available in 77% to 80% schools. Magazines, journals and newspaper were available only in 35% schools. Infrastructural facilities i.e. chairs for teachers, school bell, blackboard, chalk and duster were in 91% to 95%, water pitcher, ladel and glasses were in 72% but musical instruments were available in only 36% schools. Ancillary Facilities namely Computer and TV were available between 8% to 16% separate toilet for girls was in 39%, first-aid-kit and electric connection were in 40%, safe drinking water was available in about 73%, toilet facilities and immunization facilities were available in 55% to 58%, annual medical check-up facilities for students was available in 61% schools. Competency Based Teaching Materials such as text books, teacher's handbook and teaching aids were more available in 2001 as compared with 1998. All incentives schemes were equally availed by both boys and girls. However, mid- day meal and free textbooks were better availed as compared to other incentive schemes. The average number of working days in schools was approximately 213 days. On an average, schools were having 7 periods in a day of approximately of 40 minutes duration. Overall 65% schools had PTAs, followed by 56% VECs, 50% SMCs and 20% AECs.

Teacher Profile

Overall number of female teachers was more than the male teachers. In urban schools female teachers were more than twice than male teachers. However, the trend was reverse in rural schools. The average number of teachers per school in rural and urban areas was approximately 6 and 9 respectively. Average pupil teacher ratio was approximately 39:1. Approximately 1% teachers had qualifications below Class X level. Overall, more than 50% teachers were degree or PG degree holders. The percentage of female teachers holding PG degree and secondary certificate was more than male teachers. The percentage of male teachers who studied Mathematics and Science subjects upto degree level was more than female teachers. But the trend was reverse in case of Language and Social Sciences. Besides, the percentage of male teachers who had studied Mathematics, Language and Science below Class X was less than female teachers. Approximately 67% teacher had diploma/certificate in Primary/Elementary Education and approximately 33% teachers had B.Ed. degree. Very few teachers were having M.Ed degree. Majority of teaching aids were available to more than 85% teachers in schools except flash cards, science kit and mathematics kit. Overall teaching aids were available more to female teachers than male teachers. In-service training was provided by Block Resource Centres, DIET, School Complexes, Cluster Resource Centre and by SCERT. But minimum number of teachers were trained by School Complex. Maximum in-service training programmes were conducted on 'Competency Based Teaching-Learning and it was followed by Content Enrichment, Activity based joyful learning and 'General Training Programmes'. But, minimum

programmes were conducted on 'Use of Instructional Material'. Further, approximately 46% training programmes had average effectiveness in terms of utility of knowledge gained during training programmes. However, 37% programmes were rated as 'Highly' useful. The impact of these training programmes was rated as average by 48% to 51% teachers in different subjects. Improvement in teaching-skills in all subjects due to these training programmes was rated 'High' by 31% to 35% teachers. Out of total sampled teachers approximately 50% teachers were without any in-service training during last three years (2000-2002). The percentage of male teachers who have not attended any in-service programme was more than female teachers. Teachers both in rural and urban areas were getting maximum assistance from Head of the school and sometimes they were also getting assistance from other sources like DIET etc.

Pupil Profile

The medium of instruction for approximately 80% students in the schools was same as the language spoken at home. About 18% fathers and 39% mothers of the students were illiterate. Only 5% fathers and 2% mothers were having degree or higher educational qualification. Overall educational status of mothers was poorer than fathers. In rural areas majority of mothers were housewives and fathers were farmers. In urban areas also majority of mothers were housewives but fathers were skilled workers. Only few mothers and approximately 5% fathers were Manager/Senior Officers. Overall, girls were getting better academic assistance than boys in both rural and urban areas from all family members. In urban areas girl's mothers were more helpful than elder brother/sister and others. Approximately 90% students were attending school for more than 70% of working days. Only 3-4% boys and girls were attending schools less than 60% of total working days.

STUDENTS ACHIEVEMENT

A cursory glance of the achievement of class V students in EVS, Mathematics and Language showed that the distribution of scores covered the entire range from 0 to 100 percent. However the overall average performance of students in EVS, Mathematics and Language was 50.30%, 46.51% and 58.57% respectively. The number of children who scored in the range (0-10) percent were in EVS (523), in Mathematics (1176) and in Language (250). The maximum number of cases in EVS (16113), in Mathematics (18,123) and in Language (16,489) were in the range 30-40 percent, 30-40 percent and 50-60 percent respectively. The 48.52% students in EVS, 41.26% in Mathematics and 69.75% in Language scored more than 50% marks whereas 34.25% in EVS, 27.69% in Mathematics and 51.07% in Language scored more than 60% marks. Students achievement was better in Language than EVS which in turn was better than in Mathematics.

The average achievement in EVS was 50.30% with standard deviation 20.67. The performance of students across the states varied from 34.93% in Himachal Pradesh to 73.60% in Manipur. There were as many as 17 states/UTs who performed below the national average achievement of 50.30%. Himachal Pradesh, J & K and Goa are the three states who performed below 40% level. The average achievement of 4 states i.e. Arunachal Pradesh, Bihar, Manipur and Tamil Nadu was found to be more than 60%. Eleven states displayed achievement between 50 and 60 percent. The standard deviation varied from 12.01 in Himachal Pradesh to 23.43 in Madhya Pradesh.

The average achievement in Mathematics was 46.51% with standard deviation 21.30. The score of students across the states varied from 30.48% in Goa to 74.46% in Manipur. There were as many as 17 states/UTs whose average was below the national average of 46.51%. The average achievement in 8 states/UTs was even less than 40%. Only 3 states, Manipur, Bihar and West Bengal demonstrated more than 60% achievement. Four states demonstrated achievement between 50 and 60 percent. The standard deviation varied from 13.49 in Goa to 23.92 in Nagaland.

The average achievement of students in Language was 58.57% with standard deviation 18.30. The performance of students across the states/UTs varied from 44.68% in Goa to 73.39% in Manipur. There were as many as 15 states/UTs who performed below the national average of 58.57%. The average achievement in 12 states was found to be more than 60% and of them 3 demonstrated more than 70% achievement level. The standard deviation varied from 10.38 in Mizoram to 21.91 in Madhya Pradesh.

The level of achievement of students in EVS, Mathematics and Language across the states showed that only Manipur in EVS and Mathematics, and Manipur, Tamil nadu and West Bengal in Language displayed performance above 70% level. Majority of states had average achievement between 40-60% in EVS, 40-50% in Mathematics and 40-60% in Language. Three states in EVS and eight states in Mathematics performed below 40 percent level.

In all the states except in Bihar, Chandigarh, Manipur and West Bengal the achievement in Language was better than EVS followed by Mathematics. In Bihar, achievement in EVS was better than Language followed by Mathematics. In Manipur, achievement in Mathematics was better than EVS and in all three subjects achievement crossed 70% mark. In West Bengal, achievement in Language was better than Mathematics followed by EVS. In Bihar, the achievement of students crossed 60% mark in all the three subjects. The nation vide average achievement in decreasing order was Language (58.57%), EVS (50.30%) and Mathematics (46.51%).

Genderwise and Areawise Achievement

In Environmental Studies, the performance of urban students, both boys and girls was significantly better than their counterparts in rural areas. The achievement of boys was significantly better than girls. In rural areas boys performed significantly better than girls.

In Mathematics, the performance of urban students, both boys and girls was significantly better than their counterparts in rural areas. The achievement of boys was better than girls both in urban and rural areas.

In Language, the achievement of urban students, both boys and girls, was significantly better than the rural students. In rural areas boys performed significantly better than girls whereas in urban areas girls performed better than boys.

In Grammar & Usage component of Language test, the achievement of urban students, was significantly better than the students from rural areas. In rural areas boys performed significantly better than girls. However, in urban areas there was no significant difference in achievement between boys and girls.

In Reading Comprehension component of Language test, the achievement of urban students, both boys and girls, was significantly better than their counterparts in rural areas. In rural areas boys performed significantly better than girls whereas in urban areas girls performed better than boys.

Genderwise and Categorywise Achievement

In Environmental Studies, the achievement of students, both boys and girls of Others category was better than their counterparts in ST category followed by SC category and the differences in achievement were significant across the categories. Within categories, boys performed significantly better than girls.

In Mathematics the achievement of students, both boys and girls of Others category was better than their counterparts in SC category followed by ST category and the differences in achievement were significant across the categories except between girls of ST and SC. Within each category, boys performed significantly better than girls.

In Language the achievement of students, both boys and girls of Others category was better than their counterparts in ST category followed by SC category and the differences in achievement were significant across the categories. In SC category, boys performed significantly better than girls.

In Grammar & Usage component of Language test the achievement of students, both boys and girls of Others category was better than their counterparts in ST category followed by SC category and the differences in achievement were significant across the categories except between boys of ST and SC categories. In SC and ST categories, boys performed significantly better than girls.

In Reading Comprehension component of Language test the achievement of students, both boys and girls, of Others category was better than their counterparts in ST followed by SC category and the differences in achievement were significant across the categories. In SC category, boys performed significantly better than girls.

Areawise and Categorywise Achievement

In Environmental Studies, the achievement of both rural and urban students of Others category was better than their counterparts in ST followed by SC category and differences in achievement were significant across the categories. Within each category, urban students performed significantly better than rural students.

In Mathematics, the achievement of both rural and urban students of Others category was better than students of SC and ST categories and differences in achievement were significant across the categories except between rural ST and rural SC. Within SC and Others categories, urban students performed significantly better than rural students.

In Language, in rural areas, Others performed significantly better than both SC and ST students. In urban areas, ST performed better than Others followed by SC students and the differences in achievement were significant across the categories. Within each category, urban students performed significantly better than rural students.

In Grammar & Usage component of Language test in rural areas, Others performed significantly better than both SC and ST students. In urban areas, differences in achievement were significant between Others vs SC and ST vs SC favouring Others and ST respectively. Within each category, urban students performed significantly better than rural students.

In Reading Comprehension component of Language test in rural areas, the achievement of Others was better than ST followed by SC students and differences in achievement were significant across the categories. In urban areas, ST performed better than Others followed by SC students and differences in achievement across the categories were significant. Within each category, urban students performed significantly better than rural students.

CONTRIBUTION OF INTERVENING VARIABLES

School related variables

Availability of competency based handbook, workbook, textbook, availability of teaching aids, number of working days in a year, community participation, teaching time and physical facilities influence the learning achievement of children in the three subjects. The positive association of availability of competency based workbook, teaching aids, community participation and physical facilities with the three criteria indicates that use of competency based workbook, availability of teaching aids, active participation of community and physical facilities help the children in improving their learning achievement in the three subjects. The contribution of few is significant but at varied

from state to state. Higher pupil teacher ratio has not been adversely affecting achievement in all States/UTs.

Teacher related variable

Teaching aids & teaching style of teachers, help and academic from school organization and teachers' qualification influence the learning achievement of children in the three subjects. The positive association of these variables with the three criteria indicates that use of teaching aids and teaching style of teachers, academic help from senior colleagues of school organization and teachers' qualification helped the children in improving their learning achievement in the three subjects

Pupil related variable

Availability of Teaching-learning material, good schooling practices and academic assistance provided by family members, percentage attendance of students in school, age of children and educational status and occupation of parents influence the learning achievement of children in the three subjects, EVS, Mathematics and Language. The positive association with availability of teaching learning material, schooling practices and academic assistance provided by family members and percentage attendance of students in school with the three criteria indicates that these help the children in improving their learning achievement in the three subjects through the contribution varies from state to state.

The negative association of age of students, and detention with the criteria indicates that children of higher age score poorly. It is possible that the some children are repeaters, inspite of 'no detention' policy in vogue.

To sum up, some of these variables have contributed significantly in some states otherwise the contribution is there but not appreciable.