National Achievement Survey of Class III - Achievement Highlights

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Abstract- *National Achievement Surveys (NAS) are the national assessment of what students know and can do in various subjects at elementary and secondary education in India. The National Policy on Education, 1986 emphasises periodical Achievement Surveys at different stages of school education as a means to assess the health of the education system. To know the impact of the various inputs provided to the system through different regional and national schemes, a study of class III students' achievement level in Mathematics and Language has been conducted. The researcher is presenting achievement of students in Mathematics and Language and the variations in gender wise and location wise performance based on the data collected through achievement tests administered to 1,04,374 students, questionnaires to 7,046 schools covering 298 districts of 34 States and Union Territories of India.*

Keywords: Achievement, National Achievement Survey, Sarva Siksha Abhiyan, Classical Test Theory, Item Response Theory

Introduction

With the enactment of 'The Right of Children to Free and Compulsory Education' (RTE) Act 2009, Government of India is obligated in ensuring eight years of quality education for all children in the age group 6-14 years. Over the past decade or so since the beginning of the Sarva Siksha Abhiyan (Education For All) programme, there has been a significant increase in the number of schools and in the enrolment of children in government schools, most notably a large proportion of children from amongst Scheduled Castes, Scheduled Tribes, Muslims and girls have joined the schooling system. Most of these children are also first-generation learners, coupled with the fact that they also come from very impoverished socio-economic backgrounds, which present unique challenges for the education system to adequately support the diverse learning needs of students. While high enrolment and diverse classrooms is a sign of healthy inclusion and participation in the education system, it is equally important that all children receive a good quality education. One of the key indicators of quality education is to understand whether children's learning achievement is improving over time in an equitable manner.

To monitor improvement in children's learning levels and to periodically assess the health of the government education system as a whole, the National Council of Educational Research and Training (NCERT) has been periodically conducting National Achievement Surveys (NAS) since 2001, for Class III, V and VII/VIII. The NAS report gives a national and

state-level picture, rather than scores for individual students, schools or districts. The purpose of these assessments is to obtain an overall picture of what students in specific classes know and can do and to use these findings to identify gaps and diagnose areas that need improvement.

Introduction of Best Practices in Assessment

In NAS Cycle 3, an approach known as 'Item Response Theory' (IRT) was used, in addition to the classical approach. In classical approach, also known as Classical Test Theory (CTT) the outcomes are reported simply as the proportion or percentage of correct answers. IRT has been used keeping in line with the best practice of major international surveys such as Programme for International Student Assessment (PISA), Progress in International Reading Literacy Study (PIRLS) and Trends in International Mathematics and Science Studies (TIMSS). IRT uses mathematical models that assume a statistical connection between the difficulty level of the test item, the ability of the student and the probability of that student being successful on a particular item. For example, students with higher ability scores are more likely to succeed on any item than their peers of lower ability.

Another important point of deviation from the previous two surveys was related to test construction and administration. It was felt that since Class III children are too young to read questions on their own and respond the MCQs on their own, it does not indicate a true measure of their ability. Therefore, an element of scaffolding was introduced where-in the field investigator readout the MCQ items loud to the child. The element of scaffolding introduced was standardized to reduce inter variability amongst the field investigators.

Achievement tests were designed to assess the core contents of curricular areas which required a large number of items to be tested. At the same time, assigning a large number of items to each student may affect the quality of their responses. For this purpose, multiple booklets having common/anchor items were developed, which could then be linked together. It helps in limiting the number of items administered to each student.

Figure 1: Cycles of Class III National Achievement Surveys conducted under SSA

2003-2004	2007-2008	2012-2013	2014-201
Cycle 1 (formerly BAS)	Cycle 2 (formerly MAS)	Cycle 3 (NAS)	Cycle 4 (NAS)
Class III	Class III	Class III *	Class III **

*** The findings of the Cycle 3, Class III (NAS) are reported herein.**

**** Cycle 4, Class 3 is also completed.**

Objectives

- To study the learning achievement of Class III students in Language and Mathematics.
- To study the level of achievement of students in Language and Mathematics.
- To study the difference in achievement with regard to gender, location and social groups.

Methodology

NCERT is responsible for planning, developing tools, conducting the surveys and reporting the results under SSA by the Ministry of Human Resource Development (MHRD). For NAS Class III (Cycle-3) a sample comprising 1,04,374 students in 7,046 schools across 298 districts from 34 States and Union Territories (UTs). The subjects covered were Language and Mathematics.

Development of Tools

For collecting the information for the survey, subject tests and three questionnaires were developed.

Tests

For any large survey, the tools employed need to be simple, understandable, valid and reliable. The first exercise, hence, was to collect the syllabi and the textbooks of Language and Mathematics from all the states/UTs. These were then analysed from the point of view of the content areas covered and abilities acquired. The common core content was identified for developing the tests. Based on the analysis, assessment frameworks were developed in both subjects. The frameworks described the content areas and abilities covered in the tests, the number and type of items used for testing and other details of the exercise.

Questionnaires

For this survey, three questionnaires were developed to collect information on a) schools, b) teachers and c) pupils and their backgrounds.

Development of Subject-specific Tools

In language, listening, recognition of the correct word for picture and reading comprehension abilities were tested. The work for the test development was guided by the framework developed for the language test. For development of the tests, two sub-groups were formed, one for English and the other for Hindi. Thus two master copies were prepared which were then translated to 16 languages. For generating items, examples from various sources including National Assessment of Educational Progress (NAEP) and Early Grade Reading Assessment (EGRA) were referred. The items developed were piloted to ensure the functionality of the items. Finally, two forms were prepared both in English and in Hindi, each with 25 items.

In mathematics, key content areas such as knowing and using number names, learning and understanding the values of numbers (including basic operations), measurement, data handling, money, geometry and patterns were included. The work was guided by the assessment framework for the Mathematics. For development of items, NCERT textbooks and examples from international sources such as NAEP and TIMSS were consulted and discussed. The Working Group drafted more than 100 items. All these items were peer reviewed. These items were piloted and finally 50 items were considered for two test forms with 30 items out of which there were 10 anchor items. The final two test forms were then translated into 16 languages.

Sample Design

The target population for the survey was all Class III children studying in government, local body and government-aided schools. In general, the sample design for each state/UT involved a three-stage design which used a combination of two stage probability sampling methods. In the first stage, districts were selected using Probability Proportional to Size (PPS) sampling principle. In the second stage, the requisite number of schools was selected in the chosen districts by PPS principle. In the third stage, the required numbers of students in each school were selected using the Systematic Random Sampling method. In schools where Class III had multiple sections, an extra stage of selection was added with one section being sampled at random.

For sampling frame the flash statistics of 8th AISES (2009) was used. The survey was intended to cover all 35 states and UTs, but the Union Territory of Lakshadweep did not participate in this endeavour.

Administration of Tools

In conducting NAS Class III survey, NCERT took the help of state agencies like SCERTs and SIEs to coordinate survey activities in the states/ UTs. Each participating state designated a state coordinator who had the responsibility of implementing the NAS in his/her state/UT in accordance with the NAS guidelines. Further, each state coordinator collaborated with the district coordinators for conducting the main achievement survey. In this survey, state coordinators, associate state coordinators and district coordinators were trained by Educational Survey Division of NCERT faculty on how to collect data in the field. Besides, hands on experiences were provided to them. In each selected district, approximately 10 to 12 teams of field investigators were appointed. Each team comprising of two field investigators were given rigorous training about selection of section and students in the sampled schools and administration of tools.

During the test administration, sampled students responded on test booklets itself. Later on, student responses were transferred to a separate response sheet by the field investigator. The response sheets were then dispatched by the state coordinator to NCERT for scoring and analysis.

Reporting

The performance on tests items are reported using ‘scale scores’calculated using IRT and also percent correct obtained during IRT analysis. Most importantly, the scale has been fixed so that results from future surveys can be reported on the same scale. It also provides adequate linking procedures through common items. It means, a score of, say, 270 today will be equivalent to a score of 270 in future surveys, even though the items used are not the same. This is obviously an advantage over using percentage correct scores, where there is no rationale for assuming that a score of 70% in one test will be equivalent to a score of 70% in another test, administered on two different occasions.

Table: 1 shows state-wise performance in Language and Mathematics

Performance in Language			**Performance in Mathematics**		
State/UT	**Percentage**	**Difference**	**State/UT**	**Percentage**	**Difference**
A and N Islands	66	↑	A and N Islands	68	↑
Andhra Pradesh	64	●	Andhra Pradesh	69	↑
Arunachal Pradesh	60	↓	Arunachal Pradesh	62	↓
Assam	63	↓	Assam	66	●
Bihar	53	↓	Bihar	57	↓
Chandigarh	59	↓	Chandigarh	60	↓
Chattisgarh	51	↓	Chattisgarh	53	↓
Dadra and Nagar Haveli	73	↑	Dadra and Nagar Haveli	74	↑
Daman and Diu	74	↑	Daman and Diu	77	↓
Delhi	61	↓	Delhi	63	↓
Goa	71	↑	Goa	66	↓
Gujarat	67	↑	Gujarat	69	↑
Haryana	57	↓	Haryana	62	↓
Himachal Pradesh	65	↑	Himachal Pradesh	69	↑
Jammu and Kashmir	56	↓	Jammu and Kashmir	61	↓
Jharkhand	58	↓	Jharkhand	65	↓
Karnataka	70	↑	Karnataka	73	↑
Kerala	70	↑	Kerala	70	↑
Madhya Pradesh	58	↓	Madhya Pradesh	64	↓
Maharashtra	70	↑	Maharashtra	69	↑
Manipur	69	↑	Manipur	71	↑
Meghalaya	65	↑	Meghalaya	63	↓
Mizoram	73	↑	Mizoram	71	↑
Nagaland	65	↑	Nagaland	65	↓
Odisha	62	↓	Odisha	63	↓
Puducherry	73	↑	Puducherry	75	↑
Punjab	63	↓	Punjab	71	↑
Rajasthan	58	↓	Rajasthan	61	↓
Sikkim	71	↑	Sikkim	68	↑
Tamil Nadu	71	↑	Tamil Nadu	74	↑
Tripura	73	↑	Tripura	70	↑
Uttar Pradesh	63	↓	Uttar Pradesh	68	↑
Uttarakhand	57	↓	Uttarakhand	62	↓
West Bengal	69	↑	West Bengal	67	↑
National Average	**64**		**National Average**	**66**	

- ● **No significant difference from that of the national average.**
- ↑ **Above that of the national average.**
- ↓ **Below that of the national average**

Overall, class III children in 34 states/UTs were able to answer 64% of language items correctly and 66% of mathematics questions correctly.

Students' Performance in Language

The ability to understand a simple text is a skill that is fundamental to learning. Without acquiring basic language skills in the primary classes, children have difficulty succeeding in school as they move on to higher grades, as well as in coping with other subjects. To gauge students' language development, students were assessed on their skills in:

- Listening comprehension (using multiple choice questions based on a passage read aloud by the investigator),
- Word recognition (by matching the picture provided to the correct word from two given options),
- Reading comprehension (by being asked to read a calendar/paragraph/advertisement and then locate specific information or draw conclusions)

Students' Performance in Mathematics

In mathematics, key skills to be learnt in early primary grades include knowing and using numbers, learning and understanding the value of numbers, knowing key symbols and comparing and arranging objects. These skills form the foundation for a large set of mathematical operations which students will use in later stages of schooling as well as in real life. To find out about students' mathematical development, students were assessed on their skills in:

- Addition (of two and three digit numbers and simple word problems)
- Subtraction (of three digit numbers with and without borrowing and simple word problems)
- Multiplication (of two-digit number by a single digit and simple word problems)
- Division (understanding the meaning of simple division operations)
- Number placement (recognizing and arranging numbers in a sequence)
- Geometry (identifying two-dimensional figures)
- Patterns (identifying simple number patterns)
- Measurement (comparing length, weight and reading time and calendar)
- Money (addition and subtraction)
- Data handling (drawing conclusions from data)

Table: 2 shows state-wise Average Scores in Language and Mathematics

Performance in Language			Performance in Mathematics		
State/UT	**Percentage**	**Difference**	**State/UT**	**Percentage**	**Difference**
A and N Islands	262	●	A and N Islands	255	●
Andhra Pradesh	253	●	Andhra Pradesh	259	∩
Arunachal Pradesh	247	∪	Arunachal Pradesh	245	∪
Assam	253	∪	Assam	249	●
Bihar	227	∪	Bihar	230	∪
Chandigarh	243	∪	Chandigarh	240	∪
Chattisgarh	226	∪	Chattisgarh	222	∪
Dadra and Nagar Haveli	274	∩	Dadra and Nagar Haveli	267	∩
Daman and Diu	280	∩	Daman and Diu	279	∩
Delhi	253	●	Delhi	244	∪
Goa	274	∩	Goa	248	●
Gujarat	262	∩	Gujarat	255	●
Haryana	238	∪	Haryana	238	∪
Himachal Pradesh	256	●	Himachal Pradesh	258	∩
Jammu and Kashmir	232	∪	Jammu and Kashmir	240	∪
Jharkhand	242	∪	Jharkhand	249	●
Karnataka	267	∩	Karnataka	265	∩
Kerala	273	∩	Kerala	264	∩
Madhya Pradesh	239	∪	Madhya Pradesh	243	∪
Maharashtra	271	∩	Maharashtra	262	∩
Manipur	267	∩	Manipur	263	∩
Meghalaya	252	∪	Meghalaya	241	∪
Mizoram	278	∩	Mizoram	265	∩
Nagaland	255	●	Nagaland	249	●
Odisha	250	∪	Odisha	241	∪
Puducherry	280	∩	Puducherry	271	∩
Punjab	249	∪	Punjab	258	∩
Rajasthan	238	∪	Rajasthan	236	∪
Sikkim	274	∩	Sikkim	257	●
Tamil Nadu	272	∩	Tamil Nadu	271	∩
Tripura	281	∩	Tripura	262	∩
Uttar Pradesh	252	∪	Uttar Pradesh	257	∩
Uttarakhand	239	∪	Uttarakhand	243	∪
West Bengal	271	∩	West Bengal	255	●
National Average	**257**		**National Average**	**252**	

- ● **No significant difference from that of the national average.**
- ∩ **Above that of the national average.**
- ∪ **Below that of the national average**

Language

- The national average score in language is 257, on a scale ranging from 0 to 500.
- 14 states scored significantly above the national average, of which the high performers were Tripura, Daman and Diu, Puducherry and Mizoram.
- 15 states scored significantly below the national average, of which the low performers were Chhattisgarh, Bihar, Jammu and Kashmir, Rajasthan and Haryana.

Mathematics

- The national average score in mathematics is 252, on a scale ranging from 0 to 500.
- 14 states scored significantly above the national average, of which the high performance was in Daman and Diu, Tamil Nadu, Puducherry, Karnataka and Dadra and Nagar Haveli.
- 12 states scored significantly below the national average, of which the low performers were Chhattisgarh, Bihar, Rajasthan, Haryana and Jammu and Kashmir.

Performance by Gender

Table: 3 shows Gender-wise Performance in Language and Mathematics

Language			**Mathematics**		
State/UT	**Boys Avg (SE)**	**Girls Avg (SE)**	**State/UT**	**Boys Avg (SE)**	**Girls Avg (SE)**
A and N Islands	261 (3.0)	264 (3.6)	A and N Islands	254 (3.0)	257 (3.4)
Andhra Pradesh	252 (2.9)	255 (2.7)	Andhra Pradesh	260 (2.8)	259 (2.3)
Arunachal Pradesh	247 (2.9)	247 (3.9)	Arunachal Pradesh	245 (3.1)	245 (3.0)
Assam	254 (2.4)	251 (2.1)	Assam	249 (2.5)	249 (2.7)
Bihar	228 (2.8)	227 (2.6)	Bihar	231 (3.4)	230 (3.7)
Chandigarh	241 (3.1)	245 (2.8)	Chandigarh	241 (3.1)	239 (3.0)
Chattisgarh	228 (3.1)	225 (2.2)	Chattisgarh	223 (2.3)	221 (3.8)
Dadra and Nagar Haveli	272 (3.7)	277 (3.1)	Dadra and Nagar Haveli	266 (3.0)	228 (2.5)
Daman and Diu	278 (10.0)	281 (12.0)	Daman and Diu	278 (6.8)	279 (4.6)
Delhi	250 (2.9)	256 (4.2)	Delhi	245 (4.3)	244 (3.4)
Goa	272 (3.3)	276 (3.2)	Goa	247 (3.1)	249 (3.0)
Gujarat	261 (2.2)	263 (2.6)	Gujarat	255 (2.4)	254 (3.1)
Haryana	238 (3.4	237 (2.5)	Haryana	242 (2.8)	235 (3.2)
Himachal Pradesh	253 (2.5)	259 (2.5)	Himachal Pradesh	258 (3.3)	259 (2.7)
Jammu and Kashmir	231 (2.5)	233 (2.8)	Jammu and Kashmir	240 (3.2)	241 (3.0)
Jharkhand	241 (3.2)	243 (2.9)	Jharkhand	247 (3.4)	251 (3.2)
Karnataka	268 (3.3)	266 (3.3)	Karnataka	265 (2.6)	265 (3.1)
Kerala	268 (2.1)	277 (2.6)	Kerala	261 (2.2)	268 (1.9)
Madhya Pradesh	243 (2.5	234 (2.5)	Madhya Pradesh	246 (2.6)	241 (3.4)

Maharashtra	270 (2.2)	273 (3.5)	Maharashtra	262 (2.0)	262 (3.6)
Manipur	266 (4.1)	267 (3.9)	Manipur	261 (3.1)	264 (3.3)
Meghalaya	251 (2.3)	253 (2.4)	Meghalaya	243 (2.3)	240 (1.9)
Mizoram	278 (2.6)	277 (2.5)	Mizoram	266 (2.5)	264 (2.5)
Nagaland	251 (3.2)	257 (4.0)	Nagaland	249 (3.1)	248 (4.0)
Odisha	250 (2.5)	250 (2.4)	Odisha	242 (3.1)	240 (2.7)
Puducherry	274 (3.6)	285 (3.0)	Puducherry	268 (3.0)	275 (2.5)
Punjab	248 (2.1)	250 (2.7)	Punjab	257 (2.7)	260 (2.4)
Rajasthan	240 (2.8)	237 (2.8)	Rajasthan	236 (3.2)	235 (2.6)
Sikkim	273 (2.5)	275 (2.5)	Sikkim	258 (2.5)	256 (2.5)
Tamil Nadu	272 (3.0)	277 (3.4)	Tamil Nadu	271 (3.2)	270 (3.8)
Tripura	282 (2.6)	281 (2.7)	Tripura	263 (2.4)	260 (3.5)
Uttar Pradesh	255 (2.5	249 (2.6)	Uttar Pradesh	259 (2.5)	256 (2.8)
Uttarakhand	239 (4.1)	239 (3.4)	Uttarakhand	247 (4.5)	240 (3.7)
West Bengal	272 (3.1)	270 (3.2)	West Bengal	256 (2.9)	255 (3.1)
National Average	256 (0.6)	258 (0.6)	**National Average**	253 (0.5)	252 (0.5)

- No significant difference between performance of boys and girls in language, except for Madhya Pradesh (boys higher), Kerala and Puducherry (girls higher).
- No significant difference between the performance of boys and girls in mathematics, except for Kerala (girls higher).

Performance by Location

Table: 4 shows Location–wise Performance in Language and Mathematics

Language			**Mathematics**		
State/UT	**Boys Avg (SE)**	**Girls Avg (SE)**	**State/UT**	**Boys Avg (SE)**	**Girls Avg (SE)**
A and N Islands	263 (3.0)	262 (7.6)	A and N Islands	258 (3.1)	246 (7.5)
Andhra Pradesh	252 (2.5)	264 (6.4)	Andhra Pradesh	259 (2.2)	260 (7.2)
Arunachal Pradesh	245 (2.9)	254 (9.0)	Arunachal Pradesh	243 (2.7)	253 (8.0)
Assam	253 (2.1)	251 (8.2)	Assam	249 (2.4)	253 (9.2)
Bihar	227 (2.5)	235 (10.2)	Bihar	230 (3.4)	246 (9.6)
Chandigarh	246 (6.0)	243 (3.0)	Chandigarh	244 (8.8)	239 (3.1)
Chattisgarh	226 (2.5)	230 (6.8)	Chattisgarh	222 (2.6)	214 (7.0)
Dadra and Nagar Haveli	277 (2.7)	251 (12.6)	Dadra and Nagar Haveli	268 (2.1)	262 (12.7)
Daman and Diu	273 (7.5)	309 (13.4)	Daman and Diu	273 (3.9)	308 (5.8)
Delhi	252 (4.9)	254 (3.0)	Delhi	244 (5.8)	244 (3.1)
Goa	273 (3.6)	275 (3.6)	Goa	249 (3.5)	248 (4.0)
Gujarat	262 (2.1)	263 (7.0)	Gujarat	255 (2.4)	253 (7.6)
Haryana	235 (2.5)	252 (6.1)	Haryana	237 (3.5)	243 (8.9)
Himachal Pradesh	256 (2.1)	257 (10.0)	Himachal Pradesh	259 (2.8)	243 (13.2)
Jammu and Kashmir	231 (2.7)	258 (5.7)	Jammu and Kashmir	240 (2.9)	250 (3.0)

Jharkhand	241 (3.0)	259 (7.6)	Jharkhand	248 (3.3)	252 (8.7)
Karnataka	267 (3.5)	264 (4.8)	Karnataka	267 (3.0)	259 (4.5)
Kerala	272 (2.3)	277 (4.3)	Kerala	262 (2.0)	273 (4.9)
Madhya Pradesh	238 (2.1)	246 (8.8)	Madhya Pradesh	242 (2.7)	255 (5.1)
Maharashtra	273 (3.0)	264 (3.6)	Maharashtra	266 (2.8)	248 (3.8)
Manipur	265 (3.8)	278 (14.2)	Manipur	264 (3.1)	260 (6.7)
Meghalaya	253 (2.1)	250 (5.4)	Meghalaya	242 (2.1)	236 (5.0)
Mizoram	274 (2.5)	289 (4.9)	Mizoram	264 (2.6)	270 (3.9)
Nagaland	256 (3.0)	249 (13.2)	Nagaland	253 (3.3)	228 (10.6)
Odisha	250 (2.1)	246 (6.4)	Odisha	241 (2.8)	243 (8.3)
Puducherry	278 (4.3)	281 (3.8)	Puducherry	270 (4.2)	273 (2.6)
Punjab	247 (2.3)	256 (5.8)	Punjab	256 (2.6)	268 (4.3)
Rajasthan	238 (2.4)	240 (12.3)	Rajasthan	235 (2.4)	239 (13.8)
Sikkim	275 (2.4)	254 (13.9)	Sikkim	258 (2.4)	241 (17.0)
Tamil Nadu	275 (3.5)	272 (5.0)	Tamil Nadu	271 (4.0)	268 (5.2)
Tripura	280 (2.5)	290 (3.8)	Tripura	260 (3.1)	271 (5.2)
Uttar Pradesh	251 (2.4)	261 (8.9)	Uttar Pradesh	258 (2.5)	254 (8.6)
Uttarakhand	241 (3.8)	229 (6.2)	Uttarakhand	245 (3.9)	234 (7.2)
West Bengal	267 (3.4)	285 (3.9)	West Bengal	254 (3.2)	260 (4.9)
National Average	256 (0.6)	260 (1.4)	**National Average**	252 (0.6)	253 (1.3)

- No significant difference in the performance of rural and urban students in language, except for Maharashtra and Dadra and Nagar Haveli (rural higher) and Jammu and Kashmir, Jharkhand, Mizoram, Tripura and Daman and Diu (urban higher).
- No significant difference between rural and urban children's performance in mathematics in 27 states/UTs.
- Rural students were doing significantly better in Maharashtra and Nagaland.
- Urban students are doing significantly better in Jammu and Kashmir, Punjab, Madhya Pradesh, Kerala and Daman and Diu.

Major Findings

- Overall, class III children in 34 states/UTs were able to answer 64% of language items correctly and 66% of mathematics questions correctly.
- The national average score in language is 257, on a scale ranging from 0 to 500.
- 14 states scored significantly above the national average, of which the high performers were Tripura, Daman and Diu, Puducherry and Mizoram.
- 15 states scored significantly below the national average, of which the low performers were Chhattisgarh, Bihar, Jammu and Kashmir, Rajasthan and Haryana.
- The national average score in mathematics is 252, on a scale ranging from 0 to 500.
- 14 states scored significantly above the national average, of which the high performance was in Daman and Diu, Tamil Nadu, Puducherry, Karnataka and D and N Haveli.

- 12 states scored significantly below the national average, of which the low performers were Chattisgarh, Bihar, Rajasthan, Haryana and Jammu and Kashmir.
- No significant difference between performance of boys and girls in language, except for Madhya Pradesh (boys higher), Kerala and Puducherry (girls higher).
- No significant difference between the performance of boys and girls in mathematics, except for Kerala (girls higher).
- No significant difference in the performance of rural and urban students in language, except for Maharashtra and Dadra and Nagar Haveli (rural higher) and Jammu and Kashmir, Jharkhand, Mizoram, Tripura and Daman and Diu (urban higher).
- No significant difference between rural and urban children's performance in mathematics in 27 states/UTs.
- Rural students were doing significantly better in Maharashtra, Dadra and Nagar Haveli in languages and in Maharashtra and Nagaland in mathematics.
- Urban students are doing significantly better in Jammu and Kashmir and Daman and Diu both in languages and mathematics.

Summary

Learning in early primary grades lays the foundation for effective learning in one's life. The NAS Class III (Cycle 3) reveals that the average score of children is 64% and 66% in Language and Mathematics respectively and more than two-thirds of children are scoring above 50%. However, improvement is needed especially in abilities such as listening and reading with comprehension, as well as understanding place value, subtraction and division.

Large-scale assessments by themselves cannot result in quality improvement, unless the system is ready to reflect on the findings and use them for improving the quality of teaching and learning processes. Thus each state needs to carefully analyse the current learning levels of their children and understand the gap areas as well as the reasons for low learning. This information could then be used to redesign interventions such as teacher training, curriculum and textbook design and on-site teacher support, so as to improve children's learning. This also has implications for performance of schools, their monitoring and the roles and responsibilities of teacher/school/ support institutions like BRCs/DIETs/SCERTs. It is also important to disseminate the NAS findings in an easily understandable manner and to discuss them with all relevant stakeholders, especially teachers, teacher support institutions and educational functionaries, to build their capacity to understand and reflect on the findings and take appropriate action thereafter.

The purpose of such large-scale assessments will only be fulfilled when the findings reach back to the classroom and result in improvement in children's learning. There are various things that teachers can do at their level, in light of the findings of the NAS study. The study reveals that in Language, children are performing relatively better in word recognition but are facing difficulty when it comes to listening and reading with understanding and answering

questions related to the text. Thus, teachers could provide more opportunities during the teaching-learning process for children to both read and listen to a wide variety of reading materials. Children should then be given the opportunity to explain the meaning of the text in their own words, discuss with their peers, ask questions,express the meaning creatively through drawing or acting out, etc. Similarly in mathematics, children seem to be doing quite well on practical application questions related to money and data handling, but seem to be struggling with topics like place value, subtraction and division. Perhaps teachers can spend more time in relating these concepts to practical examples from children's everyday lives and surroundings and use locally available materials such as sticks, stones, beans to help children understand better abstract concepts of addition, subtraction, division etc. Ultimately, it would be most useful if teachers themselves can regularly assess their own students and identify which children require additional support on specific topics. Such simple efforts by teachers would have a huge impact in enhancing children's learning.

While NAS provides a broad snapshot of national and state-level trends, states are encouraged to undertake state-specific large-scale assessments in order to obtain a more nuanced picture of how specific districts and blocks are performing. This would help to design appropriate interventions to improve children's learning. Tracking improvements in learning over time can help assess the impact of specific quality-related interventions and help policy and decision makers to take evidence-based decisions.

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