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Trends in Learning Achievement in Indian Schools: Insights from NAS 2017 and 2021

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ABSTRACT

The present study provides a descriptive analysis of trends in students' learning achievement in India based on the results of the National Achievement Survey (NAS) 2017 and NAS 2021. The NAS, conducted by the National Council of Educational Research and Training (NCERT), assesses the learning outcomes of students across Grades 3, 5, 8, and 10 on a standardized scale of 500. Using purely secondary data from official NAS reports, the paper examines changes in average performance levels across grades, subjects, and states to understand patterns of improvement or decline during the period marked by the implementation of the Samagra Shiksha Abhiyan (SMSA) and the COVID-19 pandemic. The analysis reveals an overall decline in learning achievement across all grades and subjects, with the sharpest reductions observed in mathematics and language competencies. Despite improvements in access and infrastructure under SMSA, learning levels did not show corresponding gains, highlighting the persistent learning crisis in Indian schools. The findings emphasize the need for systemic reforms focusing on pedagogical support, teacher training, and periodic assessment-driven interventions.

Keywords: National Achievement Survey, Learning Outcomes, NAS 2017, NAS 2021, Samagra Shiksha Abhiyan, Educational Quality

INTRODUCTION

The quality of learning outcomes has emerged as one of the most critical dimensions of India's education policy discourse. While initiatives such as the Samagra Shiksha Abhiyan (SMSA) have significantly expanded access and equity in school education, concerns about actual learning levels remain. The National Achievement Survey (NAS), conducted periodically by NCERT, provides a nationwide measure of student learning aligned with curricular expectations.

NAS 2017 and NAS 2021 represent two major rounds of assessment that allow for meaningful comparison over time. The 2017 cycle was carried out before the COVID-19 pandemic and soon after the integration of earlier schemes under SMSA. The 2021 cycle, conducted after significant disruptions to schooling, provides a post-pandemic snapshot of learning achievement.

This paper presents a descriptive study comparing NAS 2017 and 2021 results to understand the trends in students' learning achievement in India across grades and subjects. It aims to provide insights into whether educational reforms and increased investment under SMSA have translated into improved learning outcomes.

Objectives of the Study

1. To describe changes in students' learning achievement between NAS 2017 and NAS 2021.
2. To examine subject-wise and grade-wise trends in performance.
3. To identify emerging patterns and implications for education policy and classroom practices.

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RESEARCH DESIGN AND METHODOLOGY

Data Source

The study predominantly uses secondary data from NAS 2017 and NAS 2021 published by the National Council of Educational Research and Training (NCERT) under the Ministry of Education. Data covers Grades 3, 5, 8, and 10 across subjects including Language, Mathematics, Environmental Studies (EVS), Science, and Social Science. Each NAS round assesses competencies based on learning outcomes defined by NCERT and provides average scaled scores on a scale of 500.

Methodology

The study is primarily a descriptive comparative analysis. The data have been summarised in terms of mean scaled scores (by grade and subject), differences in mean performance between 2017 and 2021, and trends across grade levels and subjects. The paper does not apply inferential or causal tests, as the aim is to describe and interpret national-level patterns.

Sample Size

NAS 2017 included approximately 2.2 million students across 701 districts, while NAS 2021 assessed around 3.4 million students across 720 districts. Both surveys used a robust sampling design covering government, aided, and private schools.

Overview of NAS Assessment Framework

The NAS framework is competency-based rather than content-based. It evaluates students on learning outcomes specified in the National Curriculum Framework, focusing on conceptual understanding, application, and problem-solving rather than rote recall.

Each grade assesses specific subjects as shown below:

Grade 3 - Language, Mathematics, EVS

Grade 5 - Language, Mathematics, EVS

Grade 8 - Language, Mathematics, Science, Social Science

Grade 10 - Language, Mathematics, Science, Social Science, English.

RESULTS AND ANALYSIS

Overall National Trends

A comparison of mean scores from NAS 2017 and NAS 2021 shows a decline in average achievement levels across all grades and subjects.

Table 1: Comparison of Average NAS Scores by Grade (2017-2021)

Grade	NAS 2017 (Mean Score)	NAS 2021 (Mean Score)	Change (±)
Grade 3	336	323	**-13**
Grade 5	320	309	**-11**

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Grade 8	307	295	**-12**
Grade 10	282	277	**-5**

Source: Data compiled from NAS 2017 and NAS 2021 national reports published by NCERT. Scores are based on a standardized scale of 500.

The comparison of NAS 2017 and 2021 across grades demonstrates a declining trend in average student performance over the four-year period. Across Grades 3, 5, 8, and 10, scores fell by 7 to 10 points, indicating a measurable dip in learning achievement. This decline suggests that despite the consolidation of earlier schemes under the Samagra Shiksha Abhiyan (2018), which aimed to integrate school education from pre-primary to senior secondary, the intended improvements in learning quality were not fully realised. Several factors may have contributed to this pattern: disruptions caused by the COVID-19 pandemic, shifts to remote learning, and challenges in teacher preparedness and digital access. The decline is particularly noticeable in the early grades, emphasizing gaps in foundational literacy and numeracy (FLN), which NEP 2020 later identified as a critical priority. The trend underscores the need for enhanced classroom processes, remedial support, and stronger academic monitoring mechanisms to reverse the downward trajectory of learning achievement.

Grade-Level Trends

The decline is most severe in lower grades (3 and 5), where foundational learning disruptions have long-term implications. At the secondary level, performance stabilizes but remains below 2017 levels.

Subject-Wise Trends

Across all grades, mathematics and language recorded the most notable decreases. Language saw a decline of 10-12 points in Grades 3-8 and a minor decline in Grade 10. Mathematics showed the largest drop (12-15 points), reflecting reduced problem-solving proficiency.

Table 2: Subject-Wise Changes in Learning Achievement (Average National Trend)

Subject	Grades Covered	Trend (2017-2021)	Observation
Language	3-10	↓ 10-12 points	Decline across all grades, especially lower primary
Mathematics	3-10	↓ 12-15 points	Sharpest decline; problem-solving affected
Science	8-10	↓ 5-8 points	Moderate decline post-pandemic
Social Science	8-10	↓ 4-6 points	Minor decline, consistent across states

Source: Data compiled from NAS 2017 and NAS 2021 national reports published by NCERT. Scores are based on a standardized scale of 500.

Table 2, reveals subject-wise trends highlighting that performance deterioration was not uniform across disciplines. Language and mathematics saw the sharpest declines across most grades, suggesting difficulties in both comprehension and problem-solving skills. Science and social science, while slightly more stable, still reflected a moderate fall, particularly at the upper primary and secondary levels.

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These patterns imply a systemic weakness in conceptual understanding and application-based learning, possibly linked to rote-based pedagogy and inconsistent teacher training quality. The larger drop in mathematics performance could be associated with limited availability of STEM learning resources and reduced student engagement during remote instruction periods. Conversely, states that invested in structured remedial programs, peer learning initiatives, and teacher mentoring, such as Kerala and Maharashtra, managed to mitigate the decline to some extent.

Overall, the subject-wise analysis reveals that while access to schooling has improved, learning quality remains a central challenge requiring pedagogical reforms and robust assessment feedback mechanisms.

Regional and State-Level Patterns

The state-level comparison highlights deep-rooted regional disparities in educational achievement. High-performing states, Kerala, Maharashtra, Himachal Pradesh, Punjab, and Tamil Nadu, have demonstrated a consistent focus on teacher development, community engagement, and school monitoring systems, translating into higher learning outcomes. These states also exhibit better governance structures and data-driven educational planning.

In contrast, Bihar, Madhya Pradesh, Assam, Jharkhand, and Odisha continue to lag behind, facing persistent challenges such as inadequate teacher deployment, insufficient instructional materials, and weak accountability systems. The impact of socioeconomic conditions, rural isolation, and post-pandemic disruptions further widened these learning gaps.

The disparities suggest that a one-size-fits-all policy approach may not be effective and that targeted, state-specific interventions under Samagra Shiksha and NEP 2020 are essential. Strengthening foundational learning, promoting digital inclusion, and contextualizing curricular support to local needs could help bridge the performance divide.

Interpretation

Factors explaining the decline include prolonged school closures during COVID-19, the digital divide, focus on inputs over outcomes, and gaps in teacher preparedness for remote learning.

DISCUSSION

The descriptive evidence from NAS 2017 and 2021 underscores a paradox in India's education system: improved access but declining learning quality. The integration of schemes under SMSA aimed to create systemic coherence, but trends suggest that financial and administrative consolidation alone cannot ensure learning gains.

The findings highlight the need for foundational literacy and numeracy (FLN) interventions, teacher capacity-building, and better use of assessment data for classroom-level action.

CONCLUSION

This descriptive analysis indicates a significant decline in learning outcomes across grades and subjects, despite improved access and funding under the Samagra Shiksha Abhiyan (SMSA). The results emphasize persistent gaps in foundational competencies and the need for system-level attention to instructional quality. Strengthening foundational learning and teacher capacity, supported by data-informed planning and continuous assessments, is crucial. Aligning these efforts with the vision of NEP 2020 will be key to achieving sustainable improvement and ensuring that educational reforms translate into tangible learning gains.

RECOMMENDATION

To improve learning outcomes, focus should be placed on strengthening Foundational Literacy and Numeracy (FLN), enhancing teacher training, and promoting data-driven, state-specific planning. Classroom assessments must emphasize competency-based evaluation, and technology should be integrated for learning support and

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monitoring. Stronger alignment between NEP 2020 and Samagra Shiksha is essential to ensure effective implementation and equitable educational outcomes.

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