

Impact Assessment of Eicher Motors Limited CSR

Project— Education (Madhi
Foundation)

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Submitted To
Eicher Motors Limited

Submitted By
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List of Abbreviations

ASER – Annual Status of Education Report

CAPI – Computer Aided Personal Interview

CSR – Corporate Social Responsibility

EE – Ennum Ezhuthum

EML – Eicher Motors Limited

FGD – Focus Group Discussion

FLN – Foundational Literacy and Numeracy

IDI – In-depth Interview

KII – Key Informant Interviews

NCERT – National Council of Educational Research and Training

NEP – National Education Policy

OECD – Organization for Economic Co-operation and Development

PTM – Parent-Teacher Meeting

RfP – Request for Proposal

SMC – School Management Committee

TLM – Teaching Learning Material

TN – Tamil Nadu

Section- A
Summary Report

Activity 1: Ennum Ezhuthum

1. Brief description of project activities

Eicher Motors Limited, in collaboration with the Madhi Foundation, is implementing several educational initiatives in Tamil Nadu to enhance the quality of education in government schools.

Ennum Ezhuthum: Launched by the Tamil Nadu Department of School Education, this mission aims to ensure that all students in classes 1 to 3 acquire foundational literacy and numeracy skills by 2025. Madhi Foundation has been working closely with state agencies to develop and implement strategies that address learning gaps, especially those exacerbated by the COVID-19 pandemic. The mission focuses on level-based instruction, integrated learning and the use of technology to create an engaging learning environment.

1.2 Key Findings

The Ennum Ezhuthum program has played a pivotal role in bridging foundational literacy and numeracy (FLN) gaps within Tamil Nadu’s government schools. Launched by the Tamil Nadu Department of School Education (D/o SEL), the initiative is well-aligned with the state’s broader educational vision, focusing on level-based instruction, integrated learning and technology-driven engagement to achieve FLN proficiency by 2025. Its relevance and coherence are reflected in its seamless alignment with government policies and NGO-led interventions, strengthening both its purpose and impact.

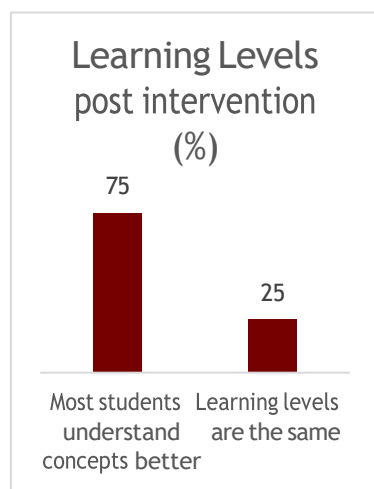


Figure 1: Learning levels post intervention

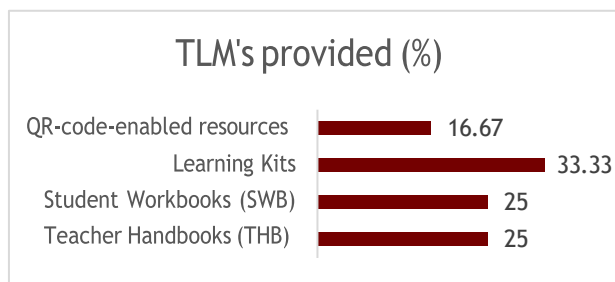
The program effectively leverages the experience and expertise of the teachers, 75% (n=4) of whom are aged 54 years or older, each carrying a minimum of a decade’s teaching experience. Their robust academic qualifications, with half holding postgraduate degrees and the other half holding higher degrees have allowed them to adopt the advanced pedagogical strategies introduced by the program. This has enabled the successful integration of Ennum Ezhuthum’s methodologies into routine classroom instruction. As a result, 75% of the teachers observed substantial improvement in students’ grasp of foundational concepts compared to pre-intervention levels, underscoring the program’s effectiveness in elevating learning outcomes (as shown in fig. 1).

The initiative is particularly relevant for students now in Classes 4 and 5, who had earlier benefitted from the intervention during their primary school years. The sample (n=131), comprising 51.91% boys and 48.09% girls, maintains gender equity in the study. The most important insight is that a notable 75% of the students demonstrated improvements in reading and mathematics, reinforcing the initiative’s success in strengthening basic literacy and numeracy.

Teacher’s training emerged as a cornerstone of efficiency, with all teachers attending sessions facilitated by the Madhi Foundation at the start of each academic term. These trainings covered multigrade classroom management, differentiated instruction, technology integration and assessment strategies. Teachers unanimously endorsed the sessions as highly effective, especially in addressing multigrade challenges.

“Previously, the stronger students moved ahead while the weaker ones lagged. Now, we use different strategies for different groups and it keeps everyone engaged.” - Teacher

This highlights how ability-based grouping has created a more inclusive learning atmosphere. However, workload disparities were noted, underscoring the need for structured support and better role distribution to balance administrative and instructional responsibilities.



The adoption of Teaching-Learning Materials (TLMs) has been widespread, with **100%** of teachers consistently relying on the Teacher's Handbook for lesson planning and 75% integrating Student Workbooks, Hands-on learning kits and QR-code resources into classroom learning, reflecting a varied instructional approach (as shown in fig. 2). Teachers observed that workbooks significantly enhanced student engagement and retention.

Figure 2: Teaching Learning Materials

"The workbooks are very useful. Children practice independently and we can check their progress easily." - Teachers

However, the program faced challenges in ensuring consistent use of the workbook due to limited parental supervision at home. This gap underscores the pressing need for structured parental outreach and training to enhance the home-learning component. Teachers highlighted that simple, consistent parental engagement can yield significant improvements. Given the socio-economic constraints and limited educational backgrounds of many parents, strategic interventions are essential to sustain parental involvement and extend learning support beyond school hours.

"Some children do not bring their workbooks back with completed exercises. They say they forgot, or no one helped them at home." - Teacher

Technology integration has also been a vital aspect, with all teachers trained in digital platforms like Palli Paarvai and the EE App for student monitoring. While **75%** of teachers reported using these digital tools regularly, 25% mentioned occasional use, indicating potential for strengthening digital training and access to infrastructure.

Quantitative data reflects commendable progress in student performance across literacy and numeracy. Pre-intervention, 75% of teachers reported that only 10–15 students could read simple sentences independently. Post-intervention, 50% observed this number rise to 20–22 students, while the remaining 50% saw 24–26 independent readers in their classrooms. Similar trends emerged in mathematics, with students showcasing improved problem-solving skills and a 5–20% rise in average scores. Structured grouping based on assessment data further enabled teachers to tailor their instruction, accommodating varied learning needs and fostering a more inclusive environment.

Classroom dynamics witnessed a transformation, with 100% of teachers observing significant improvements in student participation, confidence and peer collaboration. Interactive small-group activities emerged as an effective strategy, encouraging active engagement.

"They (students) are excited to come to school now. They look forward to activities instead of just sitting and listening." - Teacher

This reflects the program's success in making learning more engaging and child centric. However, sustaining these gains requires continued investment in professional development, enhanced parental engagement and the refinement of digital learning tools to optimize their impact. Ensuring ongoing support for teachers and structured interventions for students struggling to reach grade-level proficiency will be critical in maximizing the long-term success of Ennum Ezhuthum.

ASER FLN Results (Standardized test)

The Ennum Ezhuthum (EE) program has significantly enhanced foundational literacy and numeracy among students. In Class 4, **45%** of students can read at the word level, surpassing the state average of 31.2%. Additionally, 33.33% read at the paragraph level, while 13.64% have reached the story level, demonstrating strong reading proficiency (as shown in fig. 3).

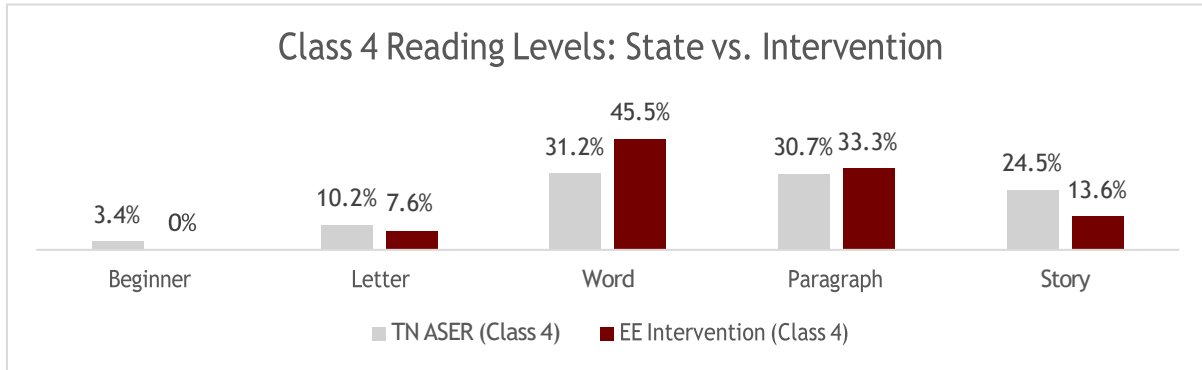


Figure 3: Class 4 Reading Levels: State vs. Intervention

Similarly, numeracy outcomes in Class 4 show that **45%** of students can recognize numbers up to 99, while another **45%** can perform subtraction, exceeding the state's 35.4% (as shown in fig. 4).

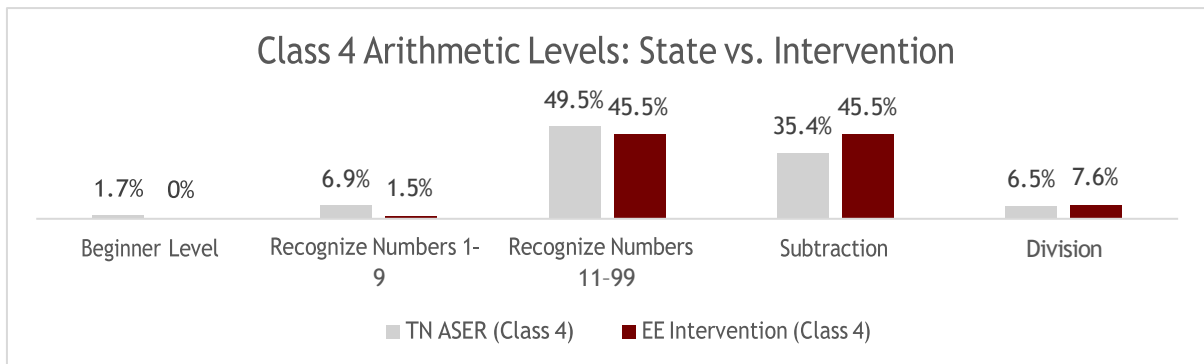


Figure 4: Class 4 Arithmetic Levels: State vs. Intervention

In Class 5, literacy levels are equally promising, with **46.15%** of students reading at the story level, compared to the state's 35.6%. Additionally, 27.69% can read at the paragraph level, reflecting strong comprehension abilities (as shown in fig. 5).

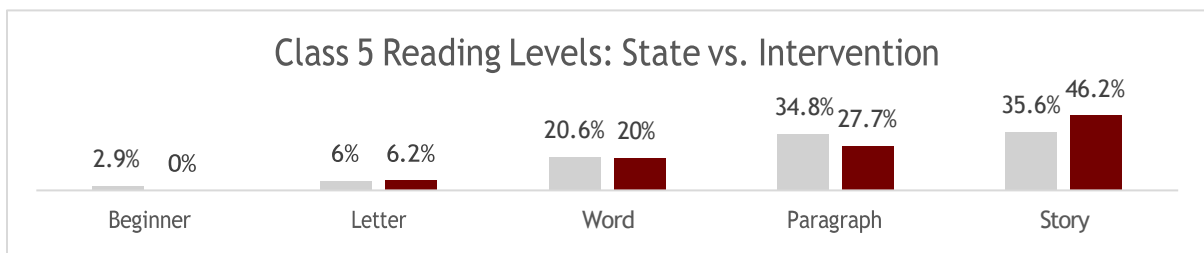


Figure 5: Class 5 Reading Levels: State vs. Intervention

Numeracy skills in Class 5 indicate that 43.08% of students can perform subtraction and 26.15% have attained proficiency in division, surpassing the state's 20.8%. These results highlight the program's success in equipping students with advanced mathematical competencies (as shown in fig. 6).

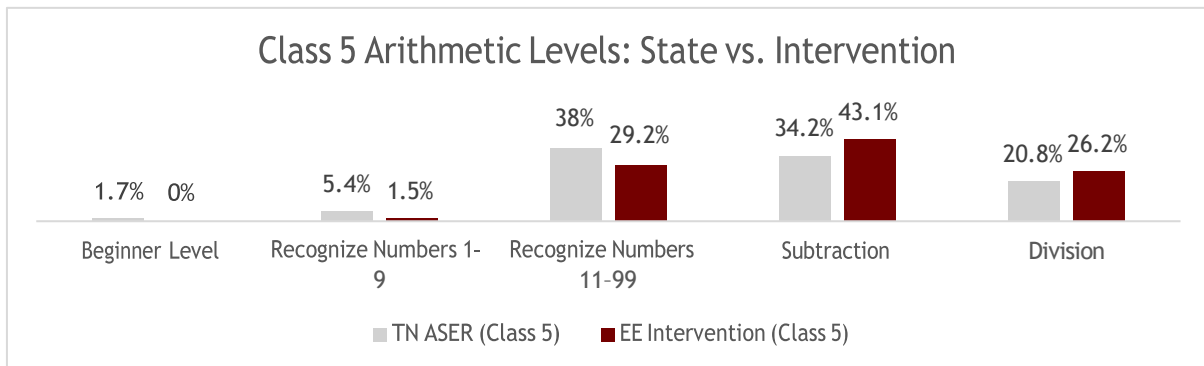


Figure c: Class 5 Arithmetic Levels: State vs. Intervention

The structured Teaching and Learning Materials (TLMs), phonics-based instruction and student workbooks have significantly contributed to improved literacy outcomes, with 75% of teachers reporting better student comprehension of foundational concepts.

In math related learning outcomes, hands-on, activity-based instruction, including learning kits, strengthened numeracy skills reflected in 44.27% of students performing subtraction and 16.79% solving division problems (n=131). EE's emphasis on real-world applications and interactive learning has made foundational concepts more engaging, with teachers observing that students now look forward to activities instead of being passive recipients as they'd do earlier. Enhanced training and pedagogical support in Sandbox schools further improved implementation, ensuring students build essential literacy and numeracy skills for continued academic success.

1.3 Recommendations

Strengthening digital tools is a priority, given that while 75% of teachers (n=4) regularly use platforms like Palli Paarvai and the EE App, 25% use them only occasionally due to infrastructure constraints. Teachers highlighted that *“lessons displayed on a smartphone screen are not visible to all students,”* limiting their effectiveness. Providing classrooms with shared tablets or projectors and adding offline features can enhance usage, especially in low-connectivity areas.

Parental engagement remains a challenge impacting home-learning. Although 75% of students (n=131) improved in reading and math, consistent use of workbooks couldn't be ensured due to limited home support hindering progress. Regular parent sessions are recommended to equip families with simple strategies to support learning. Sharing weekly updates via WhatsApp or SMS and introducing take-home materials can further bridge this gap.

“Some children don't bring workbooks back completed. They say no one helped them at home.”
- Teachers

Teachers also called for continued capacity building, particularly managing large, multigrade classrooms. With classes averaging 40 students, 75% of teachers reported workload challenges. Introducing teaching assistants or volunteers can ease this burden and support ability-based grouping. Additionally, more guided reading sessions and math activities can improve comprehension and numeracy, where gaps persist with only 29.77% of students at story-level reading and just 16.79% with the ability to perform division. Aligning EE materials with the state syllabus can address concerns about content differences, making it easier for teachers

and parents to track learning progress. Addressing resource gaps, such as shortages of workbooks and learning kits, is also critical to ensure consistent implementation.

By refining digital tools, strengthening parental involvement, enhancing teacher training and optimizing classroom strategies, the Ennum Ezhuthum initiative can ensure long-term sustainability and improved foundational literacy and numeracy outcomes.

Activity 2: Sandbox Schools

2. Brief description of project activities

Eicher Motors Limited, in collaboration with the Madhi Foundation, is implementing several educational initiatives in Tamil Nadu to enhance the quality of education in government schools.

Sandbox Schools: This initiative seeks to transform teaching and administrative processes in select government schools, referred to as "sandbox schools." The goal is to strengthen basic literacy and numeracy by implementing micro-innovations at the classroom level. Madhi Foundation collaborates with school leaders and teachers to seamlessly integrate existing primary school programs with new strategies, fostering an environment conducive to holistic student development.

2.2 Key Findings

The Sandbox Model Schools initiative, implemented in collaboration with the Madhi Foundation, demonstrated strong alignment with the National Education Policy (NEP) 2020, focusing on competency-based learning and integrating technology into classroom instruction. A total of five teachers (n=5), all women with 80% holding postgraduate degrees and 20% even PhDs and with work experience ranging from 15 to 30 years, are involved in the implementation of project activities at the school. Their strong academic backgrounds and experience enhanced the project's implementation and impact.

One of the most significant shifts was the structured adoption of Teaching-Learning Materials (TLMs), which 80% of teachers (n=5) found highly relevant. They appreciated how these materials helped streamline lesson planning and strengthened conceptual clarity for students. However, 20% suggested adjustments to make them more suitable for multi-grade classrooms. Despite the materials' utility, teachers highlighted time constraints that affected implementation.

"The teaching materials are well-structured and very helpful. They guide teachers in lesson planning and help students understand concepts better. However, completing all the activities within school hours is a challenge"
– Teacher

The project fostered a gender-equitable learning environment, with 66.67% of students (n=36) being female. Student retention was relatively strong, with 66.67% progressing to Class 5, though 5.56% remained enrolled for only one or two years, indicating challenges in retention likely linked to student mobility.

"Earlier, parents were not involved much. They sent the children to school and forgot about it. Now, they attend meetings, ask about homework and want to know how their child is progressing" - Teacher

Parental engagement yielded mixed results. Sixty percent of teachers (n=5) observed increased participation from parents, 20% noted no change and another 20% reported a decline. Still, economic constraints 61.11% of mothers were housewives and 16.67% of fathers engaged in informal labour—limited the extent of parental involvement to foster basic literacy and numeracy. This finding resonates with Saxena (2019), who emphasized that "low levels of education and poor economic conditions of parents often hinder

sustained engagement in children’s education”.¹ Thus this demands a targeted intervention to engage parents to build a conducive environment for building foundational literacy and numeracy at home.

Teacher capacity building was a core component of the project. Eighty percent of teachers (n=5) reported receiving monthly training sessions on multi-grade teaching, classroom management and technology use. Following these sessions, 60% of teachers frequently applied new teaching strategies, while 40% integrated them into daily practice. Use of TLMs increased, with 40% of teachers spending 20–30 hours weekly on structured materials and 20% exceeding 50 hours. Yet, heavy administrative responsibilities and multi-grade challenges continued to limit teachers’ ability to fully incorporate interactive learning methods.

The project also transformed technology usage in classrooms. All teachers (n=5) reported weekly use of digital tools post-intervention, with 20% using them daily and 40% several times per week. Teachers as well as parents, both observed that digital content increased student interest towards their education. On the contrary, 40% of teachers struggled with the Ennum Ezhuthum app due to usability issues and poor connectivity, which limited its impact.

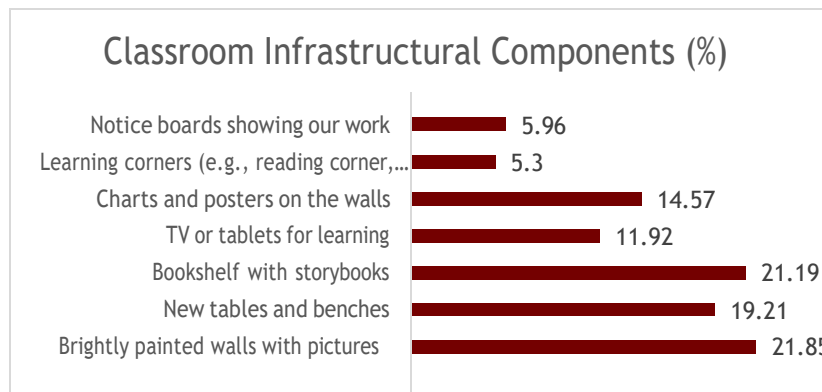


Figure 7: Classroom components post infrastructural upgrade (as observed by students)

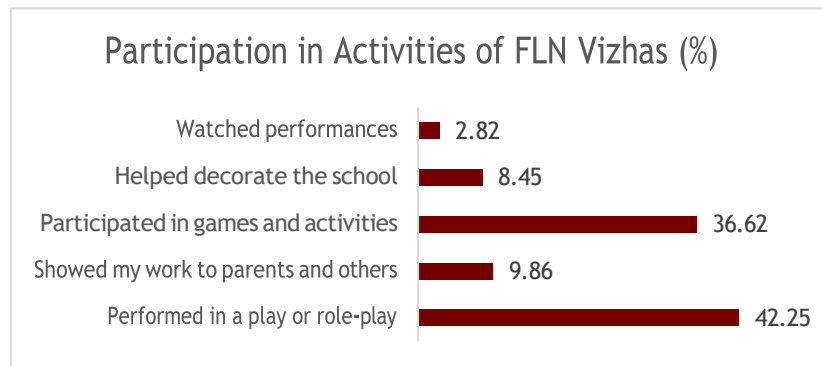


Figure 8: Types of activities students engaged in at FLN Vizhas

Infrastructure upgrades including classroom renovations, smart TVs and library spaces contributed to better learning environments. The components of which are mentioned in fig. 7. 80% of teachers (n=5) noted an increase in attendance by over 20%, attributing it to these improvements. Library usage also increased, with 69.44% of students using the reading corner independently and 44.45% learning three to five new words weekly. As noted by the *National Achievement Survey (NCERT, 2017)*, “Improved infrastructure and access to resources contribute directly to enhanced learning outcomes”², reaffirming the importance of these investments.

The project led to a visible pedagogical shift. Initially, 80% of teachers used activity-based and group learning methods in less than 30% of their lessons. After the intervention, 60% reported

incorporating these approaches in over 26% of lessons, while 40% used them in more than 50% of their teaching. Teachers credited community events such as FLN Vizhas (activities as mentioned in fig. 8) and Parent-Teacher Meetings were rated highly effective by 80% (n=5)—for strengthening parental and community engagement.

¹ Saxena, R. (2019). *Strengthening parent-school partnerships in India*. Educational Review, 71(3), 276-293.

² National Council of Educational Research and Training. (2017). *National Achievement Survey 2017 – Summary Findings*.

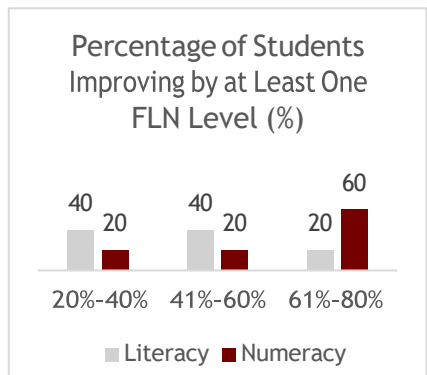


Figure 5: Improvement in FLN levels

In terms of learning outcomes, 60% of teachers (n=5) reported that 61–80% of students showed improvement in numeracy, while 40% observed similar progress in literacy (as shown in fig 9). Regular assessments, conducted weekly by 60% of teachers, enabled close monitoring. However, 40% of teachers felt that the mobile application did not significantly enhance learning outcomes.

“The app is useful for tracking, but it doesn’t really help students learn better. Sometimes, technical issues make it harder” - Teacher

Teacher confidence in handling multi-grade classes grew substantially, with 80% (n=5) reporting that they felt highly confident applying differentiated teaching strategies. Peer learning was actively promoted, with teachers observing (as derived from qualitative interviews), that dividing students based on their learning levels encouraged the stronger students to help their peers facing difficulties, further contributing to increased collaboration amongst students. The types of methodologies found relevant by teachers in this process as per quantitative insights are mentioned in fig. 10.

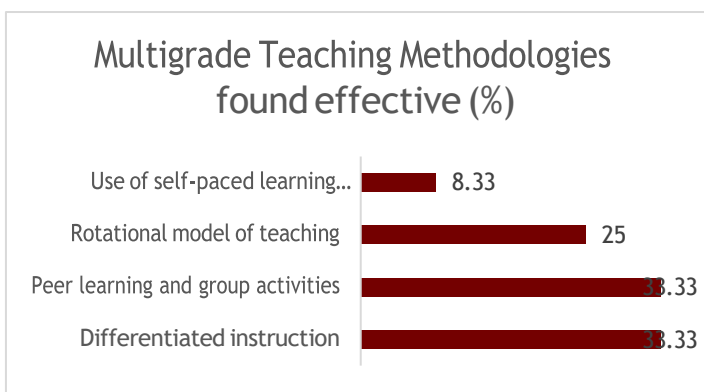


Figure 10: Multigrade teaching methodologies

However, supporting learning at home remained a challenge. As Mukherjee (2021) notes, *“Lack of structured guidance prevents parents from meaningfully engaging with children’s learning, particularly in foundational literacy”*.³ Forty percent of teachers (n=5) shared that fewer than 20% of parents regularly assisted children’s learning at home. Parents further expressed this limitation and inability to contribute to their children’s education due to lack of knowledge.

2.3 Recommendations

Given the important role of technology in classroom learning, refining the Ennum Ezhuthum mobile application could support teachers more effectively. Some teachers shared that while the app is helpful for tracking, certain features remain complex and time-consuming, occasionally pulling focus away from teaching. With 29% of teachers (n=5) suggesting improvements, simplifying the user interface, enabling offline access and allowing customizable reporting may ease the process and encourage consistent use.

“We enjoy coming to the school functions, but we don’t always know how to help with studies at home. If they show us, we can also try” – Parent

Parental engagement has shown encouraging signs of improvement, though there remains an opportunity to deepen this connection. While many parents actively participated in FLN Vizhas and school events, some expressed difficulty in supporting their children’s learning at home, particularly with structured workbooks. Creating simple, home-based guides and conducting orientation sessions during school events could help parents feel more confident and better equipped to support learning outside the classroom.

³ Mukherjee, S. (2021). *Parental engagement in foundational literacy programs: Evidence and lessons*. New Delhi: Tata Trusts.

Teachers have demonstrated strong engagement with the program, yet additional support may help address some of the persistent challenges they face in multi-grade classrooms. According to qualitative insights, teachers indicated a desire for ongoing mentorship, specialized training in differentiated instruction and access to tailored teaching aids. Many teachers acknowledged feeling confident after training, but balancing instructional delivery across varying student levels and meeting learning outcomes remained a complex task. Revisiting these areas through periodic refresher sessions or peer learning opportunities could ease classroom management pressures.

Library usage and reading habits have improved, with **69.44%** of students (n=36) accessing the reading corner independently. To build on this, introducing librarian/teacher-led activities or interactive reading challenges could help engage those who still require support, particularly the 27.78% who reported that they needed help accessing reading materials. However, digital learning experiences have been widely appreciated by students, with **92%** enjoying lessons through TVs and tablets. However, some students (30.56%) reported irregular access to digital devices in class. Addressing this through structured digital literacy sessions and ensuring regular device usage in the classroom might help all students benefit equally from technology-enabled learning.

Managing large class sizes continues to be a challenge, particularly for 15.79% of students who noted difficulties in accessing individual attention. Where feasible, introducing additional teaching support or volunteer facilitators could help ease the burden on teachers and create more space for individual learning needs.

Attendance patterns suggest that while many students attend school regularly, 27.78% still miss 5–7 days each month. Strengthening parent-teacher communication and exploring motivational incentives for regular attendance may support better retention. It was encouraging to note that 80% of teachers (n=5) observed a rise in attendance following infrastructure improvements, a reminder of the role that physical learning spaces play in encouraging participation.

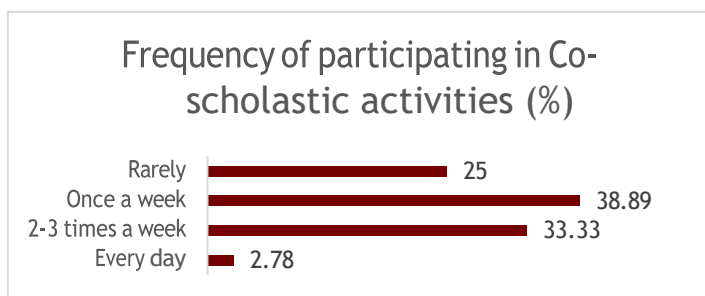


Figure 11: Participation in co-scholastic activities

Lastly, the project's emphasis on co-scholastic activities has been a strong motivating factor, with 94.44% of students expressing enjoyment, the frequency of which can be observed in fig.11. Sustaining these opportunities for creative expression, sports and cultural participation could help maintain high levels of student interest and engagement.

"These activities motivate our children a lot. They feel happy attending school, especially when there is some event or activity. My child is always excited about participating" - Parent

Section- B
Detailed Report

Impact Assessment Study

1. Introduction

1.1. Background

Eicher Motors Limited (EML) is committed to Corporate Social Responsibility (CSR), focusing on long-term, sustainable change in communities across India. Eicher adopts a holistic approach, addressing community-specific needs through well-designed programs that enhance quality of life. By collaborating with local organizations, government agencies and community groups, Eicher ensures its initiatives are impactful and scalable. The company prioritizes self-reliance, creating systems that empower communities rather than offering short-term solutions. Its CSR efforts have led to improved access to essential services, better opportunities and healthier environments. This report covers the key findings for the Education project implemented in collaboration with Madhi Foundation. Through these initiatives, EML aims to continue supporting stronger, healthier and self-sufficient communities.

1.2. Objectives of the impact assessment

The key objectives of conducting this impact assessment are as follows:

1. To quantify the extent to which the projects have been successful in achieving the intended outcomes
2. To establish the effectiveness of program implementation
3. To identify and capture success stories, challenges and areas for improvement
4. To provide actionable recommendations to enhance the effectiveness of future programs

1.3. OECD- DAC framework

Considering the objectives of the project, this evaluation will be based on the **OECD-DAC framework**⁴.

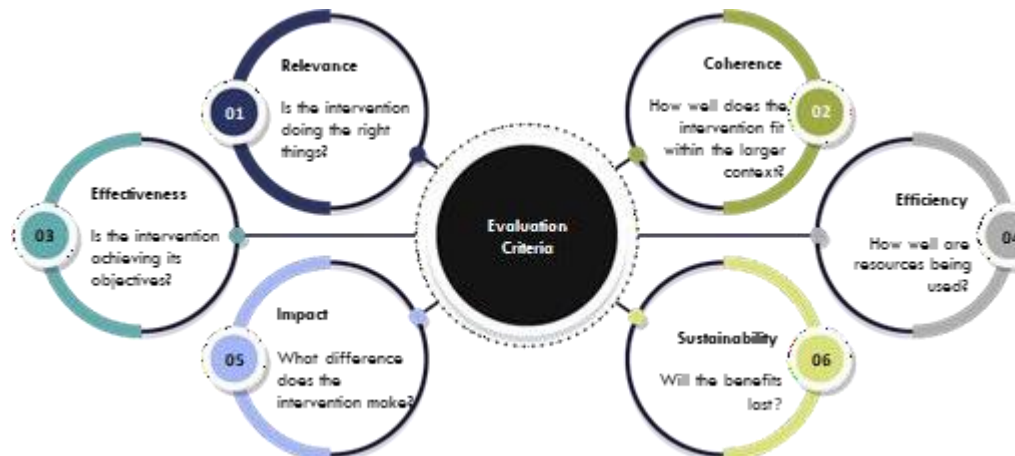


Figure 12: OECD- DAC Framework

The evaluation will assess the baseline values of various key indicators, against which the impact of the project can be assessed a year after completion. The components of the proposed evaluation framework are –

⁴ <https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

Relevance - The extent to which the objectives of the development intervention are consistent with beneficiary requirements, state needs, institutional priorities, partners and funding stakeholders, as well as mission coherence in achieving its objectives.

Coherence – The extent to which activities can converge with other programs/projects running the geography/sector.

Effectiveness - The extent to which the development project's objectives were achieved or are expected to be achieved considering their specificities (not just physical outputs but also high-level results; explaining factors determining achievements, including change of context; looking at other possible achievements)

Efficiency - A measure of how economically resources/inputs are converted into results, with reference to project benchmarks (include project delays, overruns; technical issues; operational cost ratio, economic rates of return)

Sustainability - The likely continuation of net benefits from a development intervention beyond the phase of funding support. It also includes an assessment of the likelihood that actual and anticipated results will be resilient to risks beyond the mission activities.

Impact - The changes that have occurred or are expected to occur in the lives of the target beneficiaries (direct and indirect).

1.4. Evaluation Matrix

The evaluation matrix for Eicher's CSR projects follows the OECD-DAC framework, assessing projects based on relevance, coherence, effectiveness, efficiency, impact and sustainability. It includes specific questions and indicators for each project, whether in education, health, or livelihoods to measure outcomes and how they were achieved. The assessment uses both primary and secondary data, collecting insights from students, teachers, health workers and community members, while also reviewing project reports and public sources. This ensures reliable and cross-verified findings.

The evaluation matrix is adaptable, considering diverse cultural and social contexts. It allows for flexible tools and indicators, ensuring context-sensitive yet methodical evaluations. By aligning with OECD-DAC criteria, it assesses project efficiency, alignment with development goals and long-term sustainability. This approach provides a comprehensive understanding of project successes and challenges, offering insights into future improvements.

The thematic evaluation matrix is included in the [Annexure](#).

2. Approach and Methodology

2.1. Study Design

This impact assessment will use a pre-post study design, which means it will compare data from before and after the project to measure its impact. To get a complete picture, the assessment will follow a mixed-methods approach, combining both quantitative and qualitative data.

The quantitative data will help measure the results in numbers, such as changes in key indicators, while the qualitative data will provide deeper insights into why and how these changes happened. By using both types of data, the study can cross-check findings from different sources, ensuring more accurate and reliable results. The assessment will collect information from both primary sources (like surveys and interviews) and secondary sources (such as existing reports or data) to create a well-rounded understanding of the project's impact.

2.2. Data Collection Methods and Sources

Quantitative Methods

For the quantitative data collection, **structured survey tools** were developed and rigorously pre-tested to ensure their effectiveness in real-field conditions. Pretesting helped identify any issues in the questionnaire, removing ambiguities and minimizing bias and errors. The data was collected using Computer Aided Personal Interview (CAPI) methods to ensure accuracy and efficiency. Our team utilized SurveyCTO, a digital data collection platform that streamlined the entire process—from targeting respondents and survey creation to data entry and visualization. SurveyCTO allowed for real-time data uploads, enhancing efficiency while also offering offline capabilities for data collection in low-connectivity areas. With GPS-based tracking, real-time geo-tagging, multilingual support and validation features, SurveyCTO ensured high data quality and seamless experience for field investigators.

Qualitative Methods

To complement the quantitative data, qualitative methods were employed to gain deeper insights into the impact of the CSR projects. This included **in-depth interviews (IDIs)**, **focus group discussions (FGDs)** and **key informant interviews (KIIs)** with relevant stakeholders such as beneficiaries, project implementers and community leaders. These interactions helped uncover contextual nuances, stakeholder perceptions and the underlying reasons behind quantitative findings. All interviews and discussions were recorded, transcribed and thematically analyzed to identify patterns and insights that contributed to a holistic understanding of the project's effectiveness, sustainability and impact.

2.3. Data Collection Process

The study was executed strategically in three phases to ensure completion of time:

- **Phase I:** Design Phase begins with consultative meetings to finalize indicators and methodologies based on stakeholder inputs and desk reviews. Sambodhi collaborated with the EML CSR team to ensure alignment with the RfP, documenting the approach in an inception report covering the assessment framework, sampling methodology, analysis plan and work plan. Quantitative and qualitative tools, developed in vernacular languages and referencing standardized underwent pre-testing in non-sample areas for refinement. Tools were translated and training materials developed to ensure uniform data collection.
- **Phase II:** Implementation Phase involves executing the sampling strategy, identifying study geographies and conducting primary data collection as per the established methodology.
- **Phase III:** Dissemination Phase focuses on sharing findings and insights with stakeholders, translating results into actionable recommendations for future initiatives and broader knowledge dissemination.

2.4. Data Analysis

The collected data was analyzed using a convergent mixed-methods approach, integrating quantitative and qualitative data for a comprehensive assessment of the project's impact. Quantitative analysis measured key indicators, while qualitative insights provided context to observed outcomes. Triangulation of findings from diverse sources enhanced the reliability and depth of the analysis. The study assessed endline values of key indicators, comparing pre- and post-intervention data to measure changes over time. This approach ensured a holistic evaluation, capturing both measurable outcomes and the underlying factors influencing the project's effectiveness.

2.5. Limitations

While this impact assessment provides valuable insights into the outcomes of these CSR initiatives, certain considerations must be acknowledged to contextualize the findings appropriately:


- Selection Bias: Given the scale of the intervention and the sampling approach, there is a possibility of some selection bias, particularly if certain sub-groups were self-selected into the study. However, concerted efforts were made to ensure diverse participation and capture a wide range of perspectives.
- Timeframe Constraints: The assessment reflects outcomes observed within the available study period and while it provides a meaningful snapshot of impact, some long-term effects may emerge over time. Future follow-ups could further enrich the understanding of sustained change.
- Self-Reported Data: A significant portion of the data is based on self-reported responses from beneficiaries and stakeholders. While every effort was made to enhance accuracy through careful data collection and validation techniques, minor variations due to recall or interpretation are natural in such studies.

2.6. Structure of the report

This report is structured to provide a holistic analysis of Eicher’s CSR projects, ensuring that insights are embedded within the OECD-DAC evaluation framework to highlight key findings across diverse thematic areas. The framework, encompassing **relevance, coherence, effectiveness, efficiency, impact and sustainability**, enables a multifaceted evaluation that captures both the outcomes achieved and the processes that led to those results. Our presentation of these findings weaves the data seamlessly into each criterion, clarifying how well projects align with broader development goals and how effectively resources are utilized.




To enable meaningful interpretation of the findings, a **two-tiered** benchmarking approach has been employed across the report. The benchmarking has been **limited** to key project-specific outcomes and impact indicators. Wherever credible benchmarking data is **available**, project outcomes have been compared against standardized external datasets such as NFHS (for health indicators) and ASER (for learning outcomes), as well as baseline or need assessment figures. In such cases, performance that exceeds these benchmarks is highlighted in blue, denoting a positive deviation from established standards.

Table 1: Colour coding - benchmark data is available

| Performance Band | Interpretation | Colour |
|-------------------|--|--|
| Exceeds benchmark | Performance surpasses credible external benchmark figures/ baseline values |  Blue |

Where external benchmarks are **unavailable**, a progressive scoring scale based on project duration, nature and literature review has been applied to assess outcomes. In this scale, scores are categorized as High, Moderate and Low each reflecting the level of performance and potential for scalability.

Table 2: Performance band- colour coding where benchmarking data is unavailable

| Performance Band | Score Range | Interpretation | Colour |
|------------------|-------------|---|--|
| High | 61–100% | Strong performance, scalable potential |  Green |
| Moderate | 31–60% | Average, in line with similar interventions |  Yellow |
| Low | 0–30% | Below average, needs improvement |  Red |

Additionally, for indicators where lower values indicate better outcomes (such as *dropout rates* or *disease incidence*), both the desired direction of change and the colour coding have been reversed to reflect positive performance. This structured approach ensures consistency, clarity and contextual relevance in evaluating project impact across varied geographies and interventions.

Activity 1: Ennum Ezhuthum

3. Impact assessment

3.3.1. Brief description of project activities

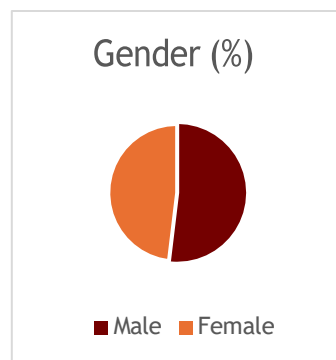
Eicher Motors Limited, in collaboration with the Madhi Foundation, is implementing several educational initiatives in Tamil Nadu to enhance the quality of education in government schools. **Ennum Ezhuthum** is one of them. Launched by the Tamil Nadu Department of School Education, this mission aims to ensure that all students in classes 1 to 5 acquire foundational literacy and numeracy skills by 2025. Madhi Foundation, working closely with state agencies to develop and implement strategies that address learning gaps, especially those exacerbated by the COVID-19 pandemic. The mission focuses on level-based instruction, integrated learning and the use of technology to create an engaging learning environment.

3.3.2. Key Findings

3.3.2.1. Relevance and Coherence

The Ennum Ezhuthum program, has been assessed for its relevance and coherence in enhancing foundational literacy and numeracy (FLN) skills among students in Tamil Nadu’s government schools, aligning with the OECD DAC definitions of relevance—how well it meets stakeholder needs—and coherence—its consistency with broader educational frameworks. Launched by the Tamil Nadu Department of School Education, this initiative targets Classes 1–5 with a goal of ensuring FLN proficiency by 2025, addressing learning gaps worsened by the COVID-19 pandemic through level-based instruction, integrated learning and technology-driven engagement. The analysis draws on the perspectives of teachers and students, reflecting the project’s alignment with local educational needs and its integration with existing government and NGO programs.

The program’s relevance is strongly evident in its resonance with the needs of teachers, all of whom (n=4) are female, with 75% aged 54 or older, bringing a wealth of experience—50% exceeding 20 years in the profession and all with at least 10 years—to their classrooms. Their qualifications further bolster this fit: 50% hold postgraduate degrees and 50% possess PhDs, equipping them to adopt advanced pedagogical strategies like those introduced by Ennum Ezhuthum. Having been involved with the project for over a year, all four teachers integrate its approaches into their daily practice, focusing 37.5% of their efforts on Tamil, 37.5% on Mathematics and 25% on English. This distribution aligns with the program’s emphasis on core FLN skills while broadening linguistic competency, addressing critical local needs. Pre-intervention, half reported students performing below grade level, but post-intervention, 75% observed a stronger grasp of foundational concepts, highlighting the initiative’s effectiveness in elevating learning outcomes for most classrooms.



For students, relevance is underscored by the program’s focus on foundational skill-building as they progress from Classes 1–3. The student cohort (n=131) includes 16.79% aged 8, 48.85% aged 9 and 34.35% aged 10, with 50.38% in Class 4 and 49.62% in Class 5, reflecting a near-even gender split (51.91% male, 48.09% female) as shown in fig. 13.

Figure 13: Gender distribution amongst students

Last year, 4.58% were in Class 1, 51.15% in Class 2 and 44.27% in Class 3, allowing assessment of FLN retention into higher grades. The shift from half of teachers noting below-grade proficiency pre-intervention to 75% reporting improvement post-intervention suggests the program meets students' needs for sustained understanding of basic literacy and numeracy, with strong performance in reading and math indicating a lasting impact.

Teachers' weekly time allocation further illustrates the project's practical relevance. Half (50%) spend six hours instructing students—whole-class, group, or individually—while 25% allocate one hour and 25% five hours, reflecting varied roles (75% full-time, 25% part-time) and responsibilities (75% teachers, 25% headmasters/headmistresses). For lesson planning, 50% dedicate two hours, 25% four hours and 25% five hours, while administrative duties show a similar pattern: 50% at two hours, 25% at three and 25% at five. This structured balance suggests Ennum Ezhuthum integrates effectively into their routines, though the 25% with only one instructional hour may indicate part-time or administrative constraints limiting engagement, a potential area for refinement.

Coherence shines through the program's alignment with Tamil Nadu's educational goals and its synergy with state agencies via Madhi Foundation's strategic support. Teachers' long tenure—25% at 10–15 years, 50% at 16–20 years and 25% over 20 years at their current schools—enables them to contextualize Ennum Ezhuthum against prior reforms, enhancing its fit within the system. The focus on Classes 1–5, with 50% of respondents teaching Classes 1–5 and 50% Classes 4–6, ensures continuity with the state's 2025 FLN target, while technology use complements national digital education trends. However, 25% of teachers reporting unchanged student proficiency post-intervention points to coherence gaps, possibly due to implementation variations or external factors like class size or socioeconomic barriers. Additionally, while convergence with the Department of School Education is robust, overlap with other NGO programs remains unmapped, suggesting room to strengthen coordination.

Overall, Ennum Ezhuthum demonstrates high relevance by addressing FLN deficits with a qualified, experienced teaching workforce and a student cohort primed for foundational growth, achieving a 75% improvement rate in learning levels. Its coherence with state and national educational frameworks ensures a unified approach, yet the persistent 25% unchanged proficiency signals a need for targeted support, perhaps enhanced training or resources to bridge implementation gaps. Refining these aspects could further align the initiative with Tamil Nadu's long-term educational vision, maximizing its impact and sustainability.

3.3.2.2. Efficiency and Effectiveness

Teacher Training

All teachers confirm attending teacher training sessions under the Ennum Ezhuthum project facilitated by Madhi Foundation. They also note that these training courses occur at the start of every term, ensuring that teachers receive ongoing guidance tailored to each new academic cycle.

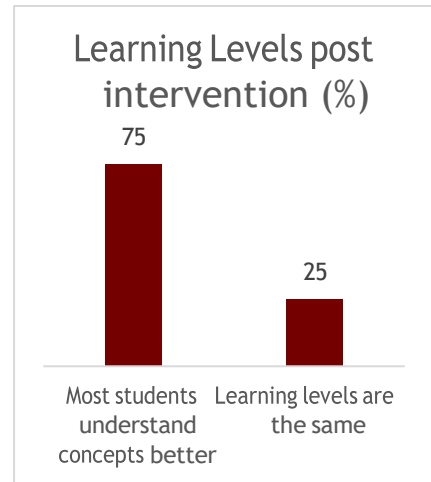


Figure 14: Learning levels of students post intervention

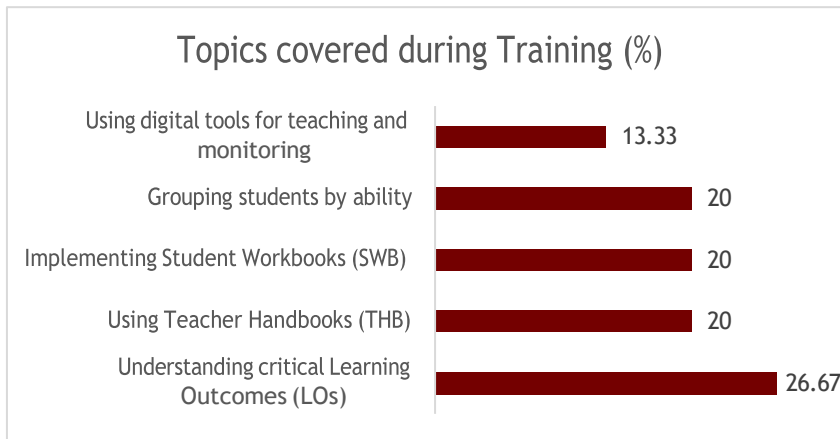


Figure 15: Teacher's Training Topics

When teachers were asked about which training topics they had covered during these sessions, 26.7% mentioned sessions on understanding critical learning outcomes, 20% reported receiving guidance on using Teacher Handbooks, 20% cited implementing Student Workbooks and 20% highlighted grouping students by ability. Another 13.3% spoke about learning to integrate digital tools for teaching and monitoring (as shown in fig. 15). These themes and sessions are

vital for advancing FLN (Foundational Literacy and Numeracy) rates because they equip teachers with structured methods, tailored learning aids and evidence-based strategies that help diagnose student needs, differentiate instruction and track progress effectively, ensuring every learner is supported in developing essential reading and math skills.

All respondents describe the teacher training sessions as “very effective” in helping them implement the Ennum Ezhuthum project. This consensus underscores the impact of structured guidance and hands-on demonstrations, suggesting that the sessions have been carefully designed to align with classroom realities. Teachers emphasize that the content covered in these trainings supports their day-to-day instruction, giving them greater confidence in delivering foundational literacy and numeracy lessons. The unanimous endorsement of training effectiveness reflects a strong alignment between training design and practical application, likely bolstered by the teachers’ extensive experience and qualifications.

"Previously, the stronger students moved ahead while the weaker ones lagged behind. Now, we use different strategies for different groups and it keeps everyone engaged."

"The focus on foundational learning ensures that even those struggling can catch up and those doing well can be challenged appropriately."

– Teachers trained under Ennum Ezhuthum

All teachers believe the training adequately prepares them to handle multigrade classrooms. The focus on differentiated instruction, along with guidance on planning and grouping, appears to help educators manage learners at varying skill levels within the same environment. This approach aligns with the broader goals of Ennum Ezhuthum, which prioritize adaptive strategies to ensure that all students, regardless of grade or background, receive the support they need to achieve foundational competencies. All teachers receive regular feedback from Zonal or Cluster Heads immediately after each classroom

observation. This consistent follow-up appears to strengthen the link between training goals and actual classroom implementation.

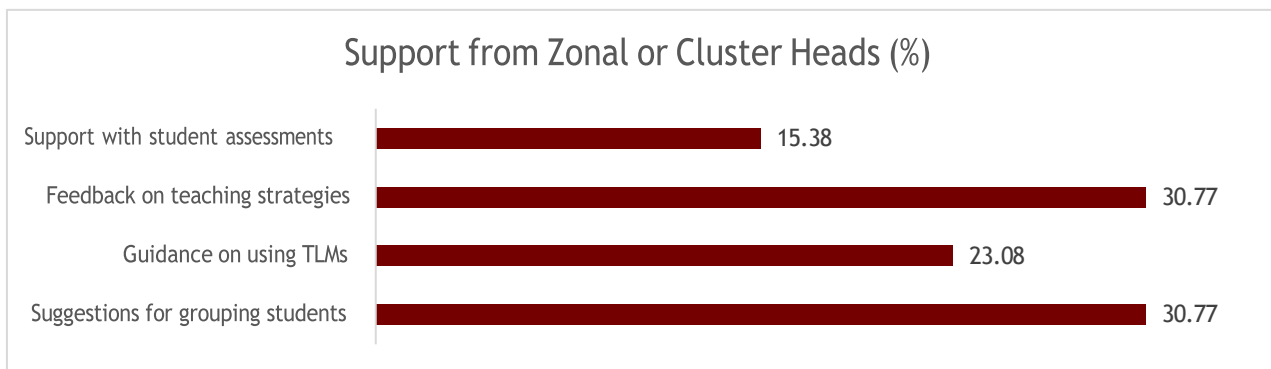


Figure 16: Support from Zonal or Cluster heads for teachers

In terms of specific assistance, suggestions for grouping students and feedback on teaching strategies each account for 30.8%. Guidance on using teaching-learning materials is cited at 23.08%, while support with student assessments is noted at 15.4% (as shown in fig 16). These areas of focus indicate a multifaceted approach to mentoring, emphasizing practical methods for managing diverse classrooms and aligning instructional strategies with Ennum Ezhuthum’s foundational literacy and numeracy objectives.

Use of Teaching-Learning Materials

Teachers indicate varied usage of the resources provided under Ennum Ezhuthum. Teacher Handbooks account for 25% of responses and Student Workbooks also stand at 25%. Learning Kits constitute 33.3%, suggesting that many educators see value in hands-on classroom activities. Meanwhile, QR-code-enabled resources reflect 16.67%, hinting that only a portion of teachers integrate digital components into their lessons (as shown in fig 17).

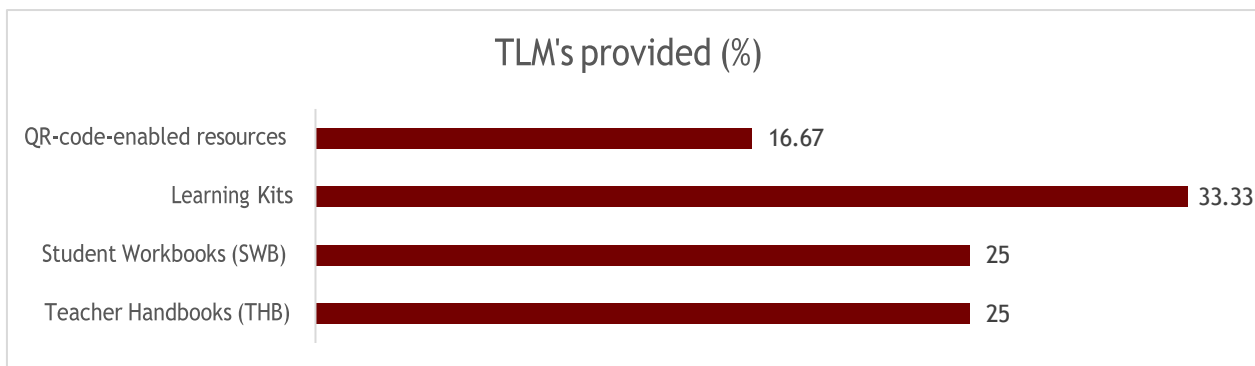


Figure 17: Teaching-Learning Materials (TLM) provided to teachers

Although these percentages may represent multiple selections from each respondent, the data suggests a multifaceted approach to instruction that combines print materials with more interactive tools. The preference

"Grouping students based on their abilities and using separate worksheets has made it easier to teach multiple levels within one class."

"We are using more activities and games that suit different learning levels, making the classroom more interactive and inclusive."

– Teachers trained under Ennum Ezhuthum

for Learning Kits over digital resources may reflect a reliance on tactile, engaging methods, possibly influenced by the teachers' extensive experience with traditional teaching aids.

In terms of day-to-day lesson planning, all teachers say they rely on the Teacher Handbook regularly. This unanimous daily use underscores its perceived practicality in structuring lessons and ensuring that class activities align with the project's foundational literacy and numeracy objectives. The reliance on the handbook may also reflect a preference for clearly outlined strategies, which can be particularly beneficial for handling multigrade classrooms that require adaptable, yet systematic, approaches to instruction.

All teachers confirm that the Student Workbooks are "very effective" in helping students reach the intended learning outcomes. These materials appear to complement the Teacher Handbooks by providing structured exercises and practice tasks, allowing students to engage with lesson content independently or in small groups. Their effectiveness aligns with the project's emphasis on ensuring that learners develop a firm grasp of foundational concepts, whether in language or numeracy.

"The workbooks are very useful. Children practice independently and we can check their progress easily."

"Students enjoy doing workbook exercises. It helps them retain what they learn in class."

– Teachers trained under Ennum Ezhuthum

However, not all students use their workbooks consistently, often due to lack of parental supervision at home.

"Some children do not bring their workbooks back with completed exercises. They say they forgot or no one helped them at home."

"In some cases, parents don't understand the importance of workbooks. They think it's just extra work, not essential to learning."

– Teachers trained under Ennum Ezhuthum

This contrast underscores a critical gap in parental engagement—while the workbooks are designed to reinforce classroom learning, their impact is limited when students lack encouragement or guidance at home.

Several teachers emphasized that for Ennum Ezhuthum to be fully effective, parental involvement must increase. While the program equips teachers with new strategies and materials, learning cannot be sustained only within school hours.

"If parents sit with their children, even for 10-15 minutes a day, they will see progress. But many parents do not ask what their child learned in school."

"Some parents are engaged and help with learning and we see those children doing much better. But many others don't check at all and these children struggle to keep up."

– Teachers trained under Ennum Ezhuthum

Barriers such as parents' work commitments, lack of awareness and limited literacy levels prevent consistent support at home.

"Parents are busy earning a livelihood. Even if they want to help, they don't always have time."

"Some parents feel they don't know enough to help their children. They hesitate to get involved."

– Teachers trained under Ennum Ezhuthum

Every teacher interviewed reported receiving training on using and adopting various digital platforms such as Palli Paarvai or the EE App. This finding reflects a concerted effort within the project to bring technology into routine teaching practices and data management. The unanimous endorsement highlights a recognition that digital tools can assist in monitoring student progress, enabling more targeted interventions where learning gaps appear.

Grouping Students by Ability

Teachers rely on two main approaches when dividing their classes by proficiency level. 50% use data gathered from baseline assessments, while the other half prefer ongoing classroom observations. This combination of periodic formal evaluations and continuous monitoring ensures that groupings remain flexible, enabling educators to adapt swiftly should any learner's needs change mid-term. The process also reflects Ennum Ezhuthum's core principle of catering to diverse skill levels within a single classroom environment.

"Earlier, it was difficult to manage students at different levels, but now, with grouping strategies, I can give attention to all."

"The training has helped us plan better for students who are ahead and those who need extra support. The structured methods make it easier to engage everyone."

– Teachers trained under Ennum Ezhuthum

Assessment Practices

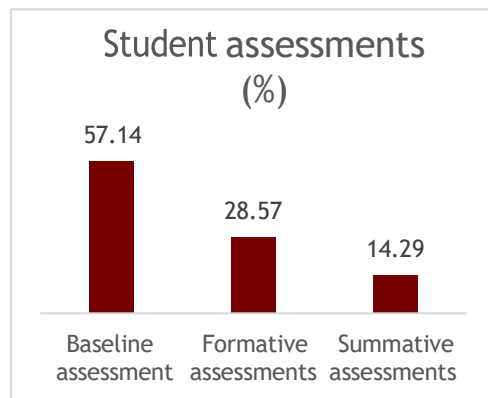


Figure 18: Types of Student Assessments

Teachers report a range of strategies for measuring student progress 57.1% reported using baseline assessments, indicating the project's strong emphasis on identifying initial skill levels before instruction begins. Formative assessments constitute 28.6%, offering ongoing checkpoints that allow teachers to adjust their methods as needed, while summative assessments account for 14.3%, capturing comprehensive performance at the close of a learning cycle (as shown in fig. 18). This distribution points to a nuanced evaluation system designed to track both immediate improvements and long-term mastery. The dominance of baseline assessments suggests a proactive approach to identifying needs early, complemented by formative checks that align with the teachers' adaptive teaching practices.

3.3.2.3. Impact

Remedial Teaching Hours

Before Ennum Ezhuthum began, teachers split their weekly remedial teaching time into two main ranges. Half of the respondents (50%) spent 2–3 hours on extra help, whereas the other half devoted nearly 4–5 hours. These figures suggest that one group provided moderate support while another offered comparatively more intensive assistance. After the project's introduction, 50% continued to allocate 4–5 hours and the remaining 50% expanded that commitment to 6 hours per week. This overall increase indicates a heightened focus on bridging learning gaps once the new methods and materials were put in place.

Impact on Students' Learning and Performance

Prior to the project, 75% of teachers reported having 10–15 students who could read simple sentences independently, while 25% noted about 20 such students in their class. Following the intervention, half of the teachers observed 20–22 independent readers, with the other half registering 24–26. These improvements reflect a marked boost in basic literacy, driven by structured practice and targeted remedial activities. As more students become comfortable handling simple texts, teachers attribute this growth to enhanced teaching methods and newly introduced resources that appear to foster greater reading confidence.

Comparisons with the previous term's assessments show corresponding gains in overall academic achievement. Half of the teachers recorded a 5–10% rise in students' average scores, while the remaining 50% saw increases between 11–20%. While the magnitude of progress varies, all teachers cite upward trends, suggesting that strategies like Ennum Ezhuthum's focus on remedial help and digital monitoring are positively influencing performance. Crucially, this momentum extends beyond reading and test scores: every teacher noted significant improvements in foundational literacy and numeracy, indicating balanced benefits across multiple core subjects. In fact, Tamil, English and Mathematics each showed the same degree of improvement—33.3%—which underscores the program's effectiveness in addressing a broad spectrum of essential competencies. By reinforcing these foundational skills, the intervention supports a more robust learning environment, one that helps students progress consistently and confidently through their academic journey.

Effectiveness in Multigrade Classrooms and Behavioral Changes

100% of teachers believe the project's emphasis on multigrade classrooms is effective. This endorsement aligns with earlier feedback regarding the value of data-driven grouping, ongoing observations and tailored resource use, which appear to help educators navigate the challenges of diverse learner profiles. Alongside academic benefits, teachers unanimously observe marked behavioural improvements: 100% report that students have become more participatory, confident and collaborative. These developments highlight Ennum Ezhuthum's role in nurturing a more inclusive and engaging classroom environment, where learners not only master foundational skills but also grow in their willingness to interact and support one another.

Teachers observed that students have become more engaged, confident and willing to participate in learning activities since the project's implementation. The interactive teaching methods and structured group activities encouraged under Ennum Ezhuthum have helped students overcome hesitation, particularly among those who previously struggled with foundational skills.

"Earlier, children would remain silent if they didn't know the answer. Now, they try to explain in their own words, even if they are unsure. This is a big change."

"They are not afraid to ask questions anymore. Even those who were shy now try to participate."

– Teachers trained under Ennum Ezhuthum

The emphasis on peer learning and small-group activities has also strengthened student collaboration. Teachers noted that stronger students support their peers, creating an environment where learning is not only teacher-driven but also peer-supported. With the introduction of structured Teaching and Learning Materials (TLMs), digital tools and active learning strategies, students feel more engaged with their studies, leading to greater confidence.

"Previously, if one student finished their work, they would just sit quietly. Now, they help others. They explain sums to their friends."

"We see them working together, discussing answers and even correcting each other's mistakes. This wasn't common before."

– Teachers trained under Ennum Ezhuthum

Use of the EE App and Teacher Readiness

75% of teachers reported using the EE App regularly to conduct student assessments and monitor progress, while 25% do so occasionally. This pattern suggests that most teachers consider the app fundamental to their daily tracking of learning, although a smaller fraction may still be exploring how best to integrate digital tools into their practice.

Despite the difference, 100% feel fully equipped to manage these assessments effectively. This universal confidence implies that the training provided under Ennum Ezhuthum initiative has successfully enabled teachers to transition from traditional paper-based methods to more technology-driven approaches without compromising instructional quality.

"They are excited to come to school now. They look forward to activities instead of just sitting and listening."

"When they use the math kits or the workbooks, they feel like they are solving problems on their own. It gives them confidence."

– Teachers trained under Ennum Ezhuthum

Students

FLN Performance Analysis

The dataset provides reading and math test levels, which are critical for assessing the impact of Ennum Ezhuthum on foundational skills

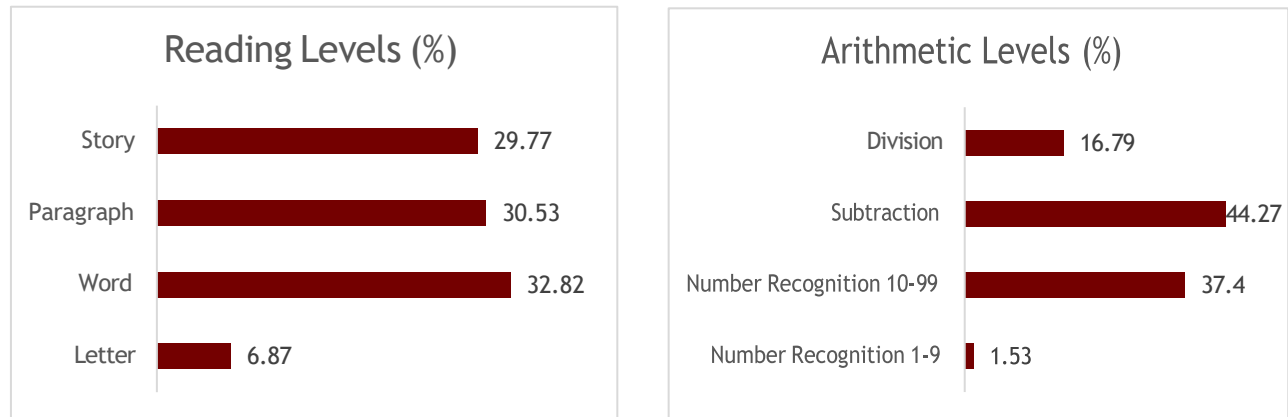


Figure 19: Students' Reading and Arithmetic Levels

Reading Levels

Only 6.87% of students are at the lowest level (letter recognition), suggesting most have progressed beyond basic letter recognition, which is a positive sign for an FLN program.

A significant portion (32.82%–29.77%) can read words, paragraphs, or stories, indicating moderate to strong literacy skills. However, nearly one-third are still at the word or paragraph level, suggesting room for improvement in achieving higher-order reading (story level).

This distribution suggests Ennum Ezhuthum may have helped many students progress, but a sizable group hasn't reached full story-reading proficiency, which is typically expected by Class 3 or higher.

Arithmetic Levels

Only 1.53% are at the recognizing numbers 1–9, math level, indicating most students have moved beyond basic number recognition.

A large proportion (37.4%–44.27%) can recognize numbers 10–99 or perform subtraction, showing solid numeracy skills for primary students.

However, only 16.79% can perform division, suggesting advanced numeracy skills are less common, which is expected for Classes 4–5 but indicates a gap in higher-level math proficiency.

Overall, numeracy appears stronger than literacy in this sample, with fewer students at the lowest levels compared to reading.

Table 3: Students' Reading and Arithmetic Levels

| Test Type | Level | Frequency (n=131) | Percentage |
|----------------|--------------------------|-------------------|------------|
| Reading | Letter | 9 | 6.87% |
| | Word | 43 | 32.82% |
| | Paragraph | 40 | 30.53% |
| | Story | 39 | 29.77% |
| Math | Number Recognition 1–9 | 2 | 1.53% |
| | Number Recognition 10–99 | 49 | 37.40% |
| | Subtraction | 58 | 44.27% |
| | Division | 22 | 16.79% |

Comparison with Tamil Nadu State-Level ASER FLN 2024 Results⁵

Reading Levels in Tamil Nadu (State-Level ASER FLN 2024 Findings)

The ASER FLN 2024 data provides insights into reading proficiency among children in Classes 4 and 5 in Tamil Nadu.

For **Class 4**, 3.4% of children are at the "Beginner" level, unable to recognize basic letters, while 10.2% are at the "Letter" level, recognizing letters but not words. About 31.2% can read at the "Word" level, demonstrating foundational literacy skills. A further 30.7% of students are at the "Paragraph" level, indicating they can read simple sentences and 24.5% are at the "Story" level, showing more advanced fluency. In total, 55.2% of Class 4 students are reading at or above the Paragraph level, while 44.8% remain below this benchmark, highlighting gaps in achieving grade-level reading skills.

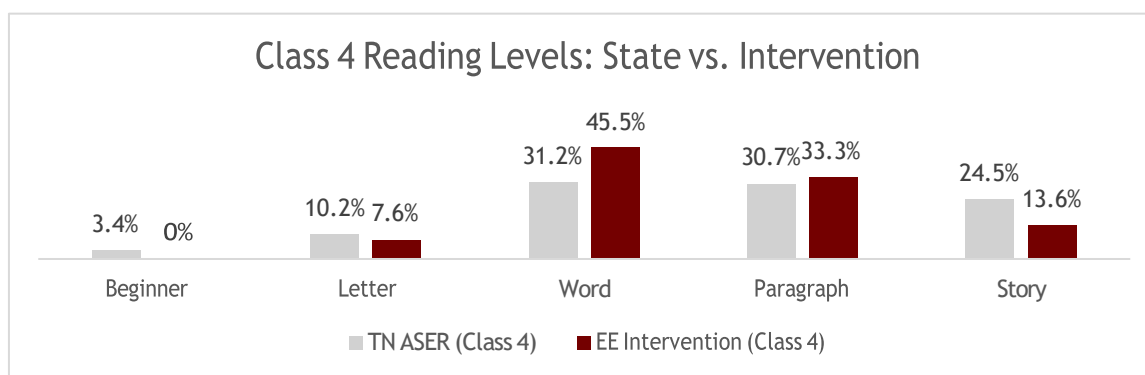


Figure 20: Class 4 Reading Levels: State vs. Intervention

For **Class 5**, 2.9% of children are at the "Beginner" level, indicating that they cannot recognize basic letters. The proportion of students at the "Letter" level is 6.0%, showing some students still struggle with basic word recognition. A total of 20.6% of Class 5 children are at the "Word" level, indicating foundational literacy, but they have yet to progress to sentence-level reading. About 34.8% of children in Class 5 can read at the "Paragraph" level, meaning they can understand simple sentences, while 35.6% are at the "Story" level,

⁵ Pratham Education Foundation. (2024). *Annual Status of Education Report (Rural) 2024: Provisional Findings*. ASER Centre.

demonstrating fluency in reading longer passages. Overall, 70.4% of Class 5 students read at or above the Paragraph level, while 29.6% remain below this threshold.

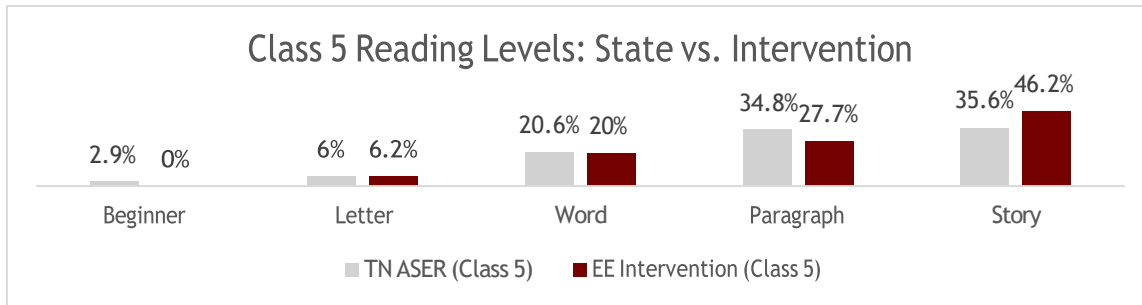


Figure 21: Class 5 Reading Levels: State vs. Intervention

Arithmetic Levels in Tamil Nadu (State-Level ASER FLN 2024 Findings)

The ASER FLN 2024 results also examine arithmetic proficiency among children in Classes 4 and 5.

For **Class 4**, 1.7% of students are at the "Not even 1-9" level, indicating an inability to recognize single-digit numbers, while 6.9% can "Recognize numbers 1-9" but struggle with larger numbers. A significant 49.5% can recognize numbers between 11 and 99, demonstrating foundational numeracy skills. In terms of operations, 35.4% of Class 4 students can perform subtraction, while only 6.5% can solve division problems. Overall, 41.9% of Class 4 students are at or above the subtraction level, while 58.1% remain below this benchmark, indicating gaps in achieving grade-appropriate numeracy proficiency.

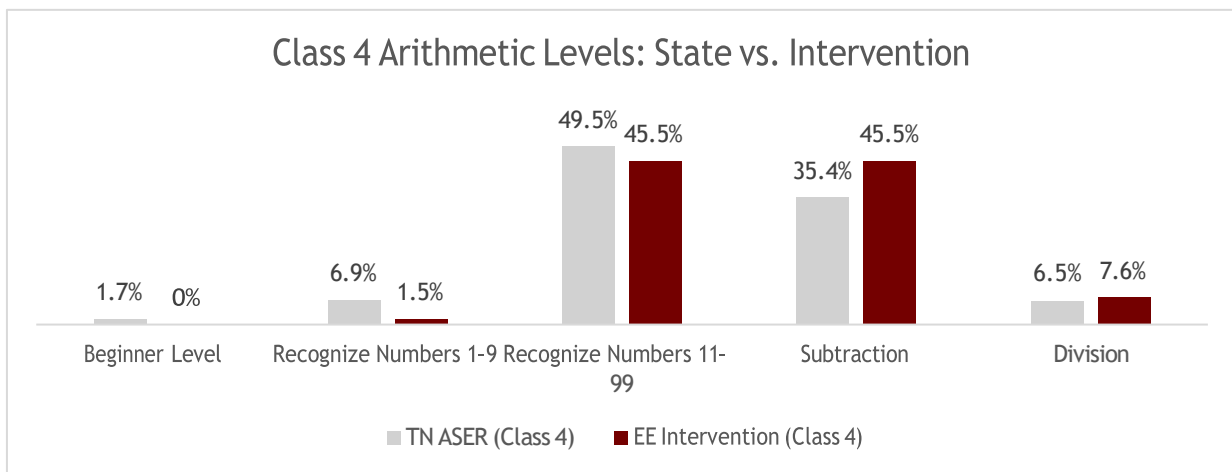


Figure 22: Class 4 Arithmetic Levels: State vs. Intervention

For **Class 5**, 1.7% of students are at the "Not even 1-9" level, indicating an inability to recognize basic single-digit numbers. The proportion of students at the "Recognize numbers 1-9" level is 5.4%, showing limited progress in moving beyond basic number recognition. A total of 38.0% of students can recognize numbers between 11 and 99, demonstrating foundational numeracy skills. About 34.2% of Class 5 students can perform subtraction, while 20.8% can solve division problems. In total, 55% of students are at or above the subtraction level, while 45.0% remain below this benchmark.

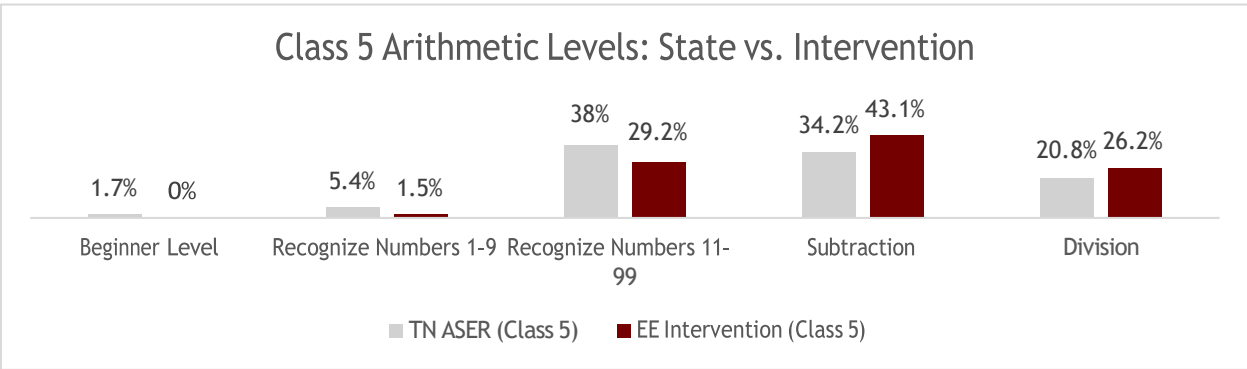


Figure 23: Class 5 Arithmetic Levels: State vs. Intervention

Key Observations

The quantitative findings indicate that the Ennum Ezhuthum (EE) intervention has had a significant impact on foundational literacy and numeracy, with notable improvements in word recognition and arithmetic skills. However, the challenges in advancing to higher order reading comprehension and strengthening foundational math skills suggest areas where additional support may be needed. Teachers' qualitative feedback provides critical insights into why these patterns have emerged and what factors contribute to both the successes and gaps observed.

Strength in Word Recognition but Challenges in Higher-Order Reading

The higher percentage of students at the word level in Class 4 under the intervention (45.45%) compared to the state (31.2%) suggests that EE's structured teaching methods and phonics-based approaches have effectively built early literacy. However, fewer students reached the story level (13.64% vs. 24.5% in the state), indicating difficulties in progressing from decoding words to comprehending longer texts.

Teachers highlighted how the availability of structured Teaching and Learning Materials (TLMs), including phonics-based resources and student workbooks, have supported early reading skills:

"They are able to read words much faster now. Even those who struggled earlier can break down words and sound them out."

– Teachers trained under Ennum Ezhuthum

However, comprehension skills remain a challenge, as students often focus on decoding rather than understanding meaning:

This insight explains the lower percentage of intervention students reaching the story level—while they have built a strong foundation in word recognition, additional efforts are required to strengthen comprehension and fluency.

Gaps in Transitioning from Word Recognition to Paragraph Comprehension in Class 5

The Class 5 data shows stronger reading comprehension at the story level in the intervention group (46.15%) compared to the state average (35.6%), which indicates that over time, students exposed to EE strategies are better able to engage with longer texts. However, paragraph-level proficiency in the intervention group (27.69%) is slightly lower than in the state (34.8%), suggesting difficulties in making the leap from recognizing words to understanding structured sentences and paragraphs.

"They can read, but when I ask them to explain what they read, many struggle. They repeat the sentence but don't grasp the story."

"Some children can recognize words but hesitate when reading full sentences. They need more practice with longer passages."

– Teachers trained under Ennum Ezhuthum

"Some children read well when given words separately, but when they see them in a paragraph, they pause or struggle."

"We practice reading aloud, but when we ask them questions about what they read, they are unsure how to answer."

– Teachers trained under Ennum Ezhuthum

Teachers provided qualitative evidence of this transitional gap: These insights indicate that while EE has effectively promoted reading at the story level, the progression through paragraph reading remains uneven. More structured comprehension exercises and exposure to diverse texts may be needed to bridge the gap between word recognition and fluent reading of connected text.

Stronger Arithmetic Performance, but Foundational Numeracy Needs Reinforcement

In Class 4 Arithmetic, students in the intervention performed better in subtraction (45.45%) compared to the state (35.4%), which suggests that EE's activity-based, hands-on math instruction has effectively reinforced applied numeracy skills. However, number recognition was slightly lower in the intervention group (45.45%) compared to the state (49.5%), which could indicate gaps in foundational number sense.

Teachers reflected on this issue, emphasizing that while students grasp operational concepts like subtraction, they sometimes lack confidence with basic number recognition and sequencing:

"They can do sums when we guide them, but when asked to identify numbers on their own, some hesitate."

"We use number charts and activities, but some children still mix up numbers, especially when moving from one-digit to two-digit numbers."

– Teachers trained under Ennum Ezhuthum

This supports the quantitative finding that early numeracy skills (recognition of numbers 10–99) need strengthening, even as students demonstrate competency in performing arithmetic operations.

Class 5 Students Excel in Division but Struggle with Number Recognition

The higher percentage of Class 5 intervention students proficient in division (26.15%) compared to the state (20.8%) suggests that EE has successfully introduced students to higher-order arithmetic concepts. However, the lower number recognition rate (29.23% vs. 38% in the state) indicates that early math fundamentals remain a weak point.

Teachers provided insights into why this pattern exists:

"They can divide because we practice using real-life examples, like sharing objects in groups. But some still struggle with recognizing large numbers."

"If we say 'divide 40 by 5,' they do it. But if we ask them to write 'forty' or identify a number on the board, some hesitate."

– Teachers trained under Ennum Ezhuthum

These observations suggest that interactive, real-world math applications (such as division) have been successfully embedded into the learning process, but some students still require reinforcement in recognizing and working with numbers independently.

3.3.2.4. Sustainability

Why EE Students Show Better Results

The Foundational Literacy and Numeracy (FLN) data used for this comparative analysis comes from students in two Sandbox schools in Chennai. These schools serve as pilot sites where any new interventions under the Ennum Ezhuthum (EE) program are first tested before being scaled across all government schools in Tamil Nadu.

As a result, teachers in these Sandbox schools receive enhanced training and are better equipped to implement instructional strategies effectively. This early exposure to refined teaching methodologies, structured pedagogy and additional resources contributes to better student outcomes in basic literacy and numeracy. The stronger teacher preparedness and more refined implementation of EE strategies likely explain why students in these intervention schools demonstrate better performance in both literacy and numeracy compared to state averages.

The **Ennum Ezhuthum (EE) intervention** has facilitated notable advancements in students' reading and arithmetic abilities, particularly in higher-level competencies such as story comprehension and division. However, persistent gaps in foundational skills, including number recognition and paragraph reading, highlight areas needing further attention to ensure comprehensive learning improvements.

Influence of Third-Party Interventions in Government Schools

Third-party interventions, like the EE initiative supported by Madhi Foundation, can significantly impact educational outcomes in government schools. These interventions often introduce innovative teaching methodologies, targeted resources and specialized training, contributing to improvements in specific learning areas. For instance, the implementation of low-cost EdTech products in government schools has led to substantial learning gains in subjects like math and science.

Challenges and Considerations

Despite these benefits, challenges persist in fully integrating third-party interventions into the existing educational framework:

1. **Increased Teacher Workload:** Introducing new programs often requires additional training and administrative tasks, adding to teachers' existing responsibilities. Teachers are frequently burdened with non-teaching tasks, including administrative duties, which take them away from their core function of teaching. This additional workload can lead to diminished instructional capacity and increased burnout among educators. While there is an initial learning curve, EE actually aims to simplify teaching in the long run by streamlining the curriculum for multi-grade classrooms, reducing administrative tasks and providing structured lesson plans.
2. **Sustainability and Scalability:** While pilot programs may show success, scaling these interventions across diverse regions requires substantial resources and consistent support from local education authorities. The transition from community-based models to government-led pathways, often illustrates the complexities involved in scaling educational interventions.
3. **Systemic Integration:** Integrating third-party interventions into the existing school system necessitates collaboration with various stakeholders, including teachers, administrators and policymakers. This integration ensures that interventions complement rather than disrupt established educational practices. The NEP 2020's recommendation to establish bodies like the State School Standards Authority (SSSA) aims to standardize and regulate such integrations, promoting accountability and quality assurance.

Third-party interventions in government schools offer valuable opportunities to enhance educational outcomes by introducing specialized programs and resources. However, their success depends on careful alignment with national policies, sustainable scaling strategies and seamless integration into the existing educational ecosystem. Addressing challenges such as increased teacher workload is essential to maximize the benefits of such interventions and ensure lasting improvements in student learning experiences.

Table 4: Cumulative Class 4 and 5 FLN Levels: State vs Intervention

| 1. Class 4 Reading: State vs. Intervention | | |
|--|--------------------------|----------------------------------|
| Reading Level | TN ASER (Class 4) | EE Intervention (Class 4) |
| Beginner | 3.4% | 0% |
| Letter | 10.2% | 7.58% |
| Word | 31.2% | 45.45% |
| Paragraph | 30.7% | 33.33% |
| Story | 24.5% | 13.64% |
| | | |
| 2. Class 5 Reading: State vs. Intervention | | |
| Reading Level | TN ASER (Class 5) | EE Intervention (Class 5) |
| Beginner | 2.9% | 0% |
| Letter | 6% | 6.15% |
| Word | 20.6% | 20% |
| Paragraph | 34.8% | 27.69% |
| Story | 35.6% | 46.15% |
| | | |
| 3. Class 4 Arithmetic: State vs. Intervention | | |
| Arithmetic Level | TN ASER (Class 4) | EE Intervention (Class 4) |
| Beginner Level | 1.7% | 0% |
| Recognize Numbers 1–9 | 6.9% | 1.52% |
| Recognize Numbers 11–99 | 49.5% | 45.45% |
| Subtraction | 35.4% | 45.45% |
| Division | 6.5% | 7.58% |
| | | |
| 4. Class 5 Arithmetic: State vs. Intervention | | |
| Arithmetic Level | TN ASER (Class 5) | EE Intervention (Class 5) |
| Beginner Level | 1.7% | 0% |
| Recognize Numbers 1–9 | 5.4% | 1.54% |
| Recognize Numbers 11–99 | 38% | 29.23% |
| Subtraction | 34.2% | 43.08% |
| Division | 20.8% | 26.15% |

3.3.3. Success Stories and Best Practices

Ennum Ezhuthum – Strengthening Basic literacy and numeracy in Tamil Nadu

Introduction

Ennum Ezhuthum is a transformative statewide initiative in Tamil Nadu aimed at ensuring that every child in Grades 1-5 acquires age-appropriate reading, writing and numeracy skills by 2025. The program introduces a structured level-based curriculum supported by teacher handbooks, student workbooks and Teaching-Learning Material (TLM) Kits, making learning more interactive and engaging. By addressing students' current learning levels and providing adaptable resources, the initiative fosters a dynamic and inclusive classroom environment.

Addressing Learning Gaps

The need for this intervention arose from significant gaps in foundational literacy, worsened by rote learning practices, the COVID-19 pandemic and inconsistent teacher training. To bridge these gaps, the program ensures the distribution of learning materials to 2.7 million students every three months, while also focusing on capacity building of teachers. Over 90% of teachers have attended training sessions with 80% demonstrating improved teaching practices. Classrooms have shifted from passive learning to activity-based engagement, with student participation levels exceeding 90%.

Impact and Sustainability

Based on the information shared by the Madhi Foundation, the initiative has already shown significant improvements in student learning, with ASER 2025 data indicating a rise in literacy and numeracy scores across Tamil Nadu. Beyond numbers, students demonstrate higher engagement, teachers actively incorporate TLMs into daily lessons. Ennum Ezhuthum stands as a model for effective large-scale education reform, proving that structured resources, well-equipped teachers and a child-friendly approach can drive lasting improvements in basic literacy and numeracy.



3.3.4. Challenges

While the Ennum Ezhuthum initiative has made significant strides in improving foundational literacy and numeracy, several challenges have surfaced in its implementation, impacting teachers, students and parents alike. One of the primary difficulties faced by educators is managing classrooms with students at varying levels of proficiency. While the ability-based grouping strategy was intended to address this, in practice, it has proven challenging to implement effectively. Teachers noted that while stronger students finished their tasks quickly and were left disengaged, weaker students required ongoing support, stretching the capacity of educators who were already managing large class sizes. With an average of 40 students per class, teachers found it difficult to provide personalized attention, particularly to slower learners, who often struggled to keep pace with the lessons.

The structured teaching-learning materials (TLMs) introduced under the initiative have played a crucial role in improving student engagement, yet there were reported challenges in their usage. Teachers observed that while students responded positively to workbooks, they often required direct guidance to complete the exercises, limiting their ability to work independently. The decision to keep workbooks at school further distanced parents from understanding their children's academic progress, creating a gap between school learning and home support. Many parents expressed confusion, as the content in workbooks did not always align with the traditional textbooks, they were familiar with, leading to a lack of engagement in their child's learning process. This disconnect has made it difficult for parents to provide effective learning support at home.

Another major concern raised was the integration of digital tools and assessments into the classroom. While technology, including apps like Palli Paarvai and the Ennum Ezhuthum digital tools, was introduced to track student progress and facilitate assessments, its effectiveness was mixed. Teachers noted that while some students adapted quickly to using digital resources, others struggled to navigate them effectively. Additionally, the assessment process often required students to complete exercises on digital platforms without fully comprehending the material, as time constraints led them to simply click answers rather than engage deeply with the questions. Teachers also faced difficulties in monitoring student engagement with digital tools, particularly in classrooms with larger student populations. While such were the teachers' thoughts, there is an initial learning curve with Ennum Ezhuthum, it aims to simplify teaching in the long run by streamlining the curriculum for multi-grade classrooms, reducing administrative tasks and providing structured lesson plans.

Teacher workload emerged as a significant constraint in ensuring the effective delivery of the program. In addition to teaching responsibilities, educators were burdened with administrative tasks such as data entry, lesson documentation and student assessments. The requirement to complete structured activities and monitor progress within limited timeframes added to their stress. While teachers acknowledged that training sessions were helpful in enhancing their instructional skills, they also noted that the volume of activities expected under the initiative often left them with insufficient time to cater to individual student needs. Many educators expressed concerns about the sustainability of the program's approach, emphasizing the need for more flexible timelines and additional support staff to ease their workload.

Parental engagement in the program also emerged as a critical challenge. While some parents actively participated in parent-teacher meetings and sought to support their children, many struggled to provide consistent academic guidance. Teachers observed that children from households where parents took an active interest in their education showed significantly better progress than those who lacked such support. However, several parents cited their own limited educational backgrounds as a barrier to assisting their children, particularly in subjects like English and Mathematics. Others expressed concerns that the current teaching methods deviated from traditional approaches, making it difficult for them to track their child's learning journey.

Additionally, teachers raised concerns about the ability of students to develop higher-order thinking skills under the program. While the initiative successfully improved basic literacy and numeracy, some students struggled with applying these skills in new contexts. For instance, while students could recognize words, they often found it challenging to comprehend full paragraphs or extract meaning from longer texts. Similarly, in mathematics, while basic operations were well understood, more complex problem-solving remained a challenge. The lack of reinforcement beyond structured classroom activities meant that students were not always able to internalize and apply what they had learned.

Infrastructure limitations in some schools also posed a challenge, particularly in implementing digital learning initiatives. While tablets and digital tools were introduced as part of the program, not all schools had sufficient resources to ensure equitable access. Some teachers noted that while technology integration was beneficial, the lack of smartboards and digital classrooms in certain schools limited the reach of these interventions. Additionally, unreliable internet connectivity in some areas made it difficult to fully leverage digital learning tools.

Overall, while Ennum Ezhuthum has made commendable progress in enhancing basic literacy and numeracy, these challenges highlight key areas for improvement. Addressing teacher workload, strengthening parental involvement, refining digital integration and ensuring adequate support for differentiated learning will be critical to maximizing the program's long-term success. Greater flexibility in implementation, additional training for teachers and structured mechanisms to engage parents more effectively could help bridge these gaps, ensuring a more holistic and sustainable learning experience for students across all levels

3.3.5. Recommendations

The Ennum Ezhuthum program can be further strengthened and sustained by focusing on teacher support, digital integration, parental engagement and refining classroom practices. Teachers are coping with substantial workloads, often juggling classroom instruction with administrative responsibilities in large classrooms that average about 40 students. By introducing teaching assistants or volunteers, educators can dedicate more attention to targeted instruction for both struggling learners who risk falling behind and advanced students who need enrichment activities. This approach allows for greater differentiation, addressing the concern that fast learners often remain idle while slower learners lag, ultimately reducing gaps in skill levels.

At the same time, digital tools have shown promise but require appropriate infrastructure and ongoing teacher training to reach their full potential. Although 75% of teachers (n=4) regularly use platforms like Palli Paarvai and the EE App, 25% utilize them only occasionally, largely due to hardware constraints. One teacher noted, "lessons displayed on a smartphone screen are not visible to all students," Underscoring the need for shared tablets, projectors, or offline features to ensure digital lessons benefit every child. When effectively integrated, such tools can increase engagement and help track student progress in real time, provided teachers feel confident in their ability to incorporate technology into daily instruction.

Parental involvement remains a critical area of improvement, as inconsistent use of workbooks hinders some children's progress at home. While 75% of students (n=131) have shown improvements in reading and math, many still need additional reinforcement outside the classroom. Regular orientation sessions and simple take-home materials could empower families to reinforce learning, even when parents have limited literacy or are busy with work. Short, structured updates via WhatsApp or SMS can guide parents on weekly activities to try with their children, helping them stay connected to what happens in school.

"Some children don't bring workbooks back completed. They say no one helped them at home." - Teachers

"If parents spend just 10-15 minutes daily, they will see progress." - Teacher

Despite notable gains in foundational literacy and numeracy, deeper comprehension and problem-solving skills remain areas of concern. Only 29.77% of students can read full stories and just 16.79% perform division, indicating the need to expand guided reading sessions and interactive math lessons. Incorporating methods such as the abacus or real-life examples can help children move beyond basic operations. Aligning Ennum Ezhuthum materials more closely with the state syllabus can address worries about curriculum differences, making it easier for parents and teachers to track learning milestones. Addressing resource shortages—particularly in workbooks and learning kits—will also ensure consistent implementation and sustained progress. By refining classroom practices, strengthening technological infrastructure, engaging parents more effectively and relieving teachers of excessive burdens, Ennum Ezhuthum can continue to drive significant and lasting improvements in early-grade literacy and numeracy across Tamil Nadu.

Activity 2: Sandbox Schools

4. Impact assessment

4.4.1. Brief description of project activities

Eicher Motors Limited, in collaboration with the Madhi Foundation, is implementing several educational initiatives in Tamil Nadu to enhance the quality of education in government schools.

Sandbox Schools: This initiative seeks to transform teaching and administrative processes in select government schools, referred to as "sandbox schools." The goal is to strengthen basic literacy and numeracy by implementing micro-innovations at the classroom level. Madhi Foundation collaborates with school leaders and teachers to seamlessly integrate existing primary school programs with new strategies, fostering an environment conducive to holistic student development.

4.4.2. Key Findings

4.4.2.1. Relevance and Coherence

The Sandbox Schools initiative has been assessed for its relevance and coherence through the perspectives of key stakeholders, including **teachers, students and parents**. This analysis follows the OECD-DAC definitions of relevance, which evaluates how well the intervention meets stakeholder needs and coherence, which examines its alignment within the broader educational and policy landscape.

Teachers

The Sandbox Schools model is highly relevant to the needs of teachers, given their extensive experience and strong academic qualifications. All respondents (n=5) are female, with 40% aged between 40–49 years and 60% between 50–59 years, indicating a relatively senior teaching workforce. Their experience ranges from 15 to 30 years, with 60% having over 20 years, including 40% with three decades in the field. Additionally, 80% of teachers hold graduate or postgraduate degrees, while 20% possess a advanced / higher degree, highlighting strong subject-matter expertise and adaptability to new pedagogical approaches.

The Sandbox Schools initiative ensures that teachers are fully engaged, as all respondents are full-time employees. This guarantees consistent participation in the interventions, training programs and classroom-based innovations introduced under the project. The initiative also targets **grades 1–3**, with 40% of teachers instructing 1st standard, 20% teaching 2nd standard and another 40% handling 3rd standard, ensuring comprehensive coverage of early primary education which are the target grades for basic literacy and numeracy program.

However, variations exist in time allocation across instructional activities, lesson planning and administrative responsibilities. While 60% of teachers dedicate over 30 hours per week to direct classroom instruction,

20% teach only 0–10 hours due to additional non-teaching responsibilities. Another 20% spend 11–20 hours per week in the classroom, balancing instruction with administrative and leadership roles. Similarly, 40% of teachers devote over 20 hours per week to lesson planning and assessment, while another 40% allocate only 0–10 hours, possibly leveraging pre-developed materials or streamlining lesson delivery.

In terms of administrative responsibilities, workload distribution varies widely. 40% of teachers report minimal administrative involvement (0–10 hours per week), while another 40% spend 11–20 hours per week on non-teaching duties. However, 20% of teachers spend over 40 hours per week on administrative tasks, indicating a substantial burden, possibly tied to leadership roles or institutional responsibilities. The Sandbox Schools initiative aligns with national education policies, particularly the National Education Policy (NEP) 2020, which emphasizes competency-based learning and technology integration. A key component of coherence is the use of Teaching-Learning Materials (TLMs) in multi-grade classrooms. Among teachers, 80% rated TLMs as highly relevant, indicating their effectiveness in facilitating differentiated instruction. However, 20% suggested minor modifications, emphasizing the need for further customization to fully align with multi-grade classroom needs.

These findings highlight the coherence of the project within broader educational challenges, such as teacher shortages and multi-grade classrooms, where a single teacher must instruct students across different levels grades simultaneously. This setup poses significant challenges, as teachers must address diverse curricula and learning needs concurrently, potentially compromising instructional quality.⁶ Moreover, the additional responsibility of managing extracurricular activities can further strain teachers' capacity, leading to a reduction in dedicated instructional hours.⁷ Addressing these concerns through structured workload management, lesson planning support and targeted training can enhance the sustainability and effectiveness of the project.

Students

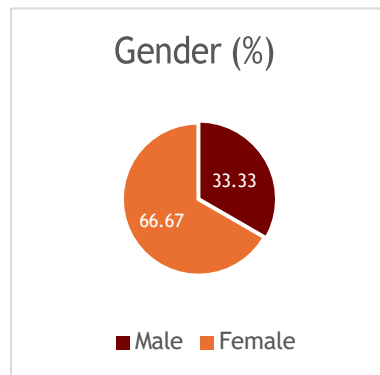


Figure 24: Gender distribution amongst students

The gender distribution of surveyed students shows that 66.67% are female and 33.33% male, ensuring a gender-equitable learning environment. The largest age group (38.89%) is 9–10 years, followed by 19.44% aged 8 years and 2.78% aged 11 years, reflecting a typical age range for primary schooling in India.

Most student respondents (66.67%) are currently in Class 5, followed by 25% in Class 4 and 8.33% in Class 3. Looking at the previous academic year, 66.67% of students were in Class 3, while 25% were in Class 2 and 8.33%, studied in Class 1 during 2022-23.

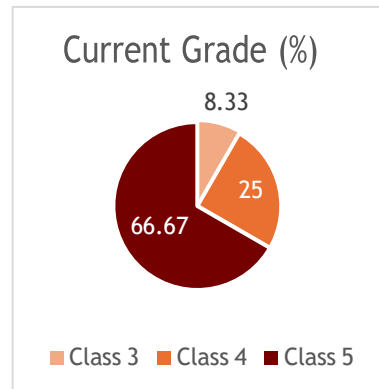


Figure 25: Grade distribution amongst students

Retention trends indicate long-term student engagement, with 30.56% enrolled at the school for four years, 19.44% for five years and 16.67% for six years. A smaller proportion, 5.56%, have attended for only one or two years, suggesting potential mobility-related disruptions in their education. Since only 2.78% of students have been enrolled for seven years, this further supports the notion that students transition once they reach middle school as the surveyed schools are primary schools in Chennai.

⁶ Bajpai, N., & Pandey, J. (2023). *Challenges of multigrade class teaching*. International Journal of Science and Social Science Research, 1(1), 13–19.

⁷ Mehta, A. C. (2023). *Implications of the teacher shortage for student learning outcomes*. Education for All in India.

Parents

Parental occupation provides important insights into household economic stability and its influence on educational engagement. Among mothers, 61.11% are housewives, reflecting a high proportion of non-earning women caregivers. In contrast, only 16.67% of mothers are engaged in salaried employment, while 8.33% engage in independent work. This economic structure suggests that many families rely on a single income source, which could impact their ability to invest time and resources in their child's education.

Fathers have a more diverse occupational profile, with 41.67% engaged in salaried jobs and 25% running their own businesses, suggesting a steady yet single income source for many families. However, 16.67% of students reported their father's occupation as artisans, 11.11% are daily wage labourers and only 2.78% engage in agricultural work, indicating typical income variability across urban households.

Parental involvement plays a crucial role in sustaining basic literacy and numeracy and the Sandbox Schools model has influenced parental awareness levels significantly. 60% of teachers observed a strong increase in parental engagement, with more parents attending meetings, asking about homework and tracking their child's progress.

"Earlier, parents were not involved much in their children's learning. Now, they attend meetings, ask about homework and want to know how their child is progressing." – Implementation Partner

However, 20% of teachers reported no significant change, while another 20% observed a decline in parental engagement over time. This suggests that while early-stage interventions increased awareness, some parents have reduced their participation, relying solely on teachers for educational responsibilities.

"In the beginning, parents were curious and attended meetings. But over time, some have stopped coming regularly. They still rely fully on teachers." – Implementation Partner

Research suggests that parental engagement can be improved through personalized follow-ups, community-based outreach and flexible communication strategies (Saxena, 2019).⁸ While the project has increased awareness among 60% of parents, targeted efforts are needed to address engagement gaps observed in 20% of households (Mukherjee, 2021).⁹

4.4.2.2. Efficiency and Effectiveness

Training

The number of training sessions attended by teachers over the past academic year varied, with most participating in 4-8 sessions or more than 12 sessions, each accounting for 40% of teachers. A smaller proportion, 20%, attended 8-12 sessions, reflecting varied levels of engagement with professional development opportunities. The frequency of these training sessions was predominantly monthly, as reported by 80% of teachers, ensuring regular reinforcement of teaching methodologies. However, 20% indicated that the training was less frequent than once a month, potentially affecting their ability to implement new strategies consistently.

⁸ Saxena, R. (2019). Strategies for effective school-family partnerships in rural India. *International Journal of Educational Research*, 7(1), 54–62.

⁹ Mukherjee, A. (2021). Promoting parental engagement in government schools: A field study. *Journal of Social Education and Policy*, 15(3), 76–89.

Teachers received a diverse range of training sessions aimed at improving classroom instruction and adapting to multigrade teaching environments. The most attended training focused on multigrade teaching methodologies, with 24% of teachers participating. Other areas, including classroom management strategies, the use of TLMs and technology in teaching, assessment and evaluation techniques were each

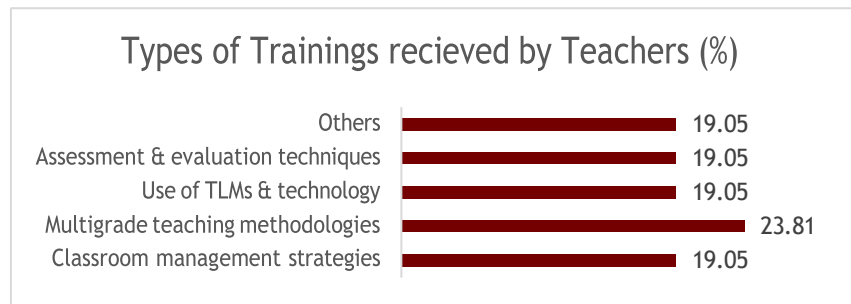


Figure 2c: Types of Teachers Trainings

attended by 19% of teachers. This distribution indicates a balanced exposure to various aspects of teaching, though multigrade strategies received the highest emphasis, aligning with the project's goal of improving basic literacy and numeracy in classrooms with mixed-grade instruction.

The training sessions were designed to address specific classroom challenges, with 40% of teachers strongly agreeing that the sessions were individualized based on their needs and classroom observations. Another 40% agreed, suggesting that most teachers felt the training was tailored to their professional development requirements. However, 20% remained neutral, indicating that some teachers did not perceive a significant customization in their training experiences.

Following the training, teachers exhibited a strong commitment to implementing new instructional strategies. 60% of teachers reported frequently using newly acquired teaching methodologies, while 40% integrated them into every lesson. This high adoption rate suggests that the training not only built confidence but also facilitated the consistent application of innovative teaching approaches in daily classroom practice.

Usage of Teaching Learning Materials (TLMs)

Prior to the implementation of the project, the use of structured teaching aids, beyond textbooks, varied significantly among teachers. Most teachers, approximately 40% (n=5), spent 30-40 hours per week incorporating these materials into their lessons, demonstrating a strong reliance on supplementary instructional aids. A smaller group, 40%, dedicated less than 10 hours per week, indicating minimal engagement with structured teaching resources. The remaining 20% fell within the 20–30-hour range, suggesting a moderate but consistent use of additional learning aids. Following at least one academic term of project involvement, a shift in teaching strategies was observed. While 20% of teachers still reported spending under 10 hours per week with project-provided Teaching and Learning Materials (TLMs), the majority had significantly increased their engagement. Around 40% of teachers now dedicate 20-30 hours per week to using TLMs and another 20% had further increased their usage to over 50 hours per week. This transformation suggests greater adoption of project-endorsed methodologies, leading to a more resource-driven and structured approach in classroom instruction.

Around 40% of teachers now dedicate 20-30 hours per week to using Teaching and Learning Materials (TLMs) and another 20% have further increased their usage to over 50 hours per week. This transformation suggests greater adoption of project-endorsed methodologies, leading to a more resource-driven and structured approach in classroom instruction. The implementation partner emphasized that teachers appreciate the quality and structure of the materials, stating,

"The teaching materials are well-structured and very helpful. They guide teachers in lesson planning and help students understand concepts better." – Implementation Partner citing Teachers' experience

However, time constraints remain a recurring challenge for teachers, as they struggle to integrate all activities within the available instructional hours. The partner noted,

"Teachers say the materials are excellent, but completing all the activities within school hours is a challenge. They have limited time and managing different levels in one class makes it difficult." – Implementation Partner citing Teachers' experience

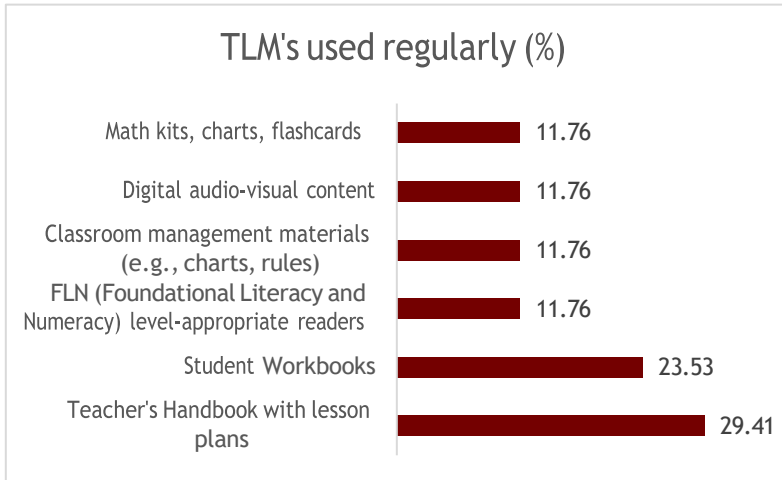


Figure 27: Types of Teaching- Learning Materials (TLM's) used regularly

This highlights the need for additional support in balancing curriculum completion with the integration of interactive learning materials. Among the introduced Teaching Learning Materials (TLMs), Teacher's Handbook with lesson plans was the most widely used, with 29% of teachers regularly incorporating it into their lesson planning. Student workbooks were also commonly utilized, with 24% of teachers reporting regular use. However, despite their adoption in classrooms, parents often struggle to assist their children with these materials at home.

"They will tell us to guide them at home, but we don't always know how to do that. Sometimes, we can only check what they write and whether it is correct or not. We ourselves do not fully understand the workbook activities as these are different from their regular textbooks. So, helping them at home becomes a bit difficult for us." – Parent

"The workbooks provided by the project are good and engaging, but parents often face challenges in guiding their children at home because these workbooks differ significantly from the traditional textbooks, they're familiar with. Parents are not always equipped to independently coach children using these resources." – Implementation Partner

Other instructional resources, including FLN (Foundational Literacy and Numeracy) level-appropriate readers, classroom management materials, digital audio-visual content and math kits were used by 12% of teachers, indicating a limited but still notable adoption. These findings suggest that while some resources, such as the Teacher's Handbook and Student Workbooks, have been widely integrated into teaching, others may require further support or training to encourage more consistent use among educators.

The Teacher's Handbook emerged as a key resource for lesson preparation, with 80% of teachers using it for every lesson, highlighting its importance in guiding instruction. The remaining 20% of teachers used the handbook frequently (for more than half of their lessons), demonstrating a strong but slightly less consistent reliance on this resource. This trend suggests that while the handbook has been widely adopted, ongoing efforts to enhance its usability and relevance could further increase its integration into daily lesson planning.

The use of digital learning resources prior to the project was limited, with most teachers (80%) reporting that they used technology in their classrooms either on a monthly basis or less. Only 20% of teachers incorporated digital tools on a weekly basis, suggesting a lack of structured integration of digital content into teaching practices. Following project engagement, technology adoption increased significantly. All teachers (n=5), now reported using digital learning resources weekly, marking a complete shift toward technology-enhanced instruction. This transformation underscores the project's effectiveness in fostering digital engagement, equipping teachers with the necessary tools and training to integrate Smart TVs, mobile applications and digital content into their lessons.

The introduction of Smart TVs, LED TVs and tablets has led to varying levels of technological integration in teaching. 20% of teachers reported using these digital tools daily across multiple lessons, demonstrating strong adoption of technology-enhanced instruction. A larger group, 40% of teachers, utilized these resources several times a week, while another 40% incorporated them once a week, suggesting a moderate but consistent level of digital engagement. These variations in frequency indicate that while many teachers are actively incorporating technology into their teaching, some may still require additional training and support to fully integrate digital tools into lesson planning and delivery.

"Teachers have started using the QR codes in the books to show digital content in class. It helps them explain concepts better and students enjoy seeing the videos." – Implementation Partner

"My child comes home and talks about the videos they watched in class. They say the teacher scans something from the book and a lesson comes on the screen." - Parent

Infrastructure Upgrades

Improved school infrastructure has been closely linked to better student engagement and academic outcomes. The **National Achievement Survey 2017** by NCERT observed, "a positive correlation was between schools having adequate infrastructure such as electricity, usable toilets, library facilities and well-maintained classrooms and higher average performance in language and mathematics. These findings suggest that improving basic facilities can contribute to better learning outcomes among students."

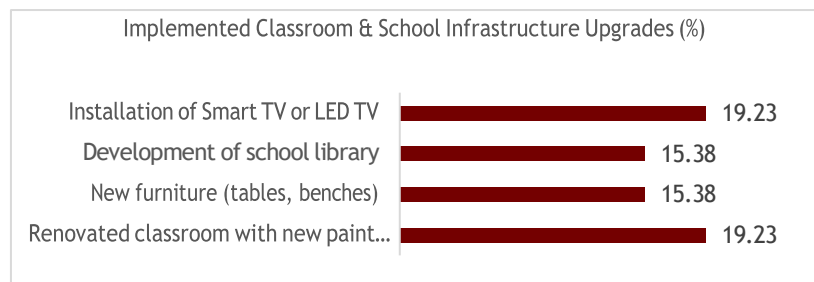


Figure 28: Classroom & School infrastructural upgrades

The Sandbox Model Schools project introduced multiple infrastructure enhancements, significantly improving the teaching and learning environment. Among the teachers surveyed, 19% reported classroom renovations, including new paint and decorations, contributing to a more visually stimulating and structured learning space. A similar

proportion, 19%, observed the installation of Smart TVs or LED TVs, marking a shift towards digital learning integration. Additionally, 15% of teachers reported the introduction of new furniture, including tables and benches, improving student seating arrangements and classroom organization. Another 15% observed the development of a school library, which provided greater access to reading materials, fostering literacy engagement. These findings indicate that while infrastructure upgrades were implemented at varying scales, their impact on classroom environment and teaching practices was widely acknowledged by teachers.

Usage of the Ennum Ezhuthum Mobile Application

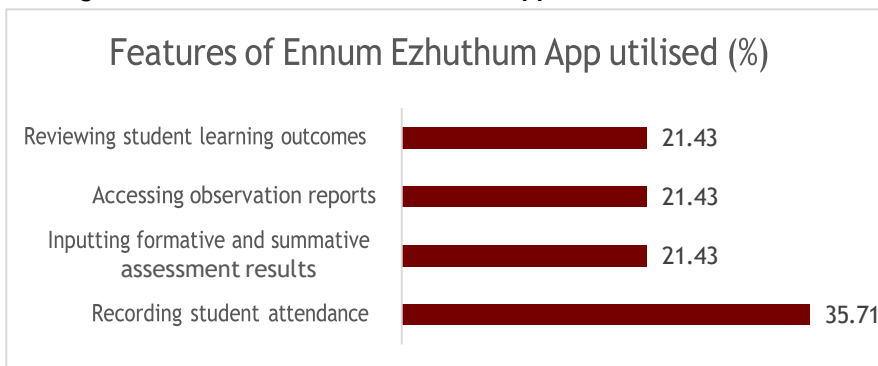


Figure 2S: Features used of the Ennum Ezhuthum App

All teachers reported using the Ennum Ezhuthum mobile application regularly for project tracking and classroom observations. The app serves as a crucial tool for monitoring student progress and maintaining classroom records. Among its various features, recording student attendance was the most widely utilized, with 36% of teachers regularly

using this function. Other features, including inputting formative and summative assessment results, accessing observation reports and reviewing student learning outcomes, were each used by 21% of teachers, indicating that the app is being utilized for multiple aspects of student evaluation and progress tracking.

When rating the ease of use of the mobile application, responses were evenly distributed. 20% of teachers found it very easy to use, while an equal proportion rated it as easy, neutral, difficult and very difficult to use, suggesting that while some teachers find the app user-friendly, others face challenges in navigating its features effectively. This variation highlights the need for additional training or interface improvements to enhance usability while this might need a separate study to enhance user acceptance and usage

Activity-Based and Group-Based Learning Approaches

Before the project's introduction, group-based and activity-based learning methods were infrequently used. Most teachers (80%) incorporated these methods in less than 30% of their lessons, reinforcing a predominantly traditional instructional approach. Within this, 40% of teachers used such interactive strategies in only 10-25% of their lessons, while another 40% implemented them in 26-30% of their teaching. A smaller subset (20%) had already been using these approaches in more than 50% of their lessons, indicating prior exposure to student-centered learning. After the implementation of Sandbox strategies, a clear shift toward interactive and participatory teaching became evident. Most teachers (60%) reported using group-based or activity-based learning methods in 26-30% of their lessons, an increase from pre-project levels. Additionally, 40% of teachers had expanded their usage to more than 50% of their lessons, indicating a movement toward more student-engaged instructional techniques. This shift suggests a broader acceptance of hands-on, experiential learning approaches, aligning with the project's goal of strengthening foundational literacy and numeracy through interactive teaching.

Parental and Community Engagement in Basic literacy and numeracy

Parental engagement through Parent-Teacher Meetings (PTMs) has been fairly structured across schools, with 60% of teachers reporting that their schools conducted 3–5 meetings in the past academic year. A smaller proportion (20%) indicated either 1–2 meetings or more than five, suggesting variations in the level of parental involvement, with some schools maintaining moderate engagement while others had either minimal or extensive interactions.

Beyond PTMs, FLN Vizhas, interactive learning carnivals designed to involve parents and the community, have played a crucial role in strengthening engagement. All teachers confirmed that these events were conducted at their schools, with 80% rating them as extremely effective and the remaining 20% considering them very effective. These findings highlight the impact of FLN Vizhas in fostering community participation, making basic literacy and numeracy more engaging and helping parents recognize their role in supporting student progress.

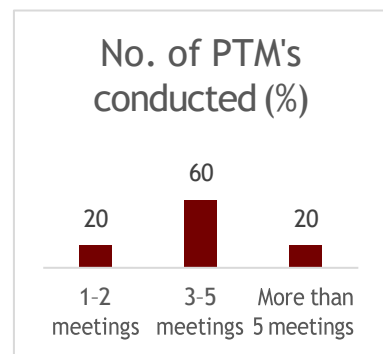


Figure 30: Number of Parent Teacher Meetings (PTM) conducted

4.4.2.3. Impact

Impact on Student Attendance

Teachers also reported an increase in student attendance, reflecting the positive influence of infrastructure upgrades on school participation. The majority (80%) of teachers observed a more than 20% rise in attendance, suggesting that improved facilities and a more engaging classroom environment encouraged students to attend school more regularly. A smaller proportion, 20% of teachers, noted a 10–20% increase in attendance, indicating moderate improvements.

Qualitative data provides strong evidence that upgraded classroom infrastructure, notably LED TVs and digital content, significantly enhances the learning experience by making it more interactive, enjoyable and engaging. Stakeholders, including SMC members, headmasters, parents and implementation partners, report increased student happiness, participation and learning progress tied to these improvements. Additionally, absenteeism has decreased, with headmasters noting fewer absences due to engaging methods and parents and partners observing heightened student enthusiasm and attendance rates of 80-90%. These findings demonstrate that targeted infrastructure enhancements improve educational quality and attendance by creating a dynamic learning environment.

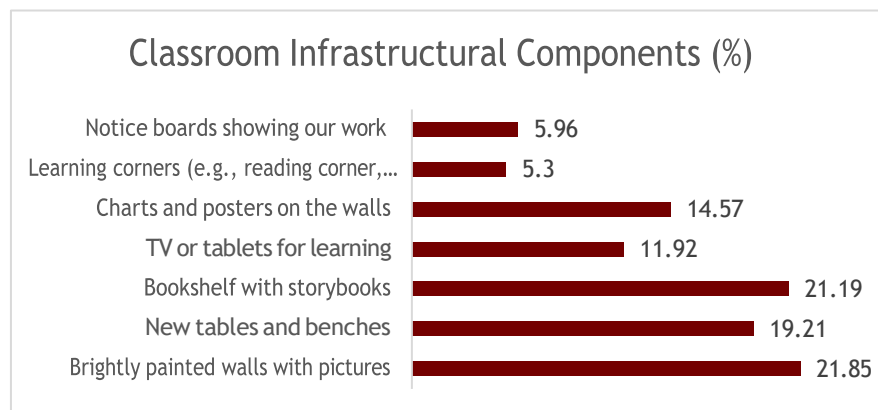


Figure 31: Classroom components post infrastructural upgrade

Classroom Infrastructure and Resource

Students' acknowledgement of the presence of various classroom features varied, with 21.85% noted brightly painted walls with pictures, while 21.19% reported having a bookshelf with storybooks. 19.21% had new tables and benches, reflecting improvements in basic classroom infrastructure. 14.57% mentioned charts and posters on the walls and

11.92% had TV or tablets for learning, highlighting some digital integration. Learning corners such as reading and math spaces were reported by 5.3%, while 5.96% observed notice boards displaying students' work, suggesting some classrooms incorporated elements of interactive learning displays. When asked about their favorite elements, 38.89% of students appreciated the colorful walls and pictures, while 36.11% preferred books and storybooks, indicating a strong preference for visual and reading materials. 16.67% found learning materials like charts most engaging, while a smaller percentage, 5.56%, enjoyed the TV or tablets.

Following these infrastructure improvements, all teachers reported a significant increase in student engagement, demonstrating that enhancements in the physical learning environment played a crucial role in motivating students and increasing classroom participation. The combination of better classroom aesthetics, improved seating arrangements and digital learning tools created an environment where students were more attentive, interactive and actively engaged in lessons.

In terms of teaching effectiveness, 80% of teachers noted a significant improvement in the ease of lesson delivery, attributing this to better classroom organization, access to structured learning materials and the availability of digital instructional tools. However, 20% of teachers reported no change in lesson delivery, suggesting that while infrastructure upgrades create an enabling environment, their direct impact on teaching may vary based on individual instructional styles and familiarity with new resources.

Use of Library Spaces

All students expressed a positive sentiment towards their classroom, describing it as fun and comfortable, which indicates a welcoming and engaging learning environment. Usage of the reading corner or library space varied, with 38.89% of students utilizing it twice a week, followed by 36.11% using it once a week. A smaller percentage, 11.11%, reported never using it, while 8.33% used it thrice a week and 5.56% used it five times a week, showing variation in accessibility and frequency of engagement. Teachers, librarians and headmasters played an active role in motivating students to use the library, with 83.33% stating they were encouraged often. 13.89% mentioned they were occasionally reminded, while 2.78% reported that they had never been encouraged to use the reading space, suggesting room for greater reinforcement.

Most students, 69.44%, stated they could access the reading corner independently, while 27.78% required help from their teacher or librarian. A very small percentage, 2.78%, reported that they rarely used the reading space, pointing to a need for strategies that encourage more active engagement among all students.

Vocabulary development also varied, with 44.45% of students learning between 3 to 5 new words per week and 27.78% picking up 1 to 2 words in the same period. A smaller percentage (11.12%) reported learning 6 to 10 words weekly, while 11.11% acquired between 12 to 15 new words. Only 5.56% of students reported learning between 20 to 25 new words weekly, suggesting that a minority experience a rapid vocabulary expansion. The variation in word acquisition highlights the differing levels of exposure and engagement with reading materials, emphasizing the need for interventions that enhance vocabulary-building opportunities for all students.

Learning Materials

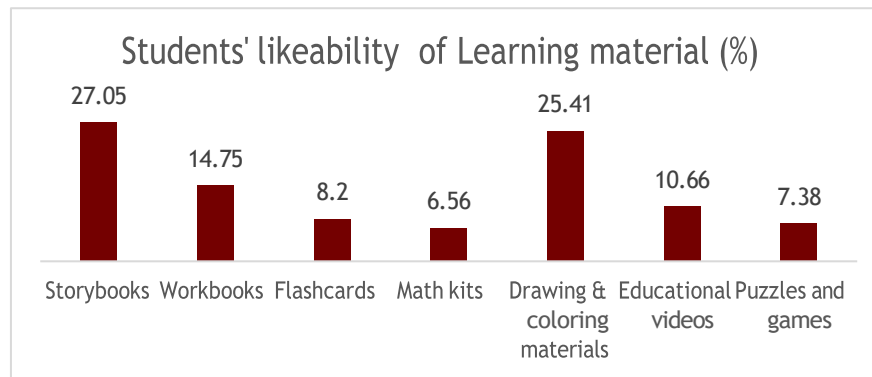


Figure 32: Popularity of Teaching Learning Material (TLM) amongst students

All students reported having their own textbooks in class. However, 66.67% had their own workbooks, while 5.56% shared workbooks with classmates. Notably, 27.78% did not have workbooks, indicating gaps in access to learning materials that could affect individual engagement with structured learning activities.

Majority of the students (61.11%) used their learning

materials every day, reinforcing the integration of structured resources into daily instruction. 16.67% used them a few times a week, while 11.11% used them only once a week. A small proportion, 2.78%, reported rarely using these materials and 8.33% stated they never used them, suggesting that while most students benefit from these resources, some may not have consistent engagement.

Among different types of learning materials, 27.05% of students favored storybooks, followed by drawing and coloring materials, which were preferred by 25.41%. 14.75% liked workbooks, while 10.66% enjoyed educational videos on the TV or tablet, reflecting some interest in digital learning. Other materials such as flashcards (8.2%), puzzles and games (7.38%) and math kits (6.56%) had lower but still notable engagement, indicating diverse learning preferences among students.

The impact of TLMs on lesson planning varied among teachers. 40% of teachers reported that these resources greatly enhanced their ability to plan, indicating that the structured materials provided effective guidance for lesson delivery. Another 20% of teachers noted that the TLMs had somewhat improved their lesson planning, reflecting a moderate but beneficial influence. However, 40% of teachers reported no noticeable change, suggesting that while some educators found the materials useful, others may still rely on their existing methods or require additional training to maximize the potential of these resources.

Usage of TV and Tablets for Learning

A vast majority of students (92%) expressed that they enjoy learning with the TV or tablet, while only 8% found it moderately enjoyable. This suggests a strong preference for interactive and visual learning methods.

The frequency of TV or tablet usage for learning in class varied among students. 25% of students use them at least once a week, with 13.89% using them daily and 19.44% engaging with them a few times a week. However, a significant proportion, 30.56%, reported never using a tablet or TV for learning, while 11.11% used them rarely. This indicates that while many students have integrated technology into their learning routines, some still lack access or engagement.

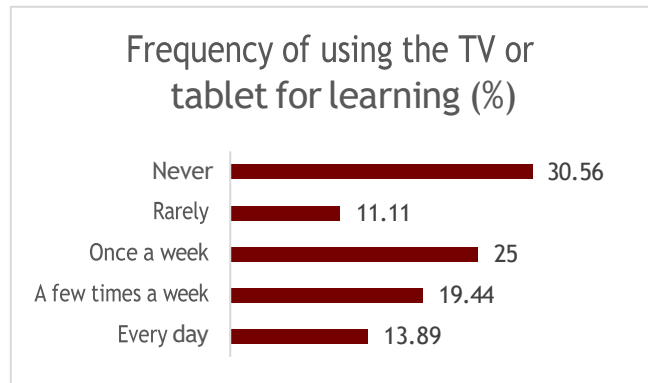


Figure 33: Television/ Tablet usage among students

When it came to learning how to use a tablet, 47.5% of students reported that their teachers helped them, while 35% received assistance from parents at home. A smaller proportion, 10%, relied on siblings for guidance. Notably, 7.5% of students reported that they do not use a tablet,

indicating limited engagement with digital learning resources.

Among the various activities on TVs and tablets, 34.92% of students reported watching educational videos, which, as suggested by implementation partners, enhances engagement and encourages active participation in discussions. Similarly, 30.16% of students played learning games, aligning with the observation that interactive activities help sustain student interest and provide opportunities for all children to engage in classroom learning.

Additionally, 33.33% of students engaged in story-listening activities, which, according to teachers, have been effectively facilitated through digital platforms, allowing students to independently comprehend and respond to stories. However, only 1.59% of students used these devices for interactive exercises, indicating a lower level of engagement in this format. As noted by educators, hands-on activities in workbooks remain a preferred method for reinforcing learning, suggesting the need for better integration of interactive digital tasks to complement existing teaching practices.

Prior to the intervention, the frequency of TV or tablet usage for learning varied among students. The majority (52%) used it once a week, while 24% engaged with it two to three times per week. A smaller proportion, 16%, used it four to five times per week, whereas 8% of students reported they were not using it at all for learning. After the project, there was a shift in usage patterns. While 44% of students continued using the TV or tablet once a week, 24% reported using it two to three times per week. Additionally, 16% of students increased their engagement with digital resources to five to seven times per week post-intervention, as parents report children enjoying school and showing improved test scores, reflecting a frequent, technology-supported routine spurred by the project's enhancements. Conversely, 16% still did not use these resources at all, with an SMC member noting the absence of smart classrooms and a headmaster highlighting observations of teacher reluctance to adopt new tools and logistical challenges like time constraints and high student ratios, underscoring persistent barriers to access despite the intervention's efforts.

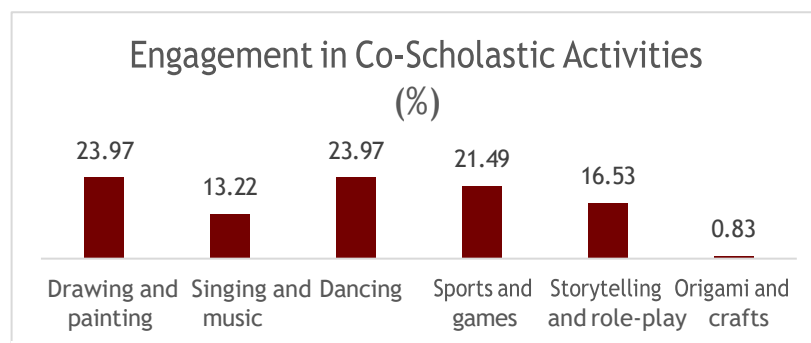


Figure 34: Types of co-scholastic activities

Participation in Co-scholastic Activities

Students engaged in a variety of school activities, with 23.97% each participating in drawing and painting as well as dancing, as parents noted children's enthusiasm for dance lessons played on TVs, reflecting creative engagement.

Meanwhile, 21.49% participated in sports and games, supported by an SMC member's suggestion to emphasize extracurriculars like martial arts, indicating interest in physical activities. Storytelling and role-play captivated 16.53%, aligning with an implementation partner's observation of students' excitement for new activities like rhymes and stories, suggesting narrative-based engagement. Singing and music were enjoyed by 13.22%, while origami and crafts saw minimal participation at 0.83%, possibly due to logistical constraints like time shortages highlighted by stakeholders.

The highest proportion of students (38.89%) participated once a week, followed by 33.33% engaging 2–3 times a week, indicating regular involvement for most. (as shown in fig. 13). Most students (43.59%) received guidance from teachers for extracurricular activities, underscoring educators' active role in facilitating these engagements. Qualitative insights reveal that teachers frequently encouraged student participation, enhancing their confidence and enjoyment. Parental involvement was notable, with 28.21% of students receiving support from parents, although qualitative data indicates variability in parental capacity to assist effectively at home due to unfamiliarity with certain materials or methods. A smaller group relied on support from peers (12.82%) or the headmaster (10.26%), further highlighting a supportive and collaborative learning environment. Only 5.13% of students reported handling these activities without explicit guidance, potentially indicating gaps in structured support. Nevertheless, an overwhelming majority of students (94.44%) expressed substantial enjoyment, reflecting overall positive experiences and affirming the effectiveness of collective efforts in promoting extracurricular participation.

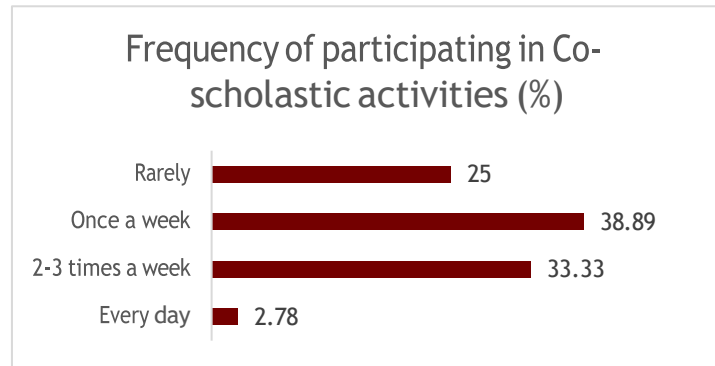


Figure 35: Participation in co-scholastic activities

Participation in School Events

Before the project, participation of the students in school events was relatively limited. A significant portion (33.33%) participated in only one event per year, while 30.56% attended two events. Engagement in three to four events was observed among only 13.89% of students, whereas 5.56% took part in five events annually. A much smaller percentage of 2.78% each participated in six to eight events per year and an equally small share (2.78%) reported participating in twelve or more events. Notably, 2.78% of students did not participate in any school events at all.

Following the project's implementation, participation in school events saw a significant increase, with **83.33%** of students reporting greater involvement, while 16.67% stated that their participation remained unchanged. Participation in school events has increased, with 53.33% of students now attending one event per year. A smaller but notable group, 16.67%, participates in two events annually. Engagement in three to four events per year accounts for 13.34% of students, while 10% are involved in six to eight events. A smaller proportion, 6.66%, participated in ten or more events, indicating a growing trend of higher involvement among some students. Based on qualitative insights derived from FGD with parents, the increased student participation in school events indicates a positive transformation in students' attitudes towards school and learning. Parents recognized these events as opportunities for children to build confidence, showcase their learning and engage actively in school life.

FLN Vizhas

"Children are becoming more interested because they participate in these school programs. They are eager to show what they've learned, and they love being appreciated." - Parent

"These activities motivate our children a lot. They feel happy attending school, especially when there is some event or activity. My child is always excited about participating." - Parent

The majority of students (**91.67%**) reported participating in FLN Vizhas (learning carnivals) or special school events, while a small portion (8.33%) did not take part. Among those who participated, 42.25% performed in a play or role-play, while 36.62% engaged in games and activities. A smaller number showcased their work to parents and others (9.86%), helped decorate the school (8.45%), or watched performances (2.82%). In terms of enjoyment, 90.91% of students expressed that they enjoyed participating in these events very much, while 9.09% found them to be just okay. This indicates that most students had a positive experience during these school events.

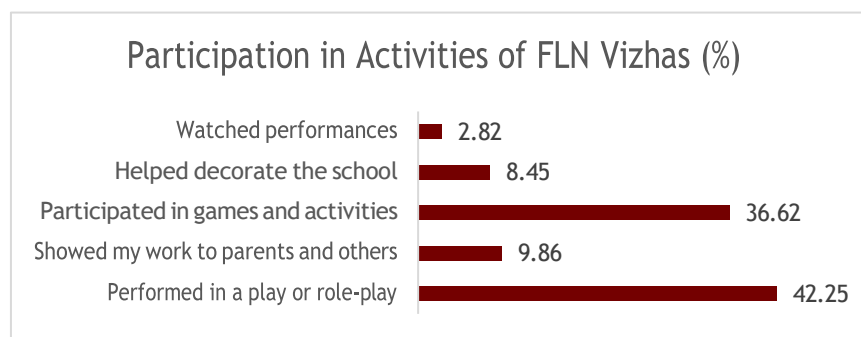


Figure 3c: Types of activities students engaged in at FLN Vizhas

Majority of the students, 42.42%, reported attending only one FLN Vizha or special event in a year. A smaller group, 15.15%, participated in two to three events annually, while 24.24% attended four to five events. Participation in six to ten events was observed among 12.12% of students, indicating a moderate level of engagement. Only 6.06% of students attended more than

ten events in a year, reflecting a small but highly engaged group. Parental involvement in these events was notably high, with 96.97% of students reporting that their parents attended at least one event. Only 3.03% of students stated that their parents did not attend any events. This suggests strong parental engagement in school activities, which could contribute positively to students' learning experiences.

Classroom engagement and support

A large proportion of students (88.89%) reported that they always understand what their teacher teaches, while 11.11% stated that they understand only sometimes. Similarly, when asked about their comfort level in asking questions, 80.56% felt comfortable always, whereas 19.44% said they were sometimes comfortable seeking clarifications.

Teachers were recognized for their support, with 83.33% of students affirming that their teacher always helps them when they find something difficult. However, 16.67% of students noted that their teacher only sometimes helps. Classroom rules and routines also played a role in student learning, as 91.67% of students reported having effective classroom structures that support their learning. A smaller percentage (5.56%) acknowledged the presence of routines but found them less helpful, while 2.78% stated that their classroom had no special rules.

The frequency of teacher feedback on classwork or homework, before the project intervention varied. 30.56% of students received feedback once a week, while 30.56% had their work reviewed 2–3 times per week. A notable 33.33% received feedback 4–5 times per week, while 5.56% had their work checked more than five times per week. Teacher feedback on student classwork varied across different frequencies. 55.56% of students received feedback once or twice a week, while 16.67% received feedback three to four times a week. More frequent feedback, occurring five or more times a week, was reported by 25% of students. However, 2.78% of students were unsure about how often they received feedback. When asked whether the frequency of teacher feedback had changed, 86.11% of students observed an increase, while

13.89% stated that it had remained the same. This suggests a notable improvement in teacher engagement and feedback mechanisms after the project's implementation.

Regular testing and quizzes appear to be a consistent feature in classrooms, with 72.22% of students reporting that they often have assessments, while 22.22% experience them sometimes. A small fraction (2.78%) stated that quizzes and tests are rare or never conducted.

Understanding test performance is an integral part of learning and 77.14% of students noted that their teacher always explains their test results. However, 20% reported that their teacher only sometimes discusses results with them, while 2.86% mentioned that their teacher does not explain results clearly.

Student Progress in Literacy and Numeracy

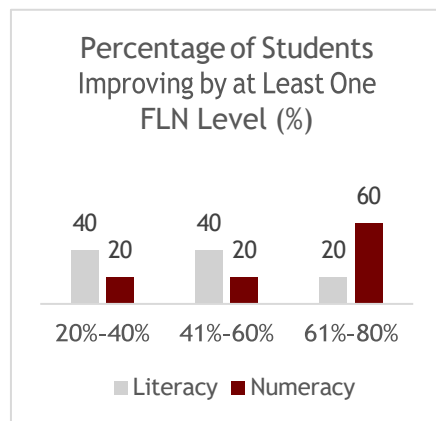


Figure 37: Improvement in FLN levels

Teachers' assessments indicate that student improvement in Foundational Literacy and Numeracy (FLN) has been varied since the project's inception. In literacy, 40% of teachers reported that between 20–40% of students improved by at least one FLN level, while another 40% observed improvements in the 41–60% range. A smaller proportion, 20%, noted higher gains, with 61–80% of their students showing progress. The trend in numeracy displayed a slight shift, with 60% of teachers stating that 61–80% of their students improved. In contrast, 20% of teachers reported improvements in the 20–40% and 41–60% ranges respectively. These figures suggest that numeracy interventions may have been more effective than literacy interventions, highlighting the need for further emphasis on reading-focused strategies to achieve similar progress.

This progress of the students was mapped using regular administration level-based assessments, with 60% of teachers conducting them weekly, ensuring continuous student performance monitoring. However, 40% of teachers reported a monthly assessment frequency, which, while still structured, may indicate varying levels of adherence to assessment schedules across classrooms.

The use of mobile applications for monitoring and improving student learning outcomes yielded mixed results. While 40% of teachers reported no significant impact, suggesting the app did not meaningfully alter their teaching or tracking processes, 20% noted moderate improvements, indicating some benefits but inconsistent effectiveness. Conversely, 20% of teachers felt moderately hindered and another 20% found the application significantly obstructed their ability to monitor student learning, pointing to usability concerns or limitations in the app's functionality. These insights highlight the need for enhancements in digital tools to better support teachers in tracking and improving student outcomes.

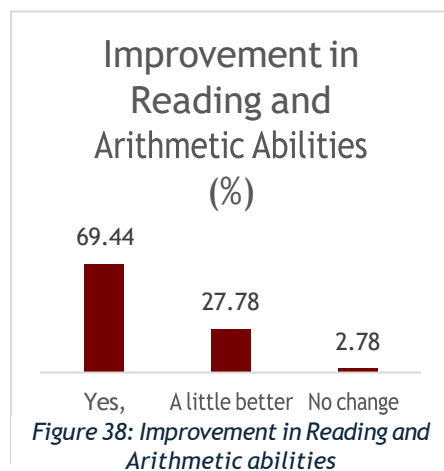


Figure 38: Improvement in Reading and Arithmetic abilities

A strong majority (77.78%) of students believed they have improved significantly in reading and math, while 22.22% observed some improvement. Similarly, when asked whether they could now read storybooks more easily or solve math problems more quickly, 69.44% responded "yes, definitely" and 27.78% stated they were doing "a little better", while 2.78% saw no change.

In the last test or quiz, student performance varied across different score ranges. Out of 10, a small percentage (5.88%) of students (n=34) answered 4 or fewer questions correctly. Around 20.59% of students scored between 5 and 6 correct answers, indicating a moderate level of understanding. The largest group, 29.41%, answered exactly 7 questions correctly, demonstrating strong performance. Notably, 44.12% of students scored between 8 and 10 correct answers, reflecting a high level of achievement in the

quiz. These insights indicate that while most students feel they are improving, continued reinforcement through assessments and teacher feedback can further enhance learning outcomes.

Parental Engagement with Schoolwork

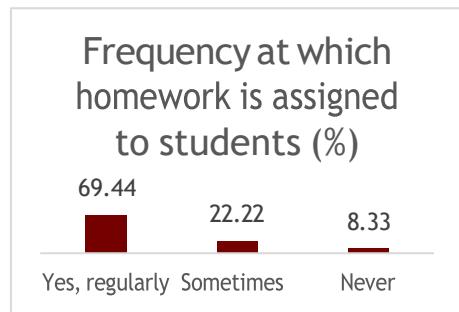


Figure 35: Frequency of homework assignment to students

Students' involvement in completing homework or school activities at home varied. A majority, 69.44%, regularly had homework or activities to complete (as shown in fig. 39). When it came to using workbooks or activities provided by the school at home, 63.89% of students reported using them often, while 33.33% used them sometimes and 2.78% never used them.

Assistance with schoolwork at home showed a mixed pattern. 52.78% of students received help every day, while 25% were helped sometimes and 2.78% rarely received help. However, 19.44% of students reported that they did not receive any help with their

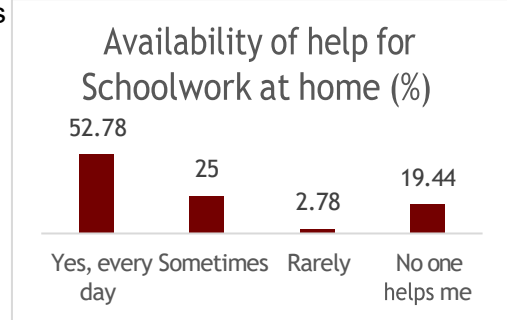


Figure 40: Availability of help for schoolwork at home

schoolwork. Parents' involvement in discussing their child's learning was also noted, with 55.56% of students saying their parents asked about school every day, while 36.11% reported that their parents asked sometimes. However, 2.78% of students said their parents rarely asked about school and 5.56% stated that their parents never inquired about their schoolwork.

4.4.2.4. Sustainability

The project team's support in addressing challenges received positive feedback, with 60% of teachers rating it as excellent. Another 20% found the support good, while the remaining 20% considered it adequate. This indicates that while most teachers felt well-supported, some may require more targeted interventions to overcome difficulties effectively. Some of the key factors which may help ensure sustainability of the project intervention and activities are described in the section below.

Multigrade Teaching Methodologies

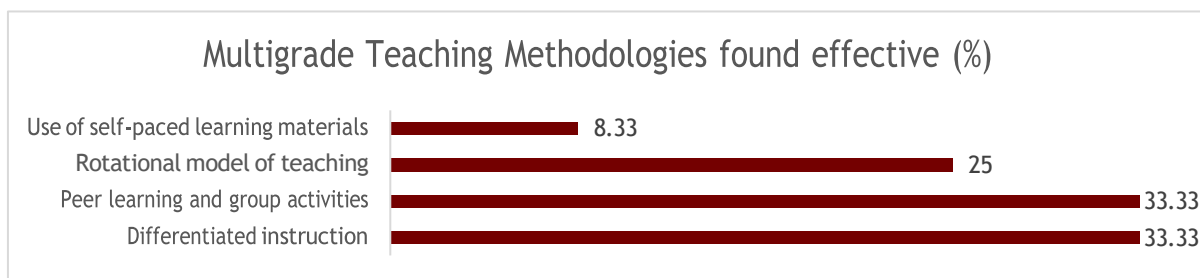


Figure 41: Multigrade Teaching Methodologies

Among the teaching methodologies introduced through the project, differentiated instruction and peer learning and group activities emerged as the most favored, each being identified as effective by 33.3% of teachers. Teaching methodologies such as differentiated instruction, peer learning and group activities have proven effective in ensuring continuous student progress. The implementation partners noted that group activities help children learn faster because they interact and discuss among themselves, reinforcing each other's learning and highlighting the importance of collaborative strategies. Interviews conducted with school

administrators emphasized the significance of structured peer learning sessions. They observed that students learn better when grouped according to their learning abilities, as this allows for targeted teaching and continuous progress monitoring.

Additionally, they identified ongoing teacher support as essential, noting that regular training sessions ensure teachers consistently apply new methods effectively in class, reinforcing the project's approach to sustained teacher development. Collectively, these strategies help maintain and extend the progress achieved through the project's methodologies. The rotational model of teaching was considered beneficial by 25%, while self-paced learning materials were least utilized, with only 8.3% of teachers finding them useful. These responses indicate a preference for interactive and structured methodologies over independent learning approaches.

"We divide students based on their learning levels. Stronger students help those who find it difficult and this has increased participation and understanding among students." – School Management Administration

Post-training confidence levels were notably high, with **80%** of teachers feeling extremely confident in applying multigrade teaching strategies in their classrooms. The remaining 20% felt very confident, demonstrating that the training effectively equipped teachers with the necessary skills and methodologies to manage multigrade settings effectively.

Parental Support for Home Learning

Parental involvement in home-based learning, as observed via the use of Home Learning Kits, varied significantly among families. While 40% of teachers reported that fewer than 20% of parents actively supported their children's learning at home—indicating challenges in maintaining engagement outside the classroom—another 40% noted moderate participation, with 61–80% of parents involved. The remaining 20% reported that 20–40% of parents played an active role. These insights highlight the need for additional efforts to strengthen and sustain parental engagement, ensuring that learning continues effectively beyond the school environment.

To enhance parental support at home, initiatives such as interactive parent workshops, simplified learning materials with clear instructions and regular communication between teachers and parents can be implemented. Providing parents with practical strategies to integrate learning into daily activities, such as storytelling, games and discussions, can make education more accessible and engaging. Additionally, leveraging technology through mobile-based reminders, instructional videos, or virtual support groups can help parents stay involved and reinforce learning in a structured yet flexible manner. Creating a culture of shared responsibility between schools and families will be key to improving home-based learning outcomes.

Perceived Changes in School and Learning

Most students (86.11%) reported attending school daily, with only a small fraction attending irregularly. Nearly all students (97.22%) expressed a strong liking for school, highlighting a positive learning environment. Friendships (24.59%), teachers (21.31%) and games or activities (18.85%) were the most appreciated aspects of school life. Additionally, students enjoyed learning new things (15.57%) and reading books (11.48%), while a smaller percentage found digital tools (4.1%) and school events (4.1%) engaging. Since the project's implementation, students have observed various improvements, with the introduction of new teaching methods (36.92%) being most noticeable, possibly due to teachers adopting differentiated instruction and interactive learning strategies. Additionally, 26.15% appreciated better classroom conditions, reflecting investments in physical infrastructure such as vibrant classroom painting and the introduction of

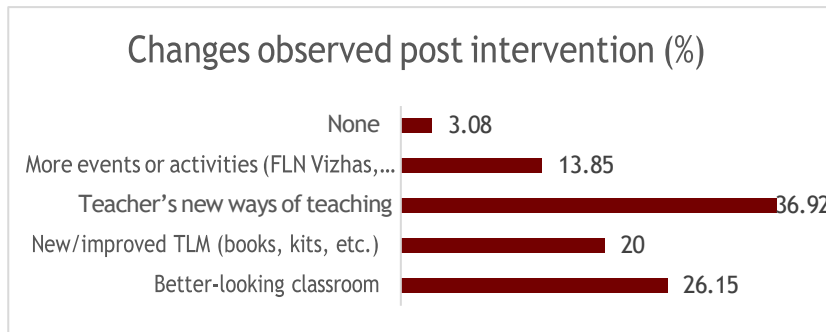


Figure 42: Post intervention changes

Teacher Meetings (PTMs), indicating stronger parental and community involvement that motivates children to attend school more consistently and engage in their education. However, 3.08% of students reported no discernible changes, suggesting possible inconsistencies in teacher training or barriers such as limited parental support at home. By regularly maintaining these improvements in infrastructure, continuing teacher development and fostering active family engagement, schools can sustain higher attendance rates and promote better learning outcomes for all students.

digital tools. Enhanced Teaching and Learning Materials (TLMs) were acknowledged by 20% of students, emphasizing their increased availability and systematic use, for example, through workbooks and QR-coded resources, which can spark greater student interest and encourage regular attendance. Additionally, 13.85% of students noted a rise in school events, including FLN Vizhas and Parent-

4.4.3. Success Stories and Best Practices

Sandbox – Strengthening Basic literacy and numeracy through innovation

Introduction

The Madhi Foundation's Sandbox project has emerged as a pivotal initiative aimed at strengthening Foundational Literacy and Numeracy (FLN) by refining the implementation of the Ennum Ezhuthum (EE) program. By leveraging Sandbox Schools as high-touch incubation hubs, the project has provided a controlled environment to test, adapt and optimize pedagogical and administrative strategies. These model schools serve as testing grounds for innovative solutions that can be scaled to under-resourced government schools across Tamil Nadu, ensuring that systemic design flaws in FLN interventions are effectively addressed.

Enhancing Teaching and Learning

Recognizing key challenges in basic literacy and numeracy —such as inconsistent teaching practices and administrative bottlenecks—Madhi adopted a data-driven and diagnostic approach. Classroom observations across Sandbox Schools revealed disparities in implementation, with some teachers effectively using level-based grouping while others struggled with structural constraints. To address this, Madhi tailored targeted interventions, using insights from teacher training quizzes that showed an average score of 60%, signaling the need for additional support. By refining instructional approaches and offering ongoing reinforcement, the foundation ensured that teachers were better equipped to meet diverse student needs, improving overall classroom efficacy.

Empowering Local Leadership for Sustainability

A significant factor in the Sandbox project's success was the empowerment of local school leadership to drive continuous improvement. The information shared by Madhi, one of the notable examples was a headmistress who introduced monthly student assessments to track progress and realign instructional groupings, demonstrating how localized innovations, when supported within a structured framework, can lead to lasting impact. With plans to extend this model to Grades 4 and 5, the project has laid a strong foundation for broader systemic change. By combining teacher support, data-driven refinements and grassroots leadership, Madhi has transformed Sandbox Schools into replicable models of excellence, demonstrating how targeted interventions can drive sustainable improvements in basic literacy and numeracy outcomes.

4.4.4. Challenges

Teachers highlighted several key challenges in effectively implementing the project's components. The most prominent issue was the integration of digital tools, particularly mobile applications, cited by 40% of respondents. Usability concerns, complexities in data entry and additional time required for navigating apps created difficulties, underscoring the need for more intuitive technology and focused training. Time constraints

further compounded these issues, with 30% of teachers struggling to balance daily teaching responsibilities with regular attendance at training sessions. Limited access to Teaching and Learning Materials (TLMs), inconsistent parental engagement and difficulties in managing multigrade classrooms were also reported, each affecting around 10% of teachers. While structured resources were found to be useful, some teachers noted that parental unfamiliarity with workbooks, distinct from conventional textbooks, hindered effective home support, requiring increased orientation and communication efforts with families.

Challenges extended into instructional delivery, particularly in multigrade classrooms. While most teachers successfully employed differentiated instruction and peer learning strategies promoted by the project, around 20% reported occasional or frequent struggles in maintaining student engagement and managing diverse skill levels simultaneously. Some teachers adapted by implementing flexible grouping and tailored lesson plans, while others expressed the need for ongoing mentoring, refresher training and additional classroom support to reinforce their teaching strategies.

From the student perspective, 63.16% reported minimal academic difficulties, reflecting generally positive learning outcomes. However, challenges persist, with 15.79% of students struggling with digital devices, highlighting a gap in technology readiness among learners. Overcrowded classrooms were also cited as barriers to effective learning by another 15.79%, affecting individual attention and engagement. Additionally, 5.26% of students noted insufficient time for lesson practice, indicating that structured reinforcement opportunities at home and in school remain necessary.

Attendance data further revealed areas of concern, with 27.78% of students reporting moderate absenteeism (five to seven days per month), suggesting disruptions in consistent learning. While half of the students reported minimal absenteeism (one to two days per month), only 8.33% achieved perfect attendance, indicating mixed results in school engagement. Addressing these challenges through improved technological support, clearer guidance for parents, reduced class sizes and strategies to improve student attendance would significantly strengthen the project's impact and sustainability.

4.4.5. Recommendations

To enhance the effectiveness of the FLN project, several recommendations emerge from teacher feedback, parental insights and observations on student engagement.

Teachers identified several areas for improvement to make these mobile applications more effective in tracking and improving student learning. The most common recommendations included enhancing the user interface and navigation (29%) and ensuring better alignment with classroom needs and curriculum (29%), suggesting that teachers find the application's design and structure to be areas needing refinement. Additional customizable reports (14%), training on how to use the app effectively (14%) and 14.2% other improvements were also suggested. These findings highlight the need for better integration of digital tools with classroom needs and enhanced teacher support in utilizing these resources effectively.

"Some teachers still struggle with using the app properly. If they receive more training, they will be able to record student progress more accurately."

"Sometimes the app has too many steps to enter information. Teachers feel it takes time away from teaching."

"Some schools have network issues, so teachers can't always update student progress in real-time."

– Implementation Partner

Teachers should receive hands-on training to efficiently navigate the app and track student learning without technical difficulties. Simplifying the data entry process with a more intuitive interface can enhance usability while minimizing disruptions during lessons. Additionally, incorporating an offline feature to record data without an internet connection and sync later would ensure seamless monitoring, even in areas with poor connectivity.

The involvement of students in completing homework or school-related activities at home remains inconsistent, with only 69.44% regularly engaged, while approximately one-third participate occasionally or rarely. Insights from interactions with parents indicate a notable barrier is their limited familiarity and comfort with guiding their children through homework tasks, primarily due to challenges in understanding the structured teaching materials, particularly workbooks, which differ significantly from traditional textbooks. This highlights a critical need for increased parental support and targeted training sessions that focus specifically on familiarizing parents with the instructional materials and teaching methods used in schools. Enhancing parental capacity in these areas would likely improve consistency in student engagement with home-based learning activities, ultimately reinforcing classroom instruction and student outcomes.

FLN Vizhas have proven effective in enhancing parental engagement and student motivation, reflected by high participation rates (91.67%) and strong positive feedback from students (90.91%). Both parents and students shared that participating in these events significantly boosted students' enthusiasm towards learning and school activities. Parents highlighted that these functions increased their awareness of foundational literacy and numeracy (FLN) but expressed uncertainty regarding their ability to support children academically at home.

"We enjoy coming to the school functions, but we don't always know how to help with studies at home. If they show us, we can also try."

"We didn't know how important reading practice was before, but after attending the event, we realized that small efforts at home can make a big difference."

"When we come to the school events, we see how our children learn. It helps us understand what they are studying and how we can help at home." - Parent

Incorporating structured parent-led activities or demonstration sessions within FLN Vizhas could effectively bridge this gap, providing parents with practical skills to reinforce learning at home. Regularly demonstrating simple, actionable strategies during these events can empower parents, enhancing the overall effectiveness and sustainability of FLN interventions.

Teachers suggested three primary areas of support, each recommended by 33.3% of respondents. These included additional training on multigrade teaching techniques, provision of more tailored resources or teaching aids and regular mentorship or classroom support. The need for continuous professional development and customized learning materials underscores the importance of sustained interventions to ensure smooth adaptation to multigrade teaching.

Qualitative data from stakeholder interviews inform targeted recommendations to boost engagement with reading spaces, where 69.44% of students access them independently, 27.78% need teacher or librarian support and 2.78% rarely participate. To address this, schools should enhance facilitation by offering structured guidance sessions to transition assisted users toward independence while sparking interest among rare users through librarian-led activities. Introducing interactive elements like reading challenges or rewards can sustain enthusiasm for independent users and motivate the disengaged, capitalizing on students' excitement for new activities and technology observed across interviews. Engaging parents with workshops or take-home reading kits leverages their willingness to support learning, potentially reducing disengagement as seen with homework improvements. Finally, allocating dedicated time and diverse materials addresses logistical barriers like time shortages and high student ratios, ensuring all students, especially the 2.78% who rarely engage, have equitable access. These strategies harness existing strengths to foster universal participation in reading spaces.

To address these student-identified challenges comprehensively, a multi-pronged approach is necessary. First, for students having trouble with digital devices, dedicated training sessions or simplified, interactive tutorials should be organized, allowing learners to become familiar and comfortable with the technology before regular classroom use. Additionally, establishing peer-support groups can help students collaboratively overcome technological barriers.

To mitigate the issue of overcrowded classrooms affecting 15.79% of students, classroom management strategies such as differentiated instruction and ability-based grouping can be employed, ensuring personalized attention and improved instructional quality. Schools could also consider increasing teacher support through teaching assistants or volunteers, which would help alleviate strain on teachers and enhance individual student support.

Addressing limited time for practice can be achieved by introducing structured practice sessions integrated within school hours and providing simple, clear home-based tasks. Educating parents through FLN Vizhas or targeted workshops on supporting structured homework activities can also ensure regular reinforcement at home, thereby reducing dependency on independent student initiative.

Regarding absenteeism, implementing proactive outreach strategies such as regular parent-teacher communication, motivational incentives for consistent attendance and timely follow-ups on absent students can encourage regular school participation. Additionally, improving school infrastructure and creating a welcoming school environment, as already observed positively by many students, can further incentivize consistent attendance.

The cumulative impact of implementing these recommendations will significantly enhance foundational literacy and numeracy (FLN) outcomes across the state. By refining digital tools, ensuring their seamless integration into classrooms and providing comprehensive teacher training, students will receive more effective and personalized instruction. Strengthening parental engagement through targeted workshops and structured activities within FLN Vizhas will empower families to support learning at home, bridging the gap between school and home-based education. Additionally, improving access to reading spaces, addressing classroom overcrowding and incorporating structured practice sessions will create a more inclusive and engaging learning environment. Addressing barriers to attendance through proactive outreach and infrastructural enhancements will further ensure that students consistently participate in learning. Together, these measures will foster a more robust and sustainable FLN ecosystem, driving long-term improvements in student engagement, learning outcomes and overall educational equity across the students.

3.3.6. Annexures

3.3.6.1. Sample distribution

Table 5: Sample distribution

| Beneficiaries across key tools | Project Ezhuthum | Enum | Sandbox Schools | STEAM Model |
|--|------------------|------|-----------------|-------------|
| Survey | | | | |
| Learning Assessment | 131 | | - | - |
| Semi-structured Interviews | | | | |
| Teachers/Headmaster | 4 | | 5 | - |
| Students | - | | 36 | - |
| In-Depth Interviews | | | | |
| School Management/Administration officials | 2 | | 2 | - |
| Implementing Partner | 1 | | 2 | - |
| FGD | | | | |
| Parents/Mothers | 1 | | 1 | - |

3.3.6.2. Evaluation Matrix

Table 6: Evaluation Matrix

| Ennum Ezhuthum and Sandbox Model Schools | | | | |
|---|--|--|--|--|
| Study Population | Key Area of Enquiry | Tool Type | Planned Analysis | Evaluation Dimension (OECD -DAC) |
| Children enrolled in School (beneficiaries) | <ul style="list-style-type: none"> Frequency of TLM usage by students Impact of TLM on academic performance | <ul style="list-style-type: none"> ASER FLN Assessment | <ul style="list-style-type: none"> Standardized measure for foundational literacy and numeracy. Descriptive Statistics to summarize academic performance. | <ul style="list-style-type: none"> Effectiveness Impact |
| Mothers/ Parents of School going Children | <ul style="list-style-type: none"> Impact on lives of children mainstreamed | <ul style="list-style-type: none"> Focus Group Discussion | <ul style="list-style-type: none"> Thematic Analysis to explore parents' perceptions of educational impact and overall well-being of children. | <ul style="list-style-type: none"> Relevance Sustainability |
| Headmaster/ Teachers | <ul style="list-style-type: none"> Attendance of Children in schools, Impact on lives of children Data on Enrollment rate, dropout rate, out of school Success stories – stories of change Number of teachers trained on blended learning methods Perception of teachers regarding the effectiveness of training | <ul style="list-style-type: none"> Semi-Structured Interview | <ul style="list-style-type: none"> Descriptive Statistics for attendance, enrollment and dropout rates. Thematic Analysis for qualitative insights. Comparative Analysis of training effectiveness. | <ul style="list-style-type: none"> Relevance Effectiveness |
| Implementation partners | <ul style="list-style-type: none"> Details about program implementation and implementation strategies Challenges and barriers support provided to teachers for adapting to blended learning | <ul style="list-style-type: none"> In-depth Interview | <ul style="list-style-type: none"> Thematic Analysis to evaluate implementation processes, challenges and support mechanisms. | <ul style="list-style-type: none"> Efficiency Sustainability |
| Key Stakeholders (School Management) | <ul style="list-style-type: none"> Roles and responsibilities New strategies introduced. Challenges and barriers Success stories – Stories of change | <ul style="list-style-type: none"> In-depth Interview (School Management) | <ul style="list-style-type: none"> Thematic Analysis of stakeholder roles, strategies and success stories. | <ul style="list-style-type: none"> Relevance Effectiveness |

4.4.6. Annexures

4.4.6.1. Sample distribution

Table 7: Sample distribution - Sandbox Schools

| Beneficiaries across key tools | Project Ennum Ezhuthum | Sandbox Schools | STEAM Model |
|--|------------------------|-----------------|-------------|
| Survey | | | |
| Learning Assessment | 131 | - | - |
| Semi-structured Interviews | | | |
| Teachers/Headmaster | 4 | 5 | - |
| Students | - | 36 | - |
| In-Depth Interviews | | | |
| School Management/Administration officials | 2 | 2 | - |
| Implementing Partner | 1 | 2 | - |
| FGD | | | |
| Parents/Mothers | 1 | 1 | - |

4.4.6.2. Evaluation Matrix

Table 8: Evaluation Matrix - Sandbox schools

| Ennum Ezhuthum and Sandbox Model Schools | | | | |
|---|---|---|---|---|
| Study Population | Key Area of Enquiry | Tool Type | Planned Analysis | Evaluation Dimension (OECD -DAC) |
| Children enrolled in School (beneficiaries) | <ul style="list-style-type: none"> Frequency of TLM usage by students Impact of TLM on academic performance | <ul style="list-style-type: none"> ASER FLN Assessment | <ul style="list-style-type: none"> Standardized measure for foundational literacy and numeracy. Descriptive Statistics to summarize academic performance. | <ul style="list-style-type: none"> Effectiveness Impact |

| | | | | |
|---|--|--|--|--|
| Mothers/ Parents of School going Children | <ul style="list-style-type: none"> • Impact on lives of children mainstreamed | <ul style="list-style-type: none"> • Focus Group Discussion | <ul style="list-style-type: none"> • Thematic Analysis to explore parents' perceptions of educational impact and overall well-being of children. | <ul style="list-style-type: none"> • Relevance • Sustainability |
| Headmaster/ Teachers | <ul style="list-style-type: none"> • Attendance of Children in schools, • Impact on lives of children • Data on Enrollment rate, dropout rate, out of school • Success stories – stories of change • Number of teachers trained on blended learning methods • Perception of teachers regarding the effectiveness of training | <ul style="list-style-type: none"> • Semi-Structured Interview | <ul style="list-style-type: none"> • Descriptive Statistics for attendance, enrollment and dropout rates. • Thematic Analysis for qualitative insights. • Comparative Analysis of training effectiveness. | <ul style="list-style-type: none"> • Relevance • Effectiveness |
| Implementation partners | <ul style="list-style-type: none"> • Details about program implementation and implementation strategies • Challenges and barriers • support provided to teachers for adapting to blended learning | <ul style="list-style-type: none"> • In-depth Interview | <ul style="list-style-type: none"> • Thematic Analysis to evaluate implementation processes, challenges and support mechanisms. | <ul style="list-style-type: none"> • Efficiency • Sustainability |
| Key Stakeholders (School Management) | <ul style="list-style-type: none"> • Roles and responsibilities • New strategies introduced. • Challenges and barriers • Success stories – Stories of change | <ul style="list-style-type: none"> • In-depth Interview (School Management) | <ul style="list-style-type: none"> • Thematic Analysis of stakeholder roles, strategies and success stories. | <ul style="list-style-type: none"> • Relevance • Effectiveness |