HDFC FDP Impact Assessment- Zero Investment Innovations for Education Initiative (ZIIEI)

Impact Assessment Report

Submitted To

HDFC Bank CSR

Submitted By

Sambodhi Research and Communications

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1. Executive Summary

Education plays a pivotal role in the socioeconomic transformation of a country and is a cornerstone of nation-building. HDFC Bank's CSR initiative, Parivartan, has implemented a diverse range of projects, including those focused on education, to empower communities. The Focused Development Program (FDP), a core component of Parivartan, collaborates with implementing partners to address specific needs within rural and urban areas. One such initiative is the **Zero Investment Innovations for Education Initiatives (ZIIEI).**

The study followed mixed method approach having both the qualitative and quantitative component. The study covered 10 states covering 130 schools, covering approximately 840 student survey and 130 teachers. On the qualitative side, 184 key informant interviews were conducted to gain a deeper understanding of the study. Stakeholders were categorized into three groups: i) project partners, ii) administration and implementation staff at the block or district level, and iii) HDFC officials at the central level. The coverage of various stakeholders under qualitative survey allowed for the capture of information that might have been overlooked during the quantitative sampling process.

The **Zero Investment Innovations for Education Initiatives (ZIIEI)** program has aimed to contribute to provide quality education, personality development and skilling in India by introducing innovative teaching methods such as arts, sports, storytelling, and project-based learning. This approach has fostered creativity, critical thinking, collaboration, and student engagement, leading to substantial improvements in teaching practices and student outcomes. By emphasizing holistic development, the program has enhanced both academic performance and key life skills, creating a more dynamic, student-centered classroom environment.

The integration of **arts** into the ZIIEI program has played a key role in enhancing student creativity and communication skills. Teachers widely incorporated dance, music, theatre, and visual arts into their lessons, with **99%** of teachers using at least one form of art. These creative methods have not only boosted critical thinking but also helped students develop confidence and imagination. The arts have become an essential part of fostering an engaging and expressive learning environment.

Sports have also been an integral part of the ZIIEI program, contributing to the development of important life skills such as **teamwork**, **leadership**, and **discipline**. About **85%** students agree that the inclusion of physical activities has helped develop self-motivation, time management, and collaboration—skills that are critical for academic and personal success. Additionally, sports have raised awareness about health and well-being, promoting a holistic approach to student growth.

About 88% teachers have adopted Storytelling techniques, such as dramatization, role play, and the use of flashcards in classrooms to improve students' communication, empathy, and memory retention. These interactive methods have made lessons more engaging and relatable, leading to higher levels of student participation. Teachers reported that these storytelling techniques enhanced students' ability to connect with the material, thereby improving overall learning outcomes.

The program's emphasis on **project-based** and **experiential learning** has further revolutionized classroom instruction. Teachers increasingly used real-world projects like nature walks, creative writing, and problem-solving activities to promote collaboration and critical thinking. These methods allowed students to apply theoretical knowledge to practical situations, leading to deeper engagement and understanding. This hands-on approach also fostered a sense of responsibility and independence among students as they took ownership of their learning.

Teacher professional development has been another cornerstone of the ZIIEI program. About **93% of teachers** participated in regular training sessions focused on language, numeracy, and the integration of arts and sports. Teachers overwhelmingly rated the training as effective, with 84% considering it

excellent. This professional growth, coupled with the use of the **Innovative Pathshaala** model, has empowered teachers to adopt more interactive, student-centered teaching methods. As a result, teachers have observed a notable increase in student engagement, with **74%** of teachers reporting high interest from students in the lessons.

The program has impacted **student engagement and academic performance**. Teachers noted increased student participation in group activities and public speaking, with 100% of students in Grades 4 and 5 excited to attend school. Moreover, **About four fifth of teachers** reported improvements in student attendance, which they attributed to the engaging and interactive teaching methods employed in the classroom. These methods not only made learning enjoyable but also encouraged regular school attendance and active participation in lessons.

In terms of learning outcomes, the ZIIEI program has contributed to substantial improvements in both foundational literacy and numeracy skills. Teachers observed notable progress in these areas, with many students showing an ability to connect classroom learning to real-world applications. Activities like poems, sports, and arts-based projects have been particularly effective in reinforcing learning, benefiting a substantial portion of students. Additionally, **93%** of students reported understanding the concepts taught, and **69%** were able to connect what they learned to real-world scenarios, reflecting increased engagement and critical thinking.

Despite the program's success, there are some challenges that need to be addressed. Limited infrastructure, insufficient ICT training, and time constraints have been barriers to fully adopting inquiry-based learning in all classrooms. Additionally, access to resources like the Innovative Pathshaala Booklets has been inconsistent, which has impacted the program's effectiveness in certain areas. However, these challenges do not detract from the overall positive impact of the program.

The ZIIEI program has made notable progress in transforming education by integrating arts, sports, storytelling, and project-based learning into teaching practices. These innovative methods have enhanced student engagement, academic outcomes, and skill development while fostering emotional intelligence and life skills. Although challenges related to infrastructure and resource access remain, the success of the program demonstrates the potential of low-cost, creative approaches to education. ZIIEI provides a strong foundation for future educational reforms, ensuring that both teachers and students are better equipped to thrive in a dynamic and interactive learning environment.

2. Background

Education plays a pivotal role in the socioeconomic transformation of a country and is a cornerstone of nation-building. Beyond its societal and personal benefits, education also carries economic value. Higher levels of education lead to improved earning profiles, which, in turn, drive productivity and economic growth. At the elementary level, strong educational foundations are essential, as they directly impact higher education outcomes and contribute to greater overall productivity.

It is widely accepted that high-quality teaching reduces the occurrence of low student performance. Teachers directly shape students' social behaviors, cognitive skills, and intellectual development, especially at the primary school level. Therefore, it is vital to focus on enhancing the capabilities of teachers, as they have the most substantial impact on student outcomes.

The complex interplay of these factors necessitates a comprehensive approach. In response, HDFC Bank's CSR initiative, Parivartan, has implemented a diverse range of projects, including those focused on education, to empower communities. The Focused Development Program (FDP), a core component of Parivartan, collaborates with implementing partners to address specific needs within rural areas.

The program encompasses a wide range of initiatives, with a particular focus on addressing the challenges faced by rural communities.

Launched in 2015, **Zero Investment Innovations for Education Initiative (ZIIEI)** has had a impact. It has reached over 25 lakh teachers across India and positively affected the learning experiences of more than 3,00,000 students. The initiative is aligned with the National Education Policy (NEP) 2020, which emphasizes the need for creative and student-centered teaching methods. ZIIEI has provided various resources, such as the Innovations Handbook (Navachar Pustika) and the Innovative Pathshaala, to equip teachers with modern pedagogical tools.

The initiative focuses on creating joyful and engaging learning environments, upskilling teachers, fostering school excellence, and improving student outcomes. Its main objective is to foster an innovative mindset among teachers, enabling them to enhance their pedagogical techniques without the need for additional monetary investment. ZIIEI aims to nurture teachers, support their growth, and encourage the adoption of modern teaching methodologies that can improve the quality of education in India.

Initially, ZIIEI worked through on-ground activities like training sessions, exhibitions, and recognition events, where teachers actively participated. However, with the onset of the COVID-19 pandemic in 2020, ZIIEI adapted to the changing circumstances by transitioning to online platforms. This allowed the program to continue its mission of supporting teachers through virtual training sessions and e-exhibitions, reaching a broader audience across India.

In its second phase, ZIIEI has intensified its focus on improving teacher effectiveness and student engagement. The program has adopted experiential and project-based teaching methods, promoting 21st-century skills among students. It seeks to motivate students, foster meaningful learning experiences, and encourage their active participation in the classroom. By focusing on developing teachers' skills, providing them with ready-to-use teaching methods, and offering networking opportunities, ZIIEI continues to build a strong, innovative education ecosystem across the country.

Through these efforts, ZIIEI is making substantial strides toward enhancing the quality of education in India by supporting teachers in their professional development and transforming classrooms into dynamic, student-centered learning environments.

2.1 Objectives of Impact Assessment & Scope of Work

The overarching objective of the assignment is to conduct a systematic impact assessment of the project and to evaluate the efficacy, effectiveness of the project interventions, and sustainability of the project's outcomes.

The primary objectives of this impact study are:

1. To assess the effectiveness of the content creation and deployment of Competency-Based Learning (CBL) pathway among students
2. To evaluate the impact of teacher training on resource creation and delivery
3. To identify the best practices and improvement areas for scaling up the project

2.2 Approach and Methodology

2.2.1 Research Design

Design & Approach:

The present impact assessment employed a **retrospective pre-post design**[9] for capturing the perceived changes resulting from HDFC's interventions. This approach, while subject to recall bias, provides valuable insights into the perceived impact of the intervention by leveraging participant's memories of their pre-intervention conditions. Wherever possible the existing baseline and midline figures would be utilized to gauge the impact of the program and in case of absence of such figures, the concerned values would be computed using secondary sources and available program documents.

To enhance the reliability and depth of this design, a **mixed-methods approach**[10] will be utilized. This convergent methodology will combine **quantitative** and **qualitative** data collection to provide a comprehensive understanding of the project. Quantitative data will measure the extent of changes in key outcomes, while qualitative insights will delve into the reasons and mechanisms behind these changes, offering a richer understanding of the intervention's impact. Primary data will be collected through surveys, interviews, focus group discussions and classroom observations, while secondary data will be reviewed to contextualize findings and support the analysis.

Evaluation Framework:

Figure 1: OECD DAC Framework

Considering the objectives of the project and in synergy with the research design stated above, this assessment will be based on the **OECD-DAC framework.**[8] The components of the proposed evaluation framework will be a guiding beacon in our conceptualization of areas of enquiry and key indicators, against which the impact of the project can be assessed.

The components of the proposed evaluation framework are –

1. **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.

2. **Coherence –** The extent to which activities can converge with other programs/projects running the geography/sector. As per the RfP, the element of *convergence* stated in the assessment framework aligns closely with the coherence component of OECD DAC framework, ensuring continuity of the project's interventions owing to support from the wider ecosystem.

3. **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). As per the RfP, the element of *replicability* stated in the assessment framework supplements the effectiveness of the program by highlighting the fidelity of activities undertaken as also indicating the probable execution & extension of project across newer geographies (outside of target areas).

4. **Efficiency –** A measure of how economically resources/inputs are converted into results, with reference to project benchmarks (include project delays, overruns; technical issues)
5. **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.
6. **Impact –** The changes that have occurred or are expected to occur in the lives of the target beneficiaries (direct and indirect). Within the component of Impact, Sambodhi will also study the aspect of *Equity* to discern the extent to which the benefits of the project were equally distributed among the members, especially from the marginalized communities.

Methodology:

As stated before, a convergent methodological approach will combine **quantitative** and **qualitative** data collection to provide a comprehensive understanding of the project.

In quantitative analysis, to measure the students' educational attainment in the primary classes, particularly grades 4th & 5th, emphasis will be given to established **assessment tools used in baseline.** To gain a granular understanding of the impact of the program, **a short survey** will also be administered. Furthermore, to substantiate our findings, secondary documents such as school report cards will be analyzed to provide a comprehensive estimation of students' abilities.

In the case of teachers, a **self-reported assessment tool** would be administered to gauge the effectiveness of their pedagogy. Emphasis would be laid upon motivation in education settings, ability to put trainings to practice, incorporation of innovative mechanisms in imparting lessons and execution of Competency-based Learning framework in classrooms. Moreover, classroom observations will also be undertaken to holistically capture teaching outcomes.

In the aforementioned exercises, Sambodhi will attempt to ensure a balanced gender ratio in student and teacher coverage.

For the qualitative analysis, **Semi-Structured Interviews, Key informant Interviews** (KIIs) and **Focus Group Discussions** (FGDs) will be conducted with various stakeholders to understand the various aspects of project activities both targeted and achieved, and the challenges/obstacles faced during the process of implementation. These would include, teachers who have undergone training, school leadership (Headmasters/Principals), education officers & government stakeholders, parents as well as program implementation & management partners.

2.2.2 Study Tools and Sampling Strategy

Quantitative Sample

In line with the study's objectives and the project's expected outcomes, the following method is adopted to estimate the sample size for the evaluation.

Using the one sample proportion formula, we find that a sample of 768 students is statistically significant at the program level with an error margin at 5%. We propose to include approximately 10% extra sample to account for potential loss of sample due to non-responsiveness and other probable reasons like dropouts, migration, refusal among others.

Given this, a sample of 840 is sufficient to provide estimates at the project level.

Considering the vast extent of the intervention, we have adopted a **multi-stage cluster sampling** approach. As outlined in the Annexure, the project's geography encompasses 5 geographical regions of India: North, South, Central, East, and North-East. For each region, a median figure of the number of project schools present within it is computed; calculated from the total schools across the states constituting that region. Thereafter, from each region, we selected 2 states using a stratified random sampling methodology. The states are stratified based on their respective number of project schools. Thus, each region consists of 2 groups of states: those with project schools greater-than-median value and those with project schools lesser-than-median value.

From each group, we selected 1 state randomly, ensuring that only states with unique education centric characteristics and demographic profiles are chosen to maintain diversity and representation in the sample. The factors differentiating states within a region have been detailed in Annexure.

From each such state, we will select 2 districts randomly. In each district, 2 blocks will be covered and within each block 3 Primary schools will be selected using a simple random sampling method. Thus, we will cover a total of 12 schools per state, amounting to 120 schools at the project level. In every school, on average, 7 students will be surveyed giving us a representative sample size of 840 after accounting for 10% non-response rate. The representative sample of 840 students will be assessed on ASER's FLN tool and a short survey to measure the skills acquired and determine the effectiveness in program implementation.

The proposed sample has been further detailed out in the in the table below:

Project 1: Zero Investment Innovations for Education Initiative (ZIIEI) (P0064)							
Region	**State**	**Districts**	**Block**	**Schools Within Each Block (Primary only)**	**Total Schools**	**Students from Primary Schools (Grade 4 & Grade 5)**	**Total Students**
5	10	20	40	3	120	7	840
Note: • Each state, within a region, will reflect unique education centric characteristics. The method of arriving at the differentiation has been detailed out in Annexure-1 of this document. • Sambodhi will attempt to ensure that a balanced gender ratio is maintained in student coverage.							

Table 1: Quantitative Sampling Frame

Qualitative Sample

For the qualitative analysis, Semi-Structured Interviews and Key informant Interviews (KIIs) will be conducted with multiple stakeholders to understand the various aspects of project activities both targeted and achieved, and the challenges/obstacles faced during the process of implementation.

An indicative list of stakeholder categories to be covered during primary research is provided in the table below:

Project 1: Zero Investment Innovations for Education Initiative (ZIIEI) (P0064)		
Stakeholder	**Size**	**Method**
Teachers (1 teacher per school)	130	Semi-Structured Interviews

Headmasters (1randomly selected school in every sample of 3 schools)	40	KIIs
Education Officers (1 in every state)	10	KIIs
Implementing Partners	3	KIIs
Senior Management HDFC CSR	1	KIIs
Total	**184**	

Note:

- In addition to the 120 schools to be covered across 10 states as mentioned in the previous section, 2 Union Territories of Andaman & Nicobar and Lakshadweep will be selected only for the Teachers' assessment.
- In the Union Territories of Andaman & Nicobar and Lakshadweep, 10 telephonic interviews will be conducted with the teachers. For the remaining states, 120 teachers will be surveyed through in-person interactions, at the site of intervention (schools).
- HDFC CSR Team is expected to provide a list of teachers along with the contact information.

Table 2: Qualitative Sampling Frame

3. Limitations

The evaluation has the following limitations:

- The interviews scheduled for Lakshadweep could not be conducted due to the lack of cell phone connectivity.
- Some of sample schools had to be replaced as the teachers were unavailable for the interviews.

4. Demographic Profile of Respondents

4.1 Demographic Profile of Teachers

The demographic profile of teachers surveyed under the **ZIIEI (Zero Investment Innovations for Education Initiatives)** project provides a clear and concise understanding of the primary beneficiaries.

In terms of **gender, 56%** of the respondents are male, while **44%** are female. This indicates a relatively balanced participation, with male teachers forming a slight majority.

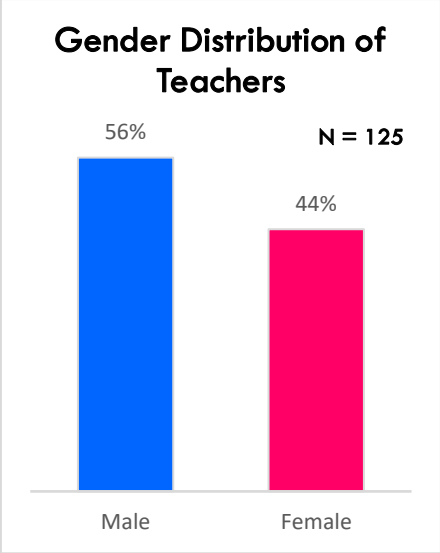

Figure 2: Gender Distribution of Teachers

For **religion, 81%** of the respondents identify as Hindu, reflecting the dominant religious demographic in the regions surveyed. Additionally, **9%** are Christians, **6%** are Muslims, and **3%** belong to the Buddhist/Neo-Buddhist community. A small proportion (**1%**) identifies as belonging to other unspecified religious categories.

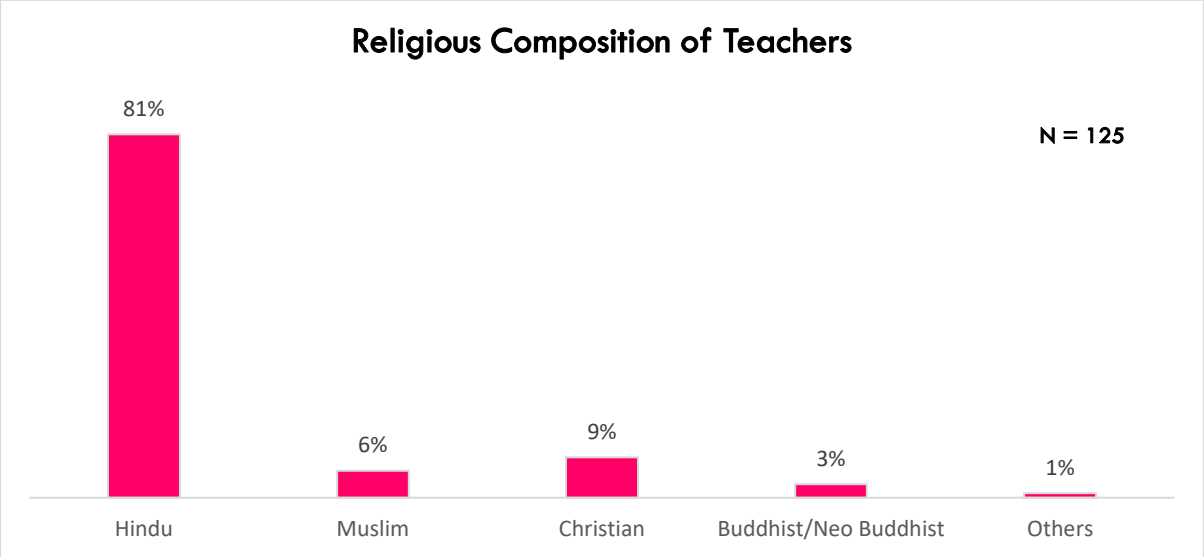

Figure 3: Religious Composition of Teachers

For **educational qualifications**, a substantial portion of teachers are highly educated. **42%** hold postgraduate degrees, while **34%** are graduates. Additionally, **16%** have achieved a PhD or higher degree, indicating advanced academic credentials. A smaller segment, **7%**, have completed education at the Class 10-12 level.

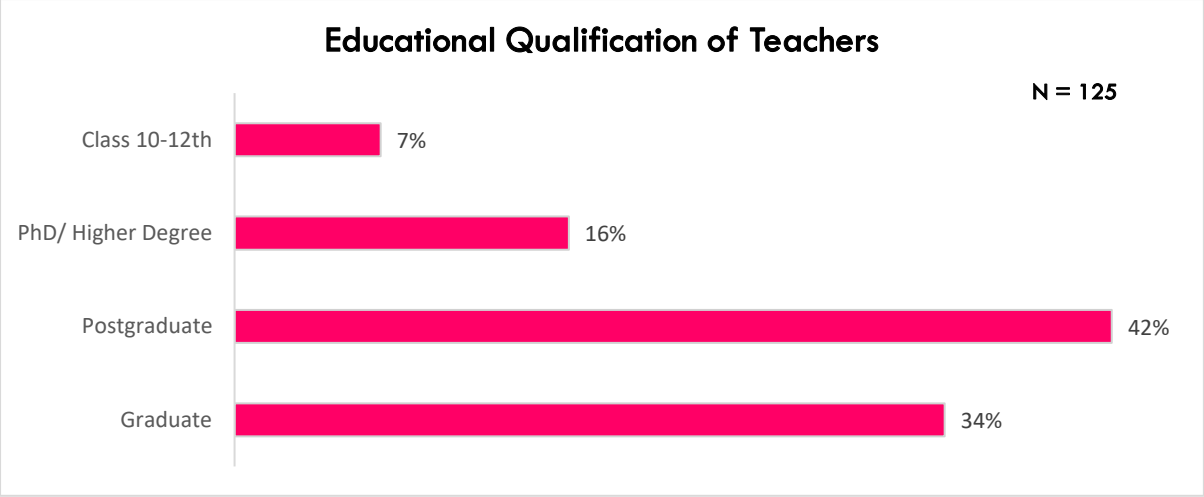

Figure 4: Educational qualification of Teachers

4.2 Demographic Profile of Students

In the case of students, 50% of the beneficiaries surveyed belonged to **Grade 4** and another 50% were part of **Grade 5**. Additionally, 88% of the respondents were in the **age bracket** of 9-11 years which closely aligns with the average age of students in these classes as professed under the NIPUN Bharat program[1] [2] [3].

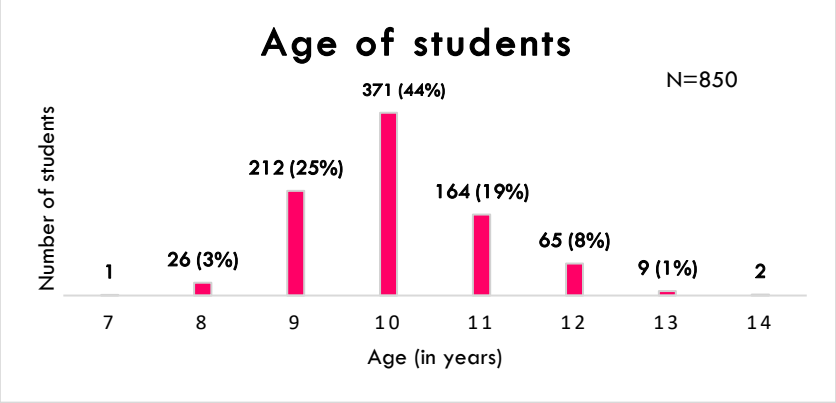

Figure 5: Age Distribution of Students

Furthermore, the students surveyed were approximately equally divided between the two **genders**, with 52% of the respondents being girls and the remaining 48% being boys.

A little over two-thirds of the students' mothers had attained some level of education, as reflected in the data below. Among them, **21%** had attended *Primary School*, while **37%** had studied up to *Class 10*. An additional **8%** had completed their entire *schooling education*, and **3%** were reported to be *graduates*. However, approximately **19%** of the students were unaware of their mothers' educational qualifications, and another **13%** indicated that their mothers had never received any formal schooling.

[1] https://www.india.gov.in/spotlight/nipun-bharat

[2] https://static.pib.gov.in/WriteReadData/specificdocs/documents/2021/jul/doc20217531.pdf

[3] https://dpsdurgapur.com/admissions/age-criteria/

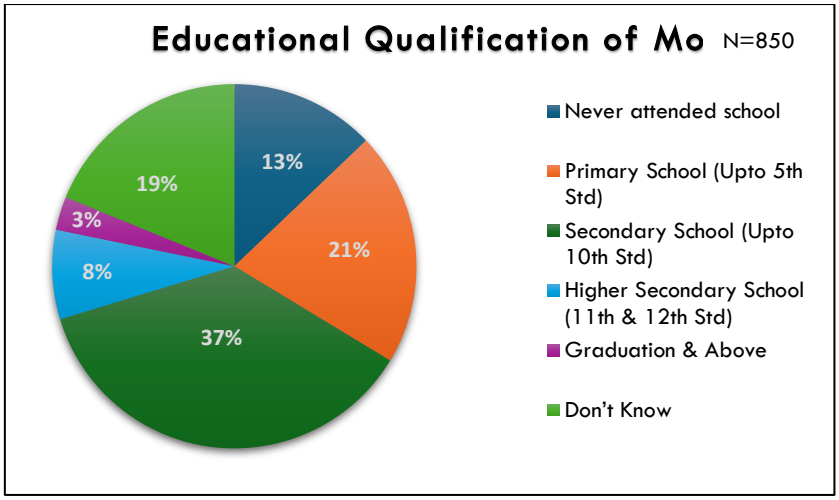

Figure 6: Educational Qualification of Mothers

With respect to the distribution of occupation, the graph below highlights that the majority of mothers are engaged in household work (68%), with fewer involved in wage-based or salaried jobs.

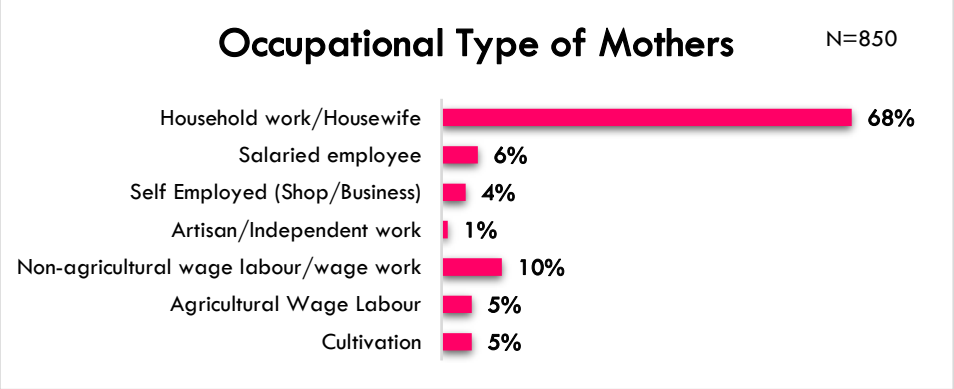

Figure 7: Occupational Distribution of Mothers

The pie chart below illustrates the educational qualifications of fathers as reported by the student beneficiaries. Marginally less than one-third (27%) reported that either their fathers had never attended school or seemed unaware of their educational status. A majority of students (37%) stated that their fathers had completed secondary school (up to 10th standard). Approximately a fifth of the respondents reported their father's obtaining basic education till the primary level (upto 5th standard), while 13% had successfully completed their formal schooling education (11th and 12th standard). Only 4% of fathers possessed degrees signalling graduate or post-graduate status.

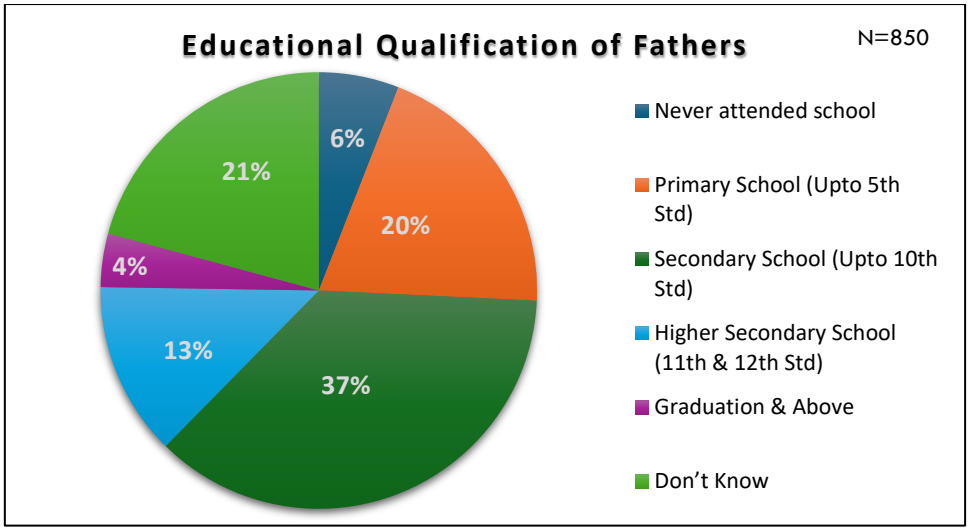

Figure 8: Educational Qualification of Fathers

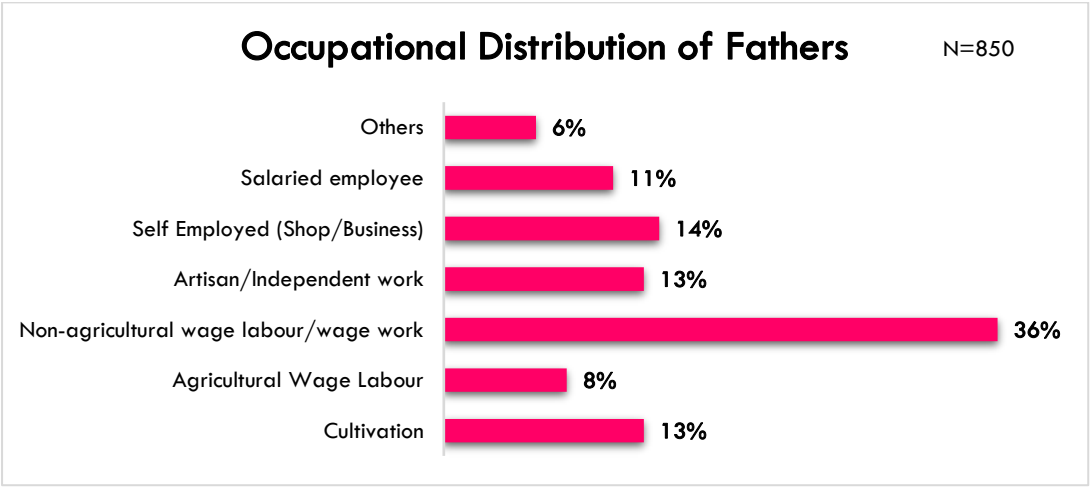

Figure 9: Occupational Distribution of Fathers

Based on the above illustration, non-agricultural wage labor is the most common occupation among fathers, accounting for 36%. This is followed by 14% engaged in self-employment through shops or businesses, reflecting notable entrepreneurial activities. Both artisan/independent work and cultivation account for 13% each. Salaried employment constitutes 11%, representing a smaller share of formal occupations, while 8% rely on agricultural wage labor, showing limited dependence on wage-based agriculture. 6% fall into other occupations not classified under predefined categories.

Thus, the data highlights a strong reliance on non-agricultural wage labor, with smaller yet notable shares of self-employment, artisanal work, and cultivation.

5. Key Findings

5.1 Training Participation and Components

The data on training participation under **Project ZIIEI** highlights strong engagement among the teachers, with **93%** of respondents having attended the sessions. This high participation rate demonstrates the project's success in reaching its primary stakeholders and providing them with valuable capacity-building

opportunities. Only a small fraction of teachers, about **7%**, reported not attending any training sessions, indicating minimal gaps in outreach and program implementation.

In terms of **training frequency**, the responses varied, but a large majority, **40% (N=116)**, attended the sessions on a half-yearly basis. This suggests that periodic, structured training at six-month intervals was the most dominant and practical approach for a large number of teachers. A smaller proportion of respondents, **16%**, reported attending weekly sessions, indicating consistent engagement for a dedicated segment of teachers. Additionally, **15%** attended quarterly, while **9%** participated either monthly or yearly. Interestingly, **12%** of teachers mentioned that they could not recall the frequency of attendance, suggesting a need for improved record-keeping or communication around training schedules. The variety in attendance frequency highlights the flexibility of the program to cater to different teacher availability and schedules while maintaining consistent learning opportunities.

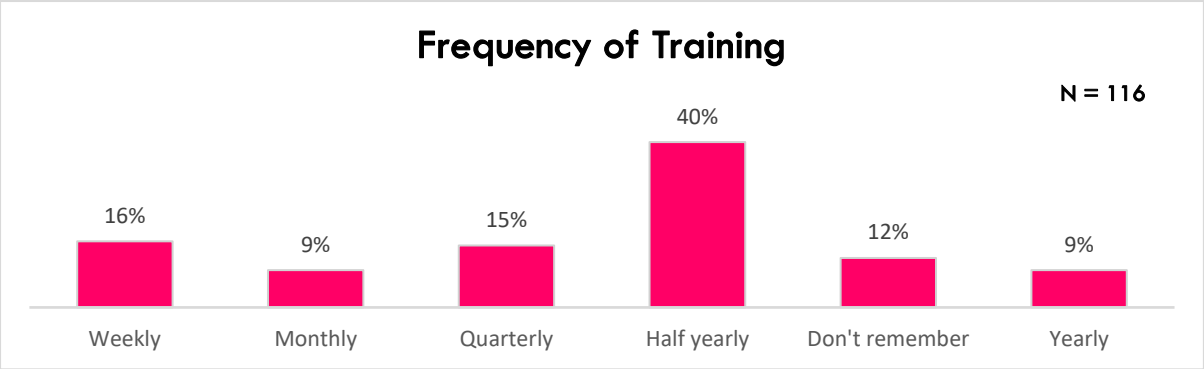

Figure 10: Frequency of Trainings received by teachers

The **components covered in the training** reveal a comprehensive and well-rounded approach to enhancing teaching methodologies. The most prominent component, **Foundational Language and Literacy**, was included in the sessions attended by **91% (N=114)** of teachers. This focus aligns with national priorities to improve foundational skills among students, ensuring stronger learning outcomes at the primary level. Similarly, **Integration of Sports** emerged as another widely covered topic, with **88%** of respondents acknowledging its inclusion. This reflects an emphasis on holistic education, recognizing the role of physical activities in child development.

Foundational Numeracy and Mathematical Skills were also prioritized, with **82%** of teachers mentioning its inclusion. This aligns with efforts to strengthen foundational competencies in mathematics, a critical area for academic growth. Other important topics, such as **Storytelling**, were reported by **80%** of respondents, highlighting its importance as an engaging and effective teaching strategy for young learners. Topics like the **New Education Policy (NEP 2020)** and **Integration of Arts** were covered for **75%** of teachers. This focus ensures that educators are well-informed about recent policy developments and equipped to incorporate creative learning techniques into their classrooms.

However, **Enquiry-Based Learning** and **ICT Learning** were included for comparatively fewer teachers, with **54%** and **47%**, respectively, reporting exposure to these topics. While enquiry-based learning fosters critical thinking and problem-solving skills among students, ICT learning emphasizes technology integration in classrooms. The relatively lower focus on ICT learning suggests room for improvement in equipping teachers with digital tools and technological capabilities, which are increasingly essential for 21st-century education.

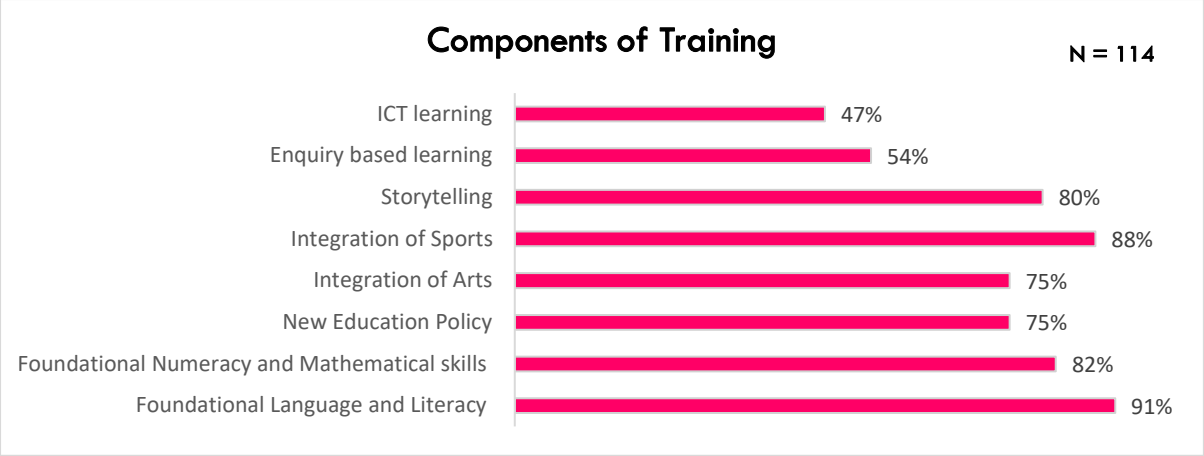

Figure 11: Topics covered during Teachers' Trainings

5.2 Perception of ZIIEI Training Sessions

The teachers' feedback on the quality, usefulness, and effectiveness of ZIIEI training sessions reveals an overwhelmingly positive response, highlighting the program's success in meeting its objectives. A substantial **84% (N=116)** of respondents rated the training sessions as excellent, reflecting a high level of satisfaction with the delivery and content. **This suggests that the program's structured and engaging sessions resonated well with the teachers' expectations.** An additional **16%** found the sessions to be of average quality, indicating that while the majority were impressed, there is still scope for minor refinements to enhance the learning experience. Notably, no respondents rated the quality as below average, which underscores the effectiveness of the program's training model.

In terms of relevance to teaching needs, **74% (N=116)** of teachers found the sessions to be highly relevant, demonstrating the alignment of the program's content with their professional requirements. These results highlight that the ZIIEI program has been thoughtfully designed to address real-world teaching challenges and improve classroom practices. However, **25%** of respondents categorized the sessions as moderately relevant, indicating that a more customized approach or additional focus on specific needs might further enhance the sessions' utility. A negligible **1%** of participants felt that the sessions were not relevant, reflecting the program's broad applicability and effectiveness for nearly all participants.

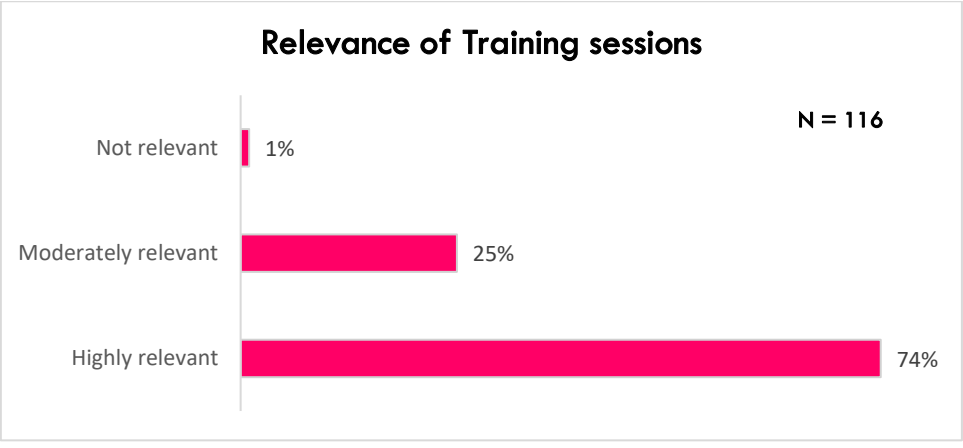

Figure 12: Relevance of trainings to teaching needs

The **effectiveness** of the orientation sessions in equipping teachers with innovative teaching methods was similarly well-received. A majority, **66% (N=116)**, of respondents reported that the sessions were highly effective, offering clear and practical strategies for immediate application in classrooms. This reflects the program's emphasis on actionable teaching tools and its capacity to empower teachers with modern pedagogical techniques. Another **26%** of teachers found the sessions helpful but noted the need for more hands-on examples and follow-up support to strengthen practical implementation. This feedback indicates a valuable opportunity for the program to incorporate more experiential learning elements and ongoing mentorship. A smaller proportion of respondents, **6%**, felt the sessions provided only a basic introduction and lacked sufficient depth, while **2%** rated them as not effective, indicating minor gaps in meeting the expectations of this subset of participants.

5.3 ZIIEI Resource Utilization

The utilization and perception of ZIIEI resources, including the *Innovations Handbook (Navachar Pustika)* and *Innovative Pathshaala Booklets*, reflect their critical role in supporting teachers with innovative teaching strategies. A substantial **86% (N=125)** of teachers reported using the *Innovations Handbook*, demonstrating its widespread adoption and relevance. This high usage highlights its practicality in aiding teachers to implement zero-investment strategies effectively. However, the **14%** of teachers who do not use the handbook suggest that there may be gaps in its distribution, accessibility, or perceived relevance among this subset.

Among those who used the handbook, its integration into teaching practices varied. **31% (N=108)** of teachers reported using it daily, and **49%** referred to it weekly, indicating frequent reliance on the resource for classroom activities and lesson planning. A smaller proportion, **6%**, used it monthly, and **13%** rarely referred to it. This variability suggests that while the handbook is highly valued by many, a subset of teachers may require further encouragement or support to fully integrate it into their practices. Furthermore, **64% (N=108)** of respondents rated the handbook as "very useful," and **36%** found it "moderately useful," underscoring its effectiveness in meeting the professional needs of educators. The absence of negative ratings reflects its overall success as a resource.

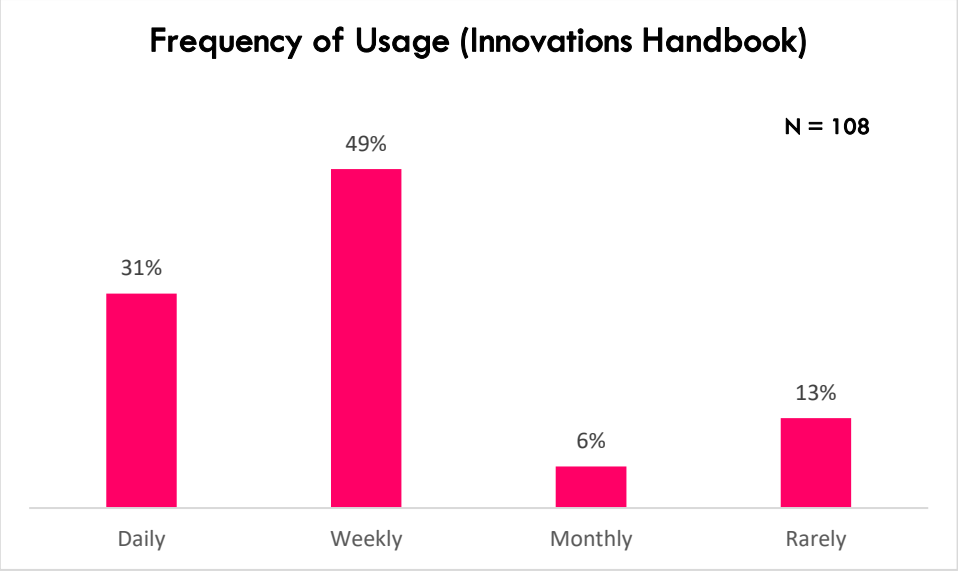

Figure 13: Frequency at which teachers use the Innovations Handbook

The *Innovative Pathshaala Booklets* have also been a valuable tool, with **37% (N=108)** of teachers reporting that they "always" use the booklets for lesson planning and **63%** using them "sometimes." While this demonstrates substantial engagement, it suggests that the booklets are not as consistently integrated as the handbook. This difference indicates an opportunity to deepen teachers' familiarity and comfort with using these materials in their classrooms.

Accessibility of ZIIEI resources, including the handbooks and booklets, was rated positively by most respondents. **44% (N=108)** of teachers considered the resources to be "accessible," while **54%** found them "moderately accessible." Only **2%** of respondents reported that the resources were "not accessible," indicating that the majority of teachers could obtain and use them without substantial difficulty. However, the high proportion of "moderately accessible" responses points to logistical or infrastructural challenges that may hinder optimal distribution. Addressing these challenges could ensure more equitable access across regions.

Teachers provided valuable feedback on the *Innovations Handbook (Navachar Pustika)* and *Innovative Pathshaala Booklets*, highlighting their role in transforming classroom teaching practices. **The materials were praised for their practicality, enabling teachers to implement experiential and activity-based methods such as storytelling, group projects, math games, and nature walks.** These approaches effectively enhanced student engagement and helped improve foundational skills in literacy, numeracy, and environmental awareness.

While the materials were helpful, they were not universally effective. Several teachers noted that the content, particularly in worksheets and booklets, was sometimes misaligned with students' understanding levels or class-specific needs. The resources were seen as more suitable for lower-grade students or certain subjects, but they required modifications or additional support to cater to higher-grade learners effectively. This limitation highlighted the need for more tailored and differentiated content to ensure relevance across various grade levels and subjects.

Accessibility was another recurring concern. Teachers pointed out that the print size in the booklets was too small, making it difficult for students, especially those with weaker reading skills, to engage effectively with the content. Larger fonts, more visual aids, and simplified content would make the materials more user-friendly and accessible to all learners, improving their effectiveness in diverse classroom settings.

Despite these challenges, t**eachers demonstrated remarkable resourcefulness by supplementing the materials with self-made teaching-learning aids (TLMs) crafted from locally available or zero-cost materials.** This creativity allowed them to overcome resource constraints and ensure interactive and engaging learning experiences for their students.

In response to these challenges, teachers recommended timely and consistent distribution of materials, along with the inclusion of region-specific and culturally relevant content. Additionally, integrating digital resources to complement printed booklets would make the materials more versatile and suitable for modern teaching needs. Regular updates, larger print sizes, and incorporating teacher feedback into future editions would further enhance the practicality and effectiveness of these resources.

5.4 Teaching Methods Introduced in ZIIEI Training

The ZIIEI training sessions introduced teachers to a diverse range of teaching methods and areas of education, focusing on modern, engaging, and practical approaches to improve classroom learning. These methods highlight the program's emphasis on holistic education, addressing foundational skills, innovative pedagogical strategies, and real-life applications.

Among the teaching methods, **Foundational Language and Literacy** and **Integration of Sports** were the most widely adopted, with **84% and 88% (N=119)** of teachers respectively, implementing these

techniques. This widespread inclusion reflects the program's alignment with foundational education goals, emphasizing the importance of literacy as a cornerstone for academic success and sports for holistic student development.

Storytelling & Talk and Learn also featured prominently, with **77%** of teachers adopting this method. Its engaging nature aligns well with young learners, fostering creativity and critical thinking. Similarly, **Foundational Numeracy and Mathematical Skills** was adopted by **74%**, reflecting efforts to strengthen basic mathematical concepts and numeracy skills.

The **New Education Policy (NEP)** and **Integration of Arts** were each adopted by **67% and 68%** of respondents respectively. This alignment with NEP highlights the program's relevance to current educational reforms, promoting holistic and multidisciplinary learning. Arts integration encourages creativity and expression, enhancing students' cognitive and emotional development.

Joyful Learning, adopted by **62%** of teachers, underscores the program's focus on making education more engaging and student-centered. Similarly, **Play and Learn**, with **54%** implementation, emphasizes experiential learning methods to foster deeper conceptual understanding through games and activities.

Other notable methods include **Activity-Based Learning** (**48%**), **Enquiry-Based Learning** (**45%**), and **ICT Learning** (**40%**). These approaches highlight efforts to incorporate modern pedagogical tools, critical thinking, and technology in education. While ICT learning and enquiry-based learning were adopted by fewer teachers, their inclusion reflects a push toward future-ready education.

Less widely adopted methods included **Life Skills and Value-Based Learning (32%)**, **Personality Enrichment (34%)**, **Vocabulary Enrichment (25%)**, **Culture & Heritage (29%)**, and **Real-Life Case Studies (30%)**. Though these areas received lower adoption rates, they still play a significant role in promoting life-long skills, cultural understanding, and context-based learning.

Areas like **21st Century Skills (17%)**, **Current Affairs (Local News) (24%)**, and **Out-of-the-Box Thinking (32%)**, though less represented, underscore the program's comprehensive scope and its attempt to prepare students for a rapidly changing world.

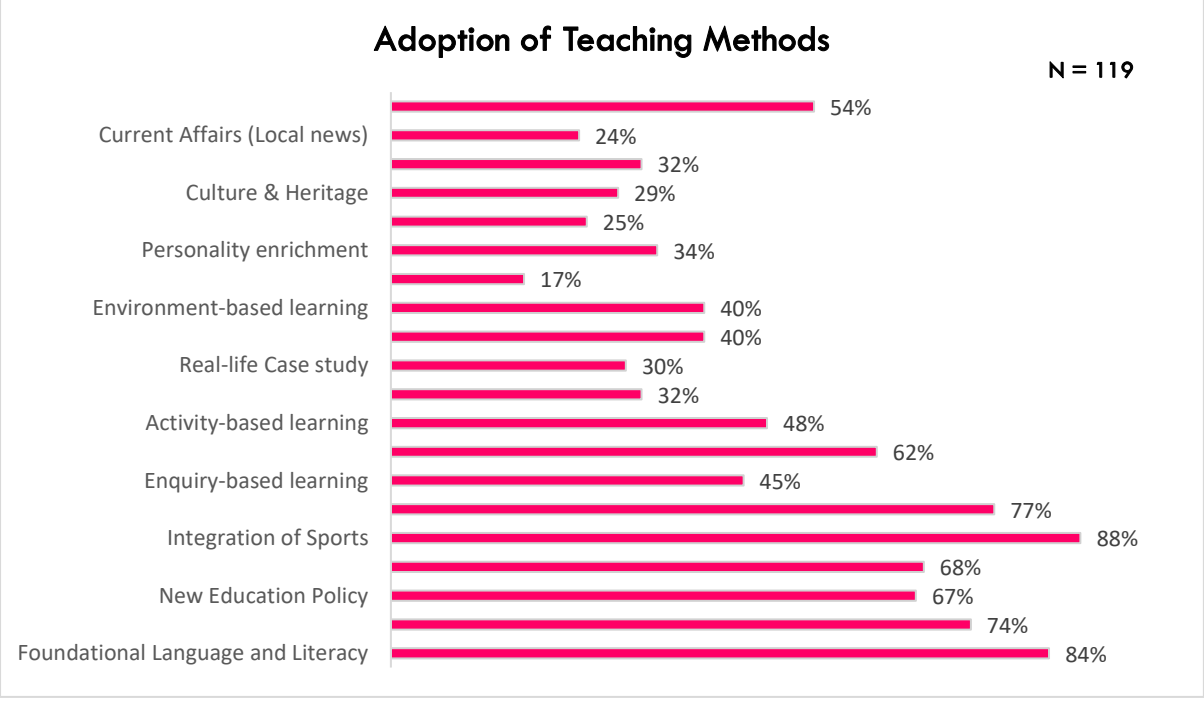

Figure 14: Adoption of new teaching methods introduced to teachers

Overall, the introduction of such a wide array of teaching methods demonstrates ZIIEI's holistic and innovative approach to education. While foundational skills dominate in adoption rates, reflecting immediate classroom priorities, the inclusion of more advanced and creative methods signals a step toward building a modern and inclusive education system.

To enhance adoption of less-utilized strategies, further training and support could be provided to help teachers integrate these methods more effectively into their classroom practices.

Some of the challenges that teachers experience when implementing ZIIEI teaching methods, particularly ones with lower-adoption like ICT Learning and Enquiry-Based Learning. A key barrier is the **lack of infrastructure**, with limited access to computers, projectors, and reliable internet, especially in rural or under-resourced schools. This restricts the practical use of ICT tools and digital learning methods.

Insufficient training and skill gaps further hinder the adoption of these methods. Teachers often lack confidence or familiarity with integrating technology or inquiry-based approaches into their lessons due to inadequate hands-on workshops and follow-up support.

Time constraints caused by administrative responsibilities leave little room for planning and executing resource-heavy methods like Enquiry-Based Learning, which require extensive preparation and student interaction. In classrooms with large numbers of students and diverse learning levels, providing individualized attention becomes challenging.

Additionally, **low student exposure to technology and inquiry-driven learning** at home limits their ability to engage with these methods effectively. Teachers also cited **limited parental and community support**, which reduces students' readiness to adapt to these innovative techniques.

Lastly, **policy and systemic issues**, such as delayed resource allocation and lack of monitoring, further impede the successful implementation of these methods, leaving teachers to manage with limited support.

5.4.1 Effect on Students' learning experience

The ZIIEI training sessions equipped teachers with a diverse array of modern, practical, and engaging teaching methodologies aimed at enhancing classroom learning experiences. By focusing on teacher upskilling, the program strives to transform schools into Role Model Schools, utilizing Innovative Paathshala resources and seamlessly integrating National Education Policy (NEP) guidelines into pedagogical practices. These efforts have collectively fostered a joyful, dynamic, and stimulating learning environment for students. The positive impact of these initiatives was evident in survey results conducted among Grade 4 and Grade 5 students, reflecting significant improvements in their classroom experiences and overall engagement.

Out of the 850 students surveyed across the 120 schools in 10 states, 93% (N=789) stated that they understood the concepts taught by teachers in their previous academic year, with **a mere 7% (N=61)** stating that they were unable to do so. More crucially, in order to ensure that the concepts taught in class were clearly understood by them, both sets of students demonstrated improved communication skills, a robust sense of self-awareness and higher confidence levels by approaching their teachers, interacting with friends and seeking the help of their families.

As illustrated in the graph below, **95%** of the students chose to air their doubts in class for the **teacher to clarify the concepts once again**. Such an action not only benefitted the concerned students but also many of their classmates indirectly. Similarly, **56%** of the students stated that **interacting with their fellow classmates** helped them understand the concept more clearly and would no doubt have enabled them to synthesize multiple views and ideas surrounding the concept taught. The children also did not hesitate in **approaching their parents (33%) and older siblings (16%)** to ensure that all that they learnt in class was clearly understood & internalized by them.

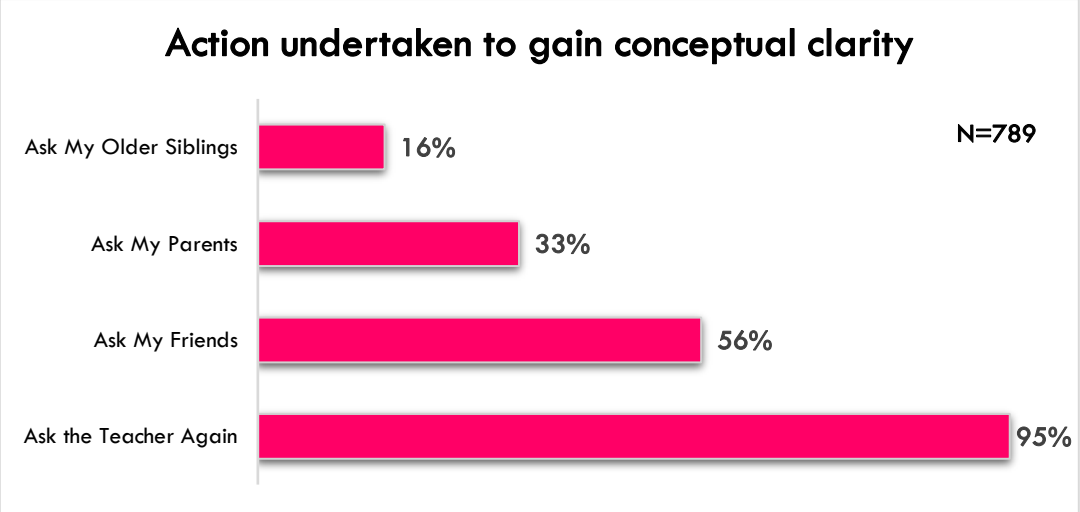

Figure 15: Students' approach to ensure conceptual clarity

The program's emphasis on "learning by doing" was demonstrated in the fact that a large majority, more than two-third of the beneficiary students **(69%)** were able to **connect the concepts and learnings taught in class to the world and environment external** to them, reflecting abilities like critical thinking and application of knowledge. However, it is hoped that going forward, the proportion of students facing challenges in doing so (29%) are further reduced through refinement in teaching styles, course materials and enhanced cognitive abilities.

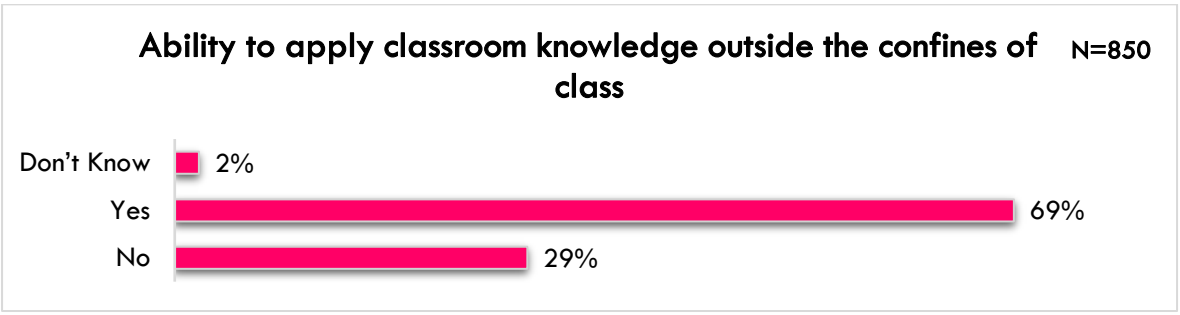

Figure 16: Application of classroom knowledge elsewhere

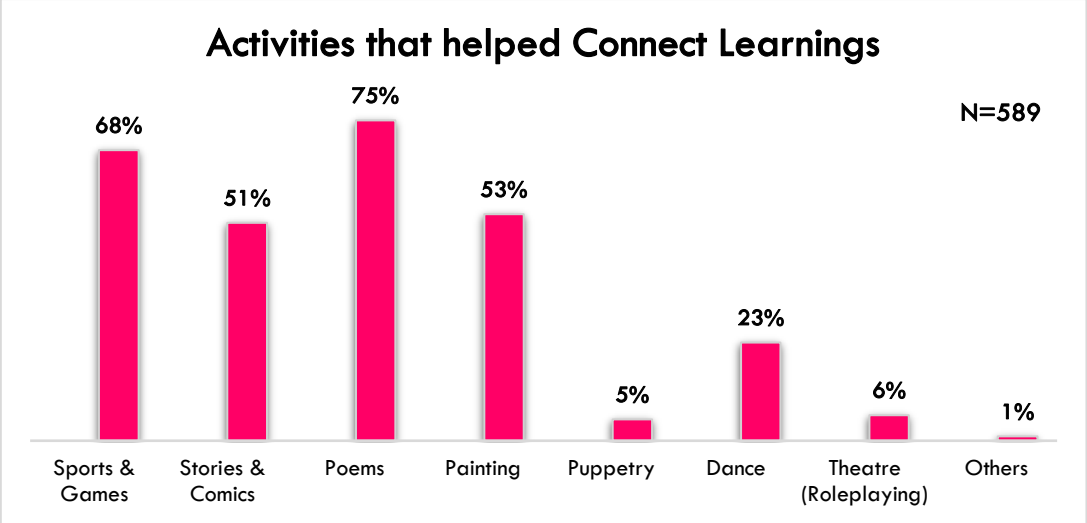

Figure 17: Key Activities to connect learnings

The above graph highlights the various pedagogical tools teachers deployed to help students connect learning effectively. **Poems** were the most impactful, with **75%** of students benefiting from them. **Sports & Games (68%) and Painting (53%)** also played a crucial role in enhancing understanding through active participation. **Stories & Comics helped 51%** of learners by making concepts engaging. **Dance (23%), Theatre/Roleplaying (6%), and Puppetry (5%)** are creative tools fostering conceptual clarity and interactive learning. These tools & methods ensure learning is engaging, creative, and better connected to real-life understanding.

To further propel learnings outside the classroom, **43% (N=363) of the students** reported participating in **excursions and field trips** organized by the school. It would be advisable that when designing similar such programs in the future, greater emphasis is laid on this aspect of learning and ensure that the current proportion of students not participating in such activities 57% (N=483) are minimized.

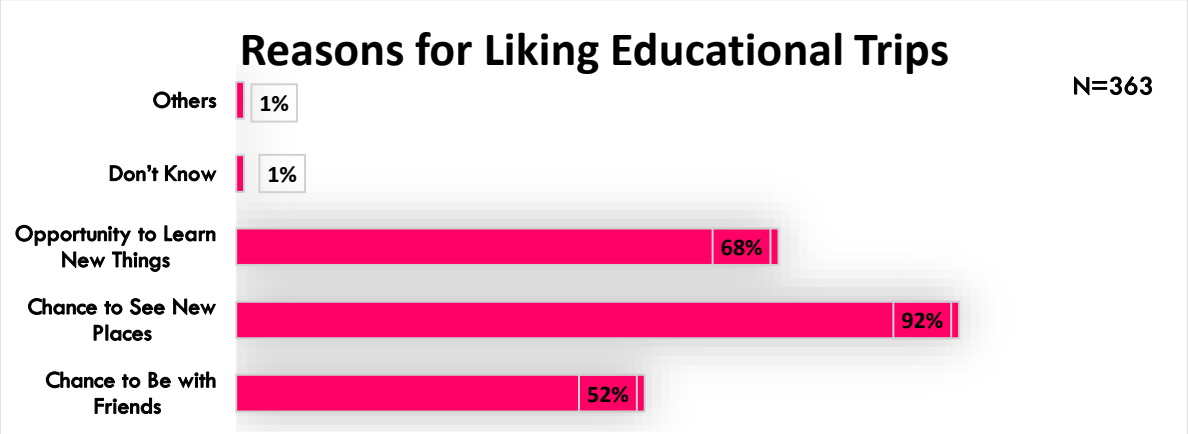

Figure 18: Main attraction of School Trips

The gains stemming from such activities are manifold. Field visits and excursions make subjects come alive by offering real-world experiences that deepen theoretical knowledge and help students engage practically with what they learn in classrooms. Such trips encourage experiential learning, fostering critical thinking and improving retention of concepts through firsthand interaction with ideas and environments. Field trips also promote cultural awareness and empathy by exposing students to diverse

perspectives, helping them develop tolerance and broader understanding. They create opportunities for discovering new interests while enhancing collaboration and social skills through group activities. Moreover, they contribute to a dynamic classroom environment, fostering enthusiasm for learning and reinforcing classroom teachings through hands-on experiences.

In conclusion, field trips provide an interactive and holistic learning approach, making education engaging, relatable, and effective.

5.5 Integration of Arts, Sports, and Storytelling in Classroom Education

The ZIIEI program has enabled teachers to incorporate arts, sports, and storytelling into their classrooms, fostering creativity, collaboration, and holistic development among students. These methods demonstrate the program's commitment to experiential and engaging teaching strategies.

5.5.1 Integration of Arts in Education

The use of various art forms in classrooms highlights a broad acceptance of creative and expressive teaching methods. Among the respondents, **80% (N=122)** of teachers have integrated **dance** and **music**, making these the most widely used art forms. Their popularity can be attributed to their versatility and ability to engage students across different age groups. **Visual arts**, such as drawing and painting, were incorporated by **69%** of teachers, emphasizing the importance of creativity and hands-on activities in fostering imagination and critical thinking.

Theatre, adopted by 22% of teachers, represents a more interactive form of arts integration that builds communication and interpersonal skills. While it is less frequently used, its impact on students' confidence and collaborative abilities is significant. Only **2%** of respondents reported not using any art forms, which demonstrates the widespread acceptance of arts integration as a valuable pedagogical tool.

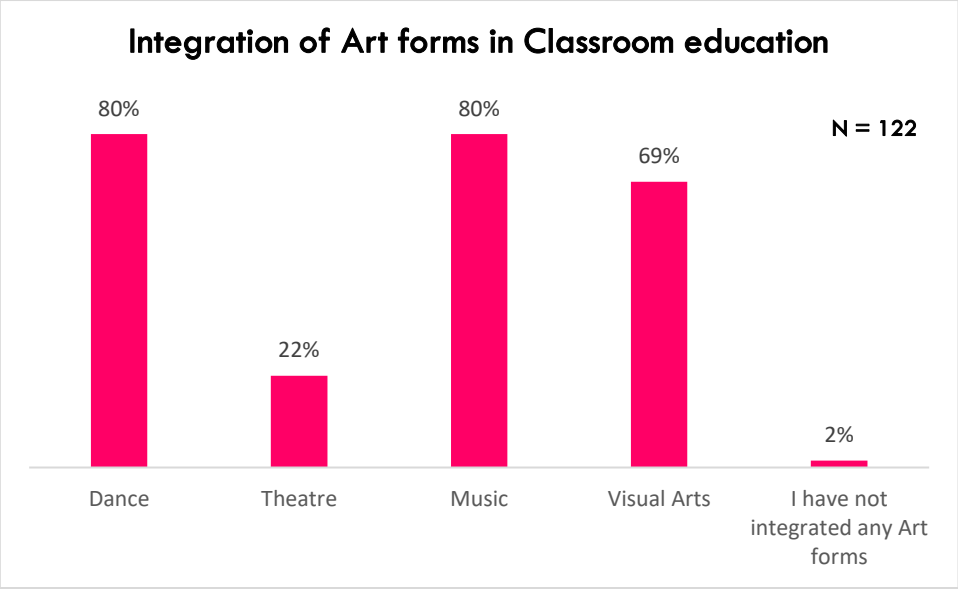

Figure 19: Integration of Art forms in classroom teaching

5.5.2 Skills Developed Through Sports Integration

The inclusion of sports in classroom education plays a pivotal role in building essential life skills. The most commonly reported benefit was the development of **team spirit**, identified by **89% (N=123)** of teachers.

This underscores the value of collaboration and the ability to work effectively with peers, which are critical for success in both academic and real-life settings.

Leadership skills and responsibility, highlighted by **79%**, reflect the potential of sports to teach students accountability and initiative. **Discipline**, noted by **73%**, emphasizes the role of structured sports activities in teaching time management and rule-following behaviours. Additionally, **64%** of teachers observed that sports foster an awareness of the **importance of good health**, promoting physical well-being among students.

Other noted skills include **higher-level thinking skills** (**57%**), which involve strategic planning and problem-solving, and **self-motivation** (**52%**), which encourages students to set and achieve personal goals. A smaller percentage (**28%**) mentioned **motor skills**, reflecting the physical benefits of sports.

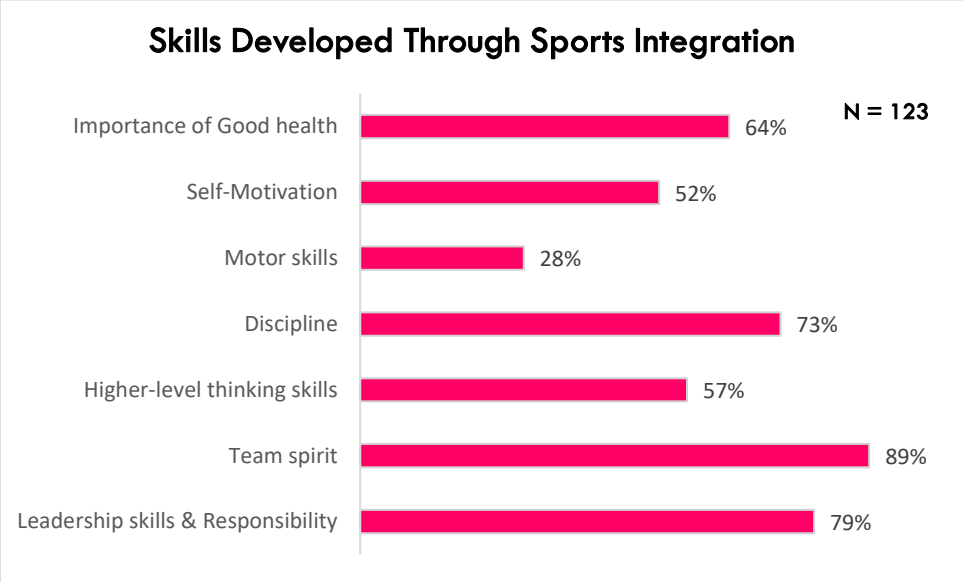

Figure 20: Skills developed by students through integration of sports in classroom education

5.5.3 Integration of Storytelling in Education

Storytelling methods have also been widely adopted by teachers, further enriching classroom experiences. **Dramatization and role play**, used by **80% (N=122)** of teachers, emerged as the most popular method, engaging students through active participation and fostering empathy and communication. **Flashcards** were reported by **77%** of teachers, showcasing their role in visual storytelling and aiding memory retention. Similarly, **props such as toys and puppets** were utilized by **73%**, reflecting a focus on tactile and visual engagement to make lessons more relatable and enjoyable. The high percentages of teachers using these methods demonstrate broad acceptance and adoption of storytelling techniques.

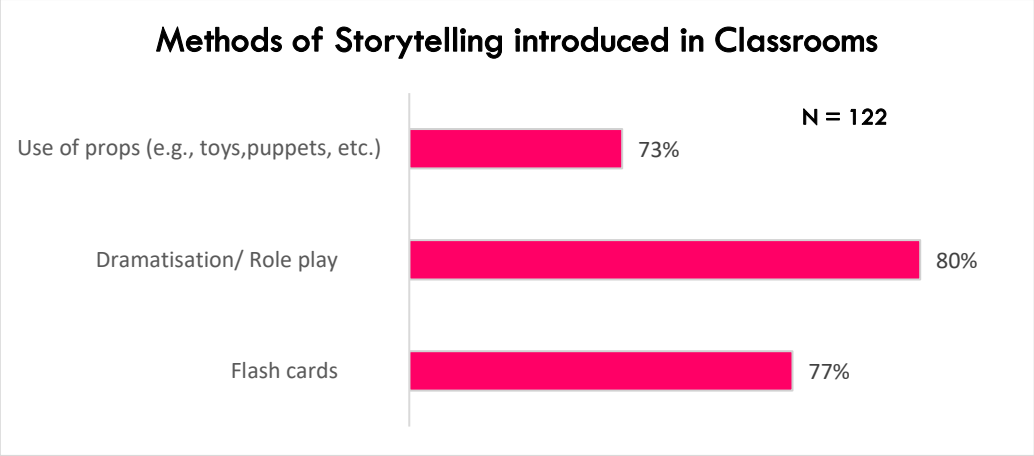

Figure 21: Methods of Storytelling introduced in classroom teaching

5.5.4 Effect on Students' 21st Century Skills

The survey conducted with students successfully captured a wide range of previously mentioned skills. Notably, **regarding self-motivation,** almost every single student (100%) from Grades 4 and 5 expressed a strong and affirmative desire to attend school, highlighting their enthusiasm toward learning. When probed further, it was heartening to witness a significant share of the respondents (96%) state that the idea of **new learnings drew them to the school** reflecting a strong focus on education and curiosity. **Meeting friends** follows at 69%, showcasing the importance of social interactions in a school environment. A smaller percentage (14%) attend school due to the **fear of punishment from parents,** reflecting external pressure as a driving factor. Lastly, 9% of students cited **other reasons,** indicating a variety of additional, less common motivations. Overall, the chart below underscores that learning and friendships are the primary reasons students look forward to school.

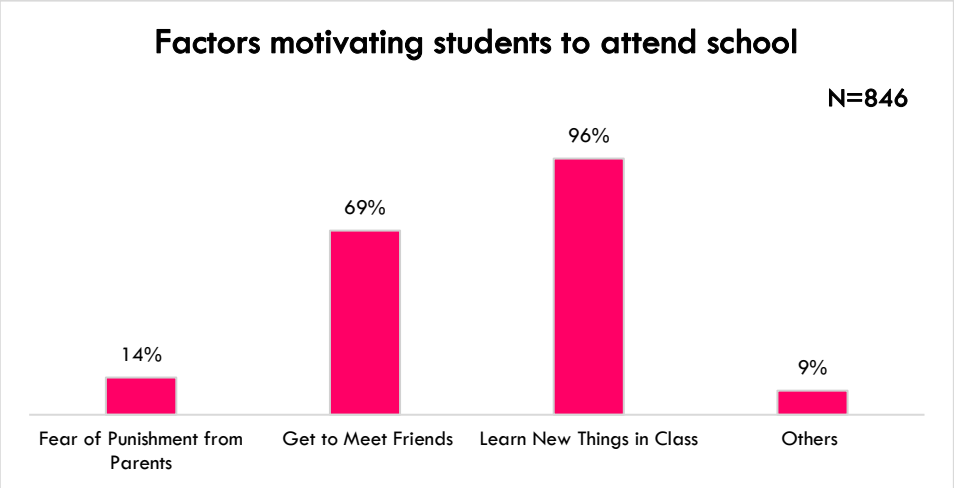

Figure 22: Factors promoting school attendance

The **trait of communication** was instilled and fortified by the teachers through detailed emphasis on building the skills and confidence of students to engage in meaningful interactions and participate in public speaking activities. This is reflected in the analysis whereby a lesser number of students (47%) display an aversion or hesitation when answering questions posed by the teachers in classrooms compared to their peers (53%). Similarly, the teachers must be commended for their improved pedagogy as 91% of the students reported actively participating in reciting poems and narrating stories in the classrooms.

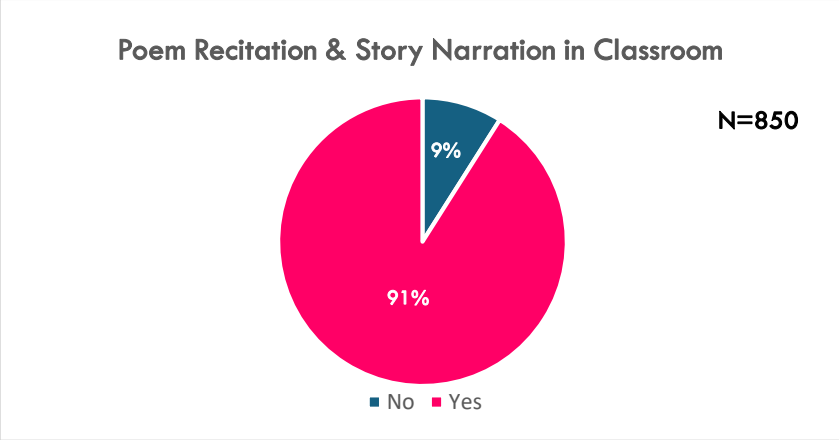

Figure 23: Confidence in poem recitation & story narration

In an encouraging development, a pronounced proportion of respondents (91%) stated that they regularly engage in sharing their classroom learnings with their families which can be viewed as an effective way to not just recall everything learnt at school and fortify one's lessons and concepts but also helps the parents track the syllabi being taught as per the academic calendar.

Crucially, many students possessed **collaborative skills and tendencies to engage in team exercises** espousing strong team spirit. Approximately 93% of the students (N=793) reported that in their previous academic year, they had participated in group-based activities at school.

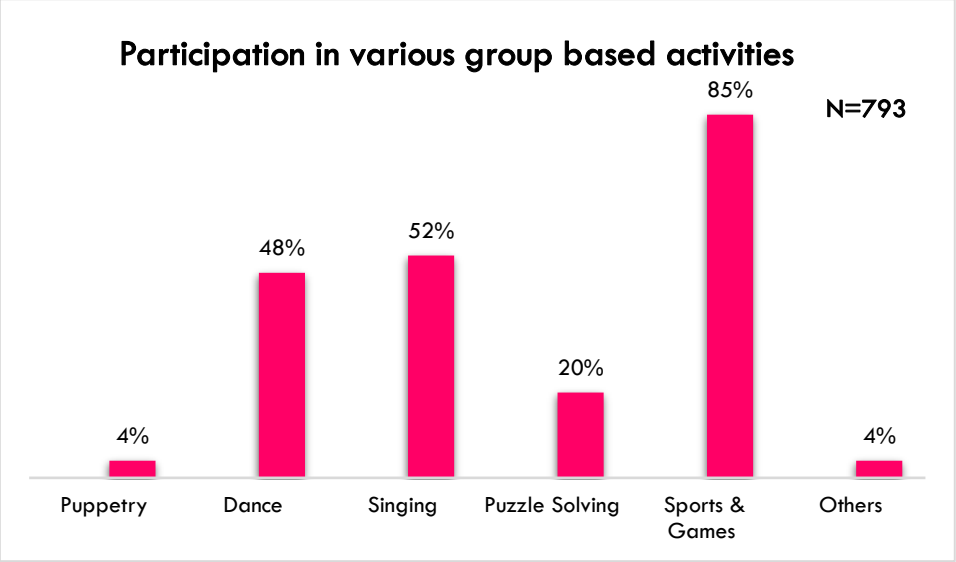

Figure 24: Key group activities involving students

The chart above showcases various activities that children enjoy participating in to build additional skills and enhance their learning capacities. **Sports & Games** is the most preferred activity, with **85%** of children engaging in it, highlighting its role in **teamwork, physical development, and discipline**. **Singing (52%) and Dance (48%) follow**, reflecting children's interest in creative and **expressive arts** and adding to a **joyful, engaging learning environment**.

Puzzle Solving attracts 20%, fostering **critical thinking** and **problem-solving** abilities. Meanwhile, activities like Puppetry and a few other unsubstantiated ones account for 4% each, indicating limited

participation but unique learning opportunities. Overall, the chart emphasizes the diverse interests of children in activities that promote holistic growth and skill development.

Collaborative skills alongside team spirit also come to fore when studying children's behaviour with their fellow classmates whereby 90% of the students reported listening & actively deliberating over the suggestions shared by fellow classmates during group activities. In a heartening development, as per the illustration below, **children displayed maturity beyond their years by choosing to avoid arguments and altercations with their classmates** and friends stemming from any disagreement during group activities. The data highlights that occasional disagreements are common during group activities, reflecting opportunities for collaboration, communication, and conflict resolution among students.

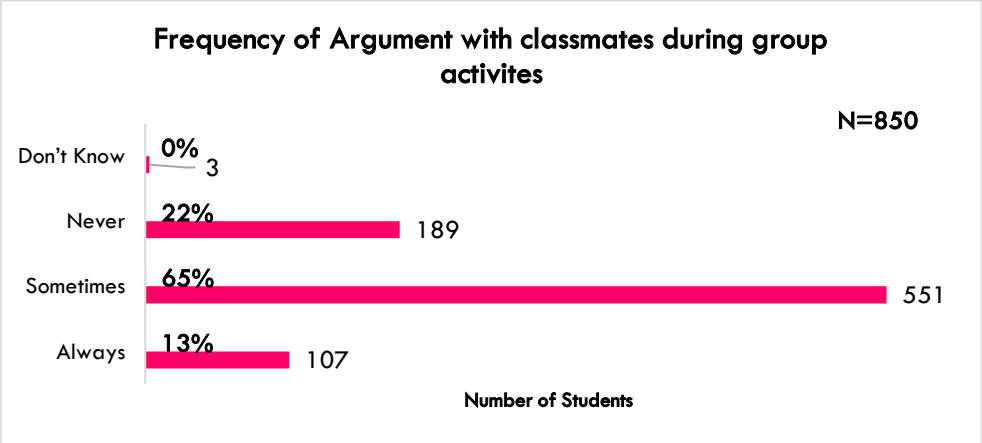

Figure 25: Frequency of Arguments & Disagreements during group activities

Lastly, students demonstrated a **keen sense of time-management and discipline.** Notably, 78% of respondents (N=666) prioritized completing homework before playing after returning home from school, while 93% consistently submitted school tasks—homework, assignments, and tests—on time, adhering to teachers' guidelines. Additionally, an impressive 93% managed their morning routines independently, including activities like brushing teeth, bathing, and dressing for school. These findings highlight the program's success in fostering essential 21st-century skills among students.

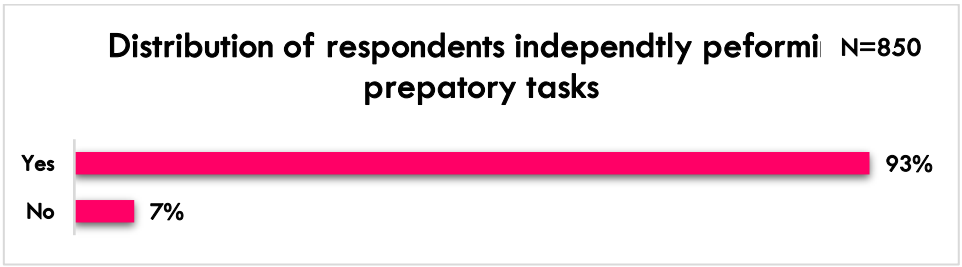

Figure 26: Ability to perform tasks prior to school

5.6 Adoption of Project-Based and Experiential Learning and Teaching Practices

The ZIIEI program has had a transformative impact on the adoption of project-based and experiential learning methods among teachers, as well as on their overall teaching practices. A remarkable **95%** of respondents reported using these innovative methods in their classrooms, showcasing the program's effectiveness in promoting hands-on and student-centered approaches. Only **5%** of teachers indicated they do not use these methods, highlighting minimal resistance and the program's broad appeal.

Among those who have adopted project-based and experiential learning, **37% (N=119)** reported using these methods "always," signifying their strong integration into regular teaching routines. These teachers demonstrate a consistent commitment to fostering interactive and meaningful learning experiences. The remaining **63%** use these methods "sometimes," reflecting a practical and flexible approach to their implementation. This balance between regular and occasional use underscores the adaptability of these strategies to diverse classroom contexts, subject matter, and resource availability.

The training has also notably influenced teachers' overall pedagogical practices. Over half of the respondents (**53%**) reported that they have fully integrated the methods introduced during the training into their daily teaching activities. This level of adoption highlights a deep transformation, where teachers actively apply innovative techniques to enhance classroom engagement and learning outcomes. Another **42%** stated that they have adopted some of the new teaching practices, indicating a gradual but steady incorporation of these methods as they adapt them to their unique teaching environments. Only **1%** of teachers noted that their practices remain largely unchanged, demonstrating the program's success in creating a shift among the vast majority of participants.

This adoption of project-based and experiential learning reflects the profound influence of ZIIEI training. Teachers are leveraging these methods to foster critical thinking, collaboration, and creativity among students. The high rates of adoption, both partial and complete, suggest that these approaches align well with teachers' goals and classroom realities, enabling them to create more engaging and effective learning environments.

Following are some of the field-derived examples illustrating how teachers are implementing experiential and project-based learning activities in their classrooms, as reported in the data:

Mathematics Through Hands-On Games and Models:

- **Number Games and Puzzles:** Instead of relying solely on drills, teachers introduced math-based puzzles, clay modeling for shapes, and bead-based math games. For example, students might use locally sourced beads to form sets, count, and solve simple arithmetic problems, turning abstract concepts into tactile challenges.
- **Drawing Clocks to Learn About Time:** By having students draw their own clocks, they not only learned to tell time but also understood the significance of time intervals and clock positions more intuitively.

Language and Literacy Through Storytelling and Creative Expression:

- **Storytelling Sessions Using Folk Tales:** Teachers leveraged local folk tales in the local language (e.g., Chhattisgarhi) to enhance literacy skills. Students listened, retold, and even dramatized these stories, improving their language abilities while also strengthening cultural connections.
- **Story-Based Learning for Reading and Writing:** Stories were used to teach vocabulary, sentence structure, and reading comprehension. Students often participated by finishing a story's ending or acting out scenes, fostering creativity and deeper engagement.
- **Creative Writing and Journalism Projects:** Some teachers encouraged students to create their own school newspapers or write stories based on local life, improving both writing skills and critical thinking.

Environmental Studies and Science Through Observation and Projects:

- **Nature Walks and Environmental Exploration:** To teach environmental concepts, students went on nature walks where they observed local flora and fauna, collected leaves, and discussed

natural cycles. This direct observation and subsequent reflection helped students grasp scientific concepts more concretely.

- **Project-Based Science Tasks:** Teachers assigned projects that involved creating simple models—like water filtration setups using local materials—or theme-based crafts (e.g., thermocol models of plant cells). These activities allowed students to test hypotheses, observe outcomes, and develop problem-solving skills.

Role-Play and Thematic Activities for Social Studies and Values Education:

- **Historical Role-Play:** To teach history or social science topics, teachers arranged role-playing sessions where students took on the roles of historical figures or community members. This method helped students internalize events, understand cause-and-effect relationships, and develop empathy and collaborative problem-solving.
- **Value-Based Learning Through Real-Life Observation:** Some teachers used real-life scenarios—such as creating waste segregation projects or involving students in village clean-up activities—to teach responsibility, environmental stewardship, and community values.

Art-Integrated and Cultural Activities for Multi-Subject Reinforcement:

- **Clay Modeling and Crafts:** Students modeled shapes or created simple craft items to learn concepts in geometry, environmental science, or social studies. This approach connected abstract knowledge to concrete creation.
- **Skits and Thematic Performances:** Teachers encouraged students to write and perform short plays, often drawing from local culture and environmental themes. Such performances reinforced content knowledge while improving communication, teamwork, and confidence.

ICT-Integrated Activities Where Possible:

- **App-Based Quizzes and Multimedia Presentations:** In schools with limited but available ICT tools, teachers used mobile apps for interactive quizzes or basic multimedia presentations. Students engaged more deeply with content through audio-visual aids, making the learning process more dynamic and memorable.

Collectively, these examples show that teachers are using innovative, resourceful approaches ranging from storytelling and nature walks to role-play and simple ICT integration, to transform static lessons into immersive, learner-centered experiences. These experiential methods not only improve academic understanding but also enhance problem-solving abilities, creativity, communication, and critical thinking skills.

The program's ability to bring about notable pedagogical shifts also indicates its relevance and practicality. The consistent use of these methods by a substantial number of teachers reflects the program's ability to meet their professional needs and enhance teaching practices. For those still in the process of integrating these methods, continued support through follow-up training and resource distribution could ensure even greater consistency and depth in their application.

5.6.1 Effect of Project-based learning booklets on Students

The ZIIEI program has enabled teachers to incorporate exercises from Project-based learning booklets into their classrooms, fostering a variety of skills among students and ensuring holistic development.

Out of 423 students surveyed across the 4th grade, 298 (70%) reported having undertaken an exercise in their previous class (Grade 3), wherein they had to **write about the likes and dislikes of their family members.** Participating in such an exercise instilled a variety of skills among them.

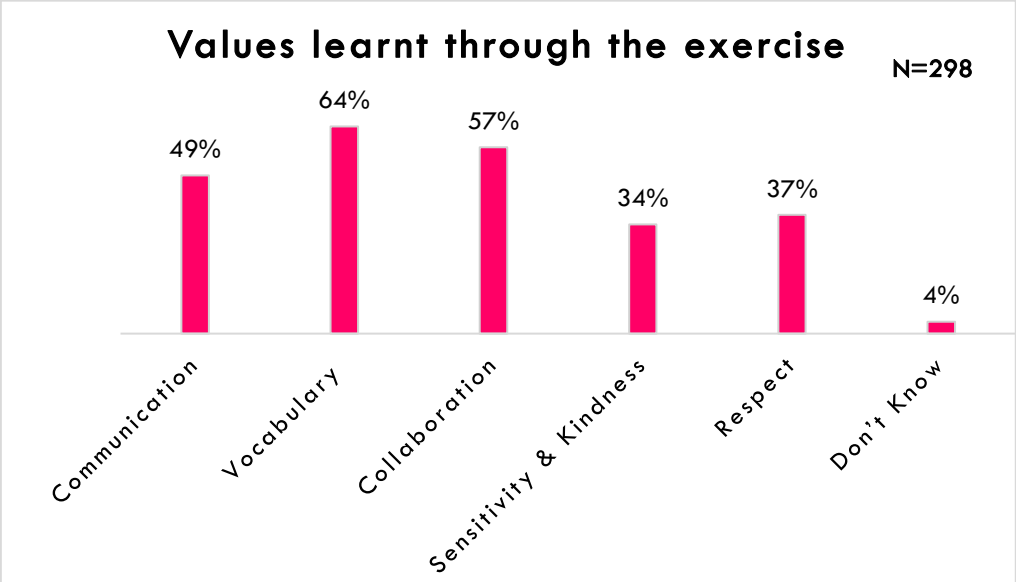

Figure 27: Values learnt from writing about likes & dislikes of Family members

The most notable value gained was **vocabulary development** (64%), helping students express themselves clearly. This was followed by **collaboration** (57%), showing that interacting with other family members and relatives played an instrumental role in completing the exercise. **Communication** skills (49%) improved as students interacted and shared thoughts effectively, clearly stating the demand of the exercise to their family members and consequently, sharing the results with their classmates and teachers. Additionally, they **developed respect** (37%) for family perspectives and **learned sensitivity and kindness** (34%) by understanding others' feelings & tastes and possibly gaining a deeper understanding of the experiences that shaped those choices. A small percentage (4%) were unsure about the values gained. Overall, the activity helped students build essential life skills, including empathy and effective communication, as envisioned by the exercise.

In a similar vein, approximately 60% (N=255) of the student beneficiaries **wrote a poem** about their family and their family members in their previous grade.

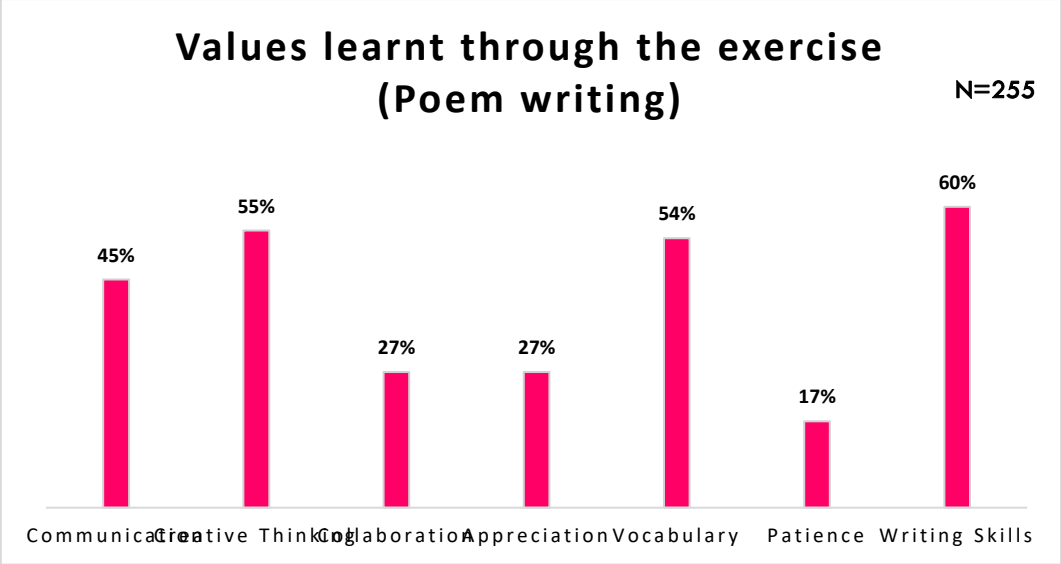

Figure 28: Values learnt from writing poems about family

The bar chart highlights the values students gained by participating in the above stated exercise. The activity primarily enhanced **Writing Skills** for approximately three-fifth of the students (60%), while more than half of them **sharpened their cognitive abilities** through improved **creative thinking** (55%), as they explored imaginative ways to express their emotions.

Vocabulary (54%) was also enriched, helping students articulate thoughts effectively. The exercise improved **Communication** (45%) by encouraging expression, while **Collaboration and Appreciation** (both at 27%) reflect teamwork and recognizing other members' contributions. Additionally, **Patience** (17.25%) was cultivated as students worked thoughtfully through the process. Overall, the exercise fostered **creativity, emotional intelligence, and essential communication skills** in a structured yet expressive manner just as designed by its curators.

As previously mentioned, **among 850 students, 427 belonged to Grade 5** who too carried out exercises listed in the Project-based learning booklets.

To begin with, three fourths (75%) of the respondent cohort totaling approximately **322 students wrote about the childhood of their mothers** and described some key milestones experienced in the lives of their mothers.

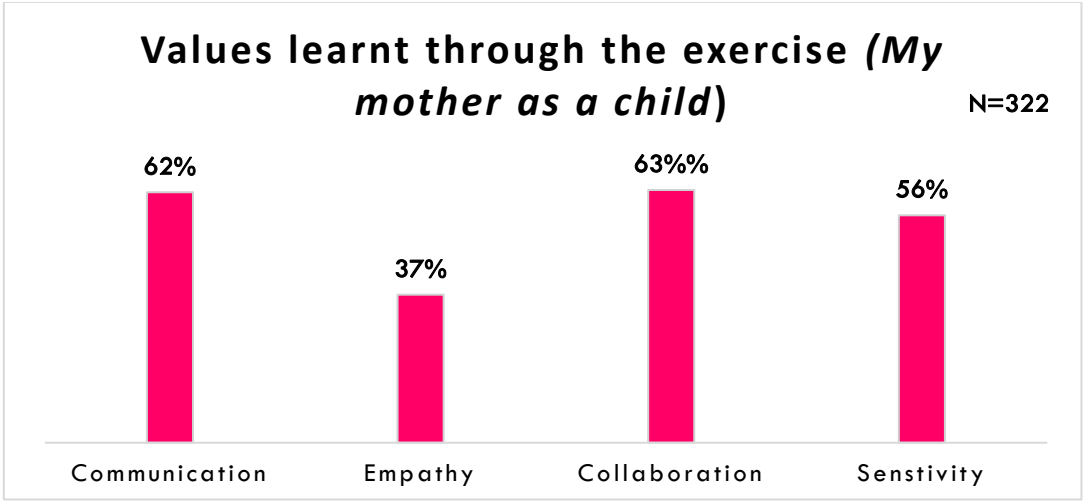

Figure 29: Values learnt while writing about Mother's childhood

The exercise provided students with an opportunity to develop a range of important values and skills. By **engaging deeply with family members**, particularly maternal members familiar with the subject of their work, students were encouraged to connect, converse, and reflect on personal histories. A substantial outcome of this activity was the **students' interaction with their mothers**, where they explored their mothers' childhood and perspectives. As a result, approximately **63%** of participants reported **improved collaborative skills**, while **62% noted enhanced communication** abilities. Beyond these practical skills, the exercise also nurtured **emotional growth**, with **56%** of students developing **greater sensitivity** and **37%** reporting **increased empathy**. By understanding their mothers' life journeys, students gained valuable insights that strengthened their emotional intelligence and fostered deeper familial connections.

In a similar exercise, the students were asked to document the birth years of female members belonging to the maternal side of their family and solve certain mathematical queries based on them.

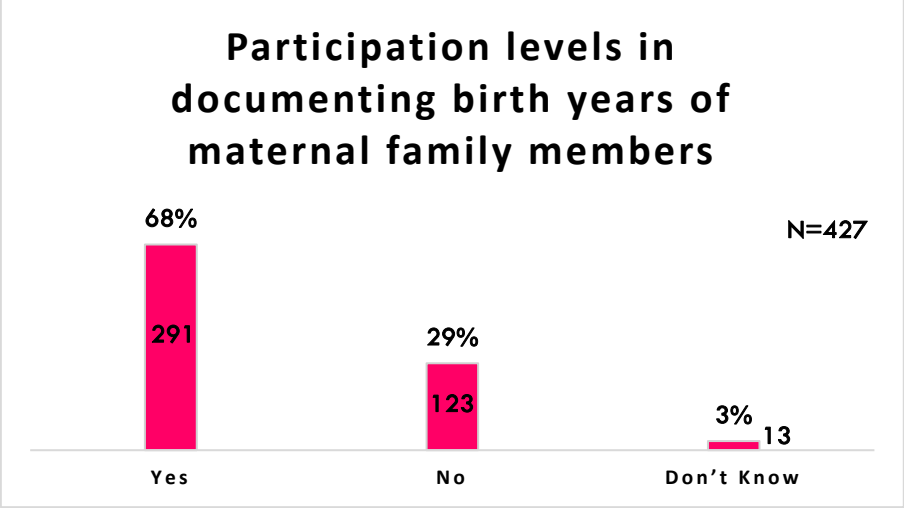

Figure 30: Participation levels of Grade 5 students in the exercise

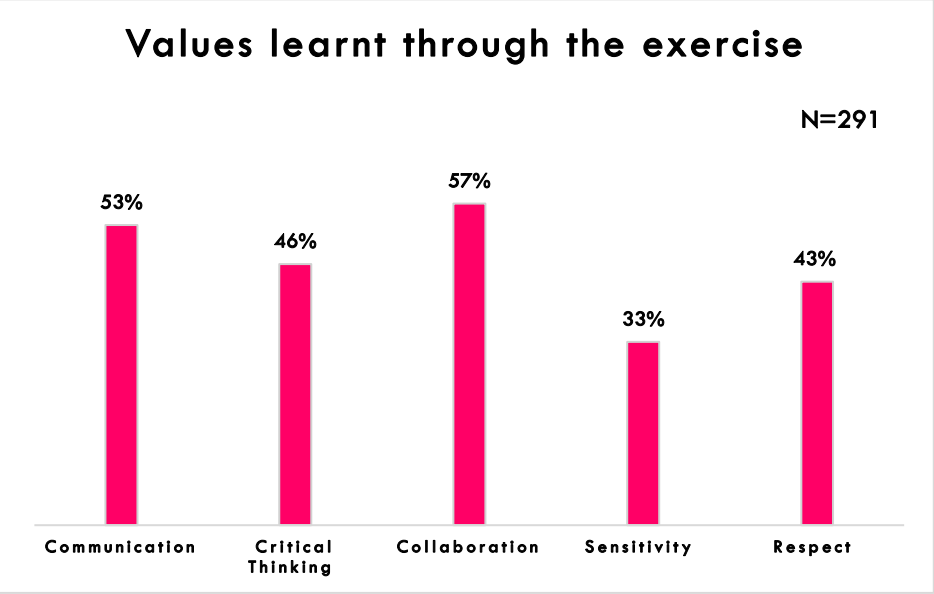

Figure 31: Values learnt through documenting birth years of maternal family members

The activity of exploring the birth years of maternal family members enabled students to develop essential values and skills. **Communication (53%)** improved as students engaged in conversations with

their mothers and extended family, to carry out the requisite tasks enshrined in the exercise. **Critical thinking (46%)** was enhanced as students analyzed generational data, drawing conclusions about family histories. **Collaboration (57%)** emerged as a key value as students worked with family members to collect and interpret information. The exercise also nurtured **sensitivity (33%)** by encouraging students to reflect on the challenges and milestones of their maternal family members' lives. Lastly, **respect (43%)** grew as students appreciated the contributions and experiences of previous generations. Additionally, using the digits in the birth years provided a practical opportunity to strengthen basic addition and subtraction skills, further supporting **mathematical learning through real-life contexts.**

5.7 Student Engagement and Understanding with Innovative Teaching Methods

The ZIIEI program's focus on innovative teaching methods and resources, such as the *Innovative Pathshaala*, has made a significant impact on student engagement and comprehension. The data highlights both the extent of student participation and their interest in and ability to adapt to these new methods.

5.7.1 Student Engagement with Innovative Pathshaala Content

The level of student engagement with *Innovative Pathshaala* content indicates widespread usage, with **76%** of respondents reporting that at least half of their students engage with the materials regularly. Specifically, **18%** of teachers noted that more than **75%** of their students regularly use the content, reflecting strong classroom integration and interest. A majority, **58%**, observed engagement levels between **50% and 75%**, suggesting substantial participation. Lower engagement was reported by **14%** (25% to 50% of students) and **10%** (less than 25%), indicating potential barriers to adoption in some classrooms. These findings suggest that while the majority of students benefit from these resources, targeted support may be needed to reach those in classrooms with lower levels of participation.

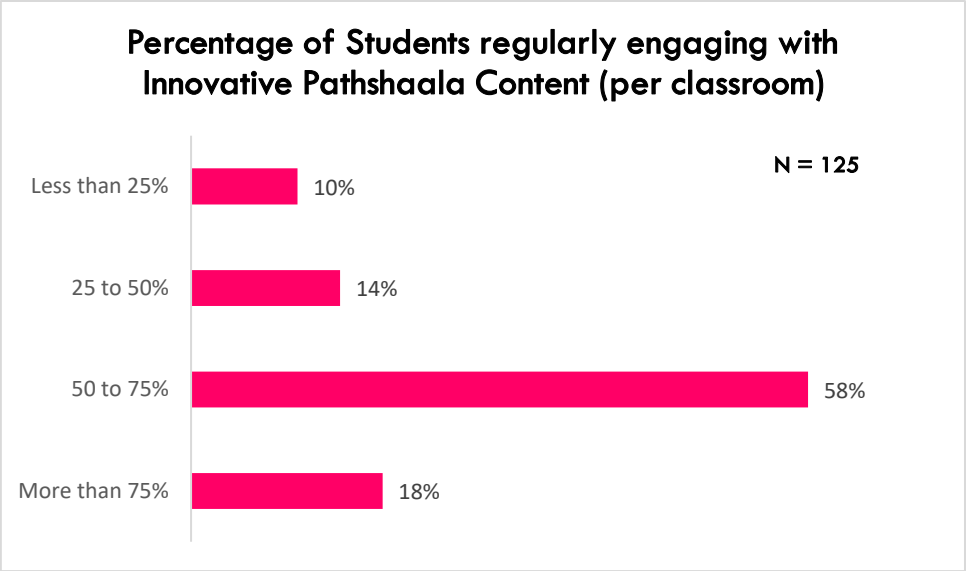

Figure 32: Percentage of students who regularly engage with Innovative Pathshaala content

5.7.2 Interest in New Teaching Methods

The new teaching methods introduced through ZIIEI have been highly effective in capturing student interest. **74%** of teachers reported that students are "very interested" in learning through these innovative techniques, indicating a strong positive reception. An additional **24%** described students as "moderately interested," suggesting that the methods are engaging for nearly all learners. Only **2%** of teachers noted

any lack of enthusiasm, demonstrating that the methods have broad appeal and effectiveness in making learning more interactive and enjoyable.

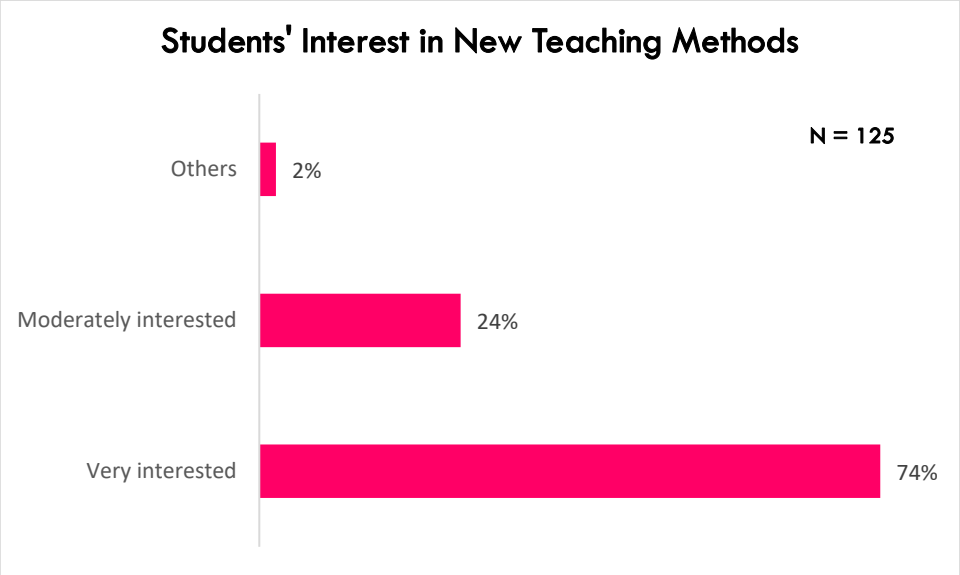

Figure 33: Level of student interest in new teaching methods

5.7.3 Comprehension and Understanding of New Methods

In terms of how well students have been able to follow and understand the innovative teaching methods, **49%** of teachers reported that students have grasped the concepts well and can apply them independently. This indicates that the majority of students are benefiting significantly from these methods, developing the ability to internalize and utilize new concepts. An additional **48%** of teachers noted that while students understand the methods, they require frequent support, suggesting a need for continued teacher guidance and reinforcement in the classroom. A small proportion (**3%**) highlighted challenges, indicating that for a few students, additional interventions or alternative methods may be necessary to ensure full comprehension.

5.8 Impact of ZIIEI Teaching Methods on Student Engagement, Performance, and Skill Development

The implementation of innovative teaching methods under the ZIIEI program has demonstrated a transformative impact on student engagement, attendance, academic performance, and skill development. These outcomes highlight the program's ability to foster a holistic and dynamic learning environment that benefits students across diverse contexts.

5.8.1 Student Engagement and Participation

The majority of teachers (68%) reported increased student participation since adopting the new teaching methods, underscoring the program's effectiveness in creating interactive and engaging classrooms. An additional 28% observed improvements among some students, indicating that while the methods are broadly effective, their impact may vary depending on subject or individual needs. Only 4% of teachers noted little or no change, suggesting minimal resistance to these approaches. The methods' emphasis on interactive and hands-on activities, such as project-based learning and storytelling, has played a critical role in making learning more enjoyable and accessible, resulting in higher levels of student participation.

Teachers played a crucial role in ensuring that students successfully engaged with the program's innovative teaching methods. After receiving training through workshops and capacity-building sessions, educators became more confident and skilled in implementing experiential, activity-based strategies.

They introduced these new approaches gradually, offering guidance, clarification, and encouragement as students adjusted from passive listening to active participation. This supportive teacher presence helped ease any initial student hesitancy, teachers worked to create trust, establish routines, and maintain a positive classroom atmosphere, allowing learners to explore unfamiliar activities without fear of failure.

"Students show more enthusiasm, especially when they receive interesting worksheets. They might say, 'Are there more of these?' because they find them engaging. This curiosity and willingness to do more directly contributes to better academic involvement."(Qualitative insight derived from the Semi structured interview conducted with teacher)

In practice, teachers not only presented new ideas but also adapted them to their students' varying needs, learning speeds, and interests. By grouping learners, personalizing tasks, and ensuring that stronger students could assist their peers, teachers helped build a collaborative classroom culture. They provided consistent feedback, celebrated incremental improvements, and integrated local stories, real-life examples, and accessible materials so learners could relate to the content and see its relevance. Teachers' readiness to improvise, be it through self-made teaching aids, flexible lesson plans, or innovative uses of limited ICT resources, ensured that students remained engaged, curious, and confident. Ultimately, the sustained support and encouragement from teachers were key in transforming innovative educational methods from theoretical ideals into meaningful, interactive learning experiences for all students.

The teacher pointed out a noticeable change in **student participation**. Previously shy students, who may have been hesitant to speak or engage in class discussions, became more confident in expressing their ideas. Additionally, students were motivated to participate actively in **cleanliness and discipline**, showing a positive behavioral shift. This indicates the broader impact of ZIIEI strategies on social behavior and responsibility, beyond just academic outcomes. (semi structured interview)

5.8.2 Changes in Student Attendance

The program's methods have also positively influenced attendance, with 81% of teachers reporting noticeable improvements. This increase reflects the motivational impact of engaging teaching strategies, which make classrooms more appealing and foster a sense of belonging among students. The remaining 19%, who observed no change, suggest that while teaching methods are impactful, other external factors such as socio-economic challenges might affect attendance.

To address these issues, teachers employed more engaging, activity-based pedagogies, such as storytelling, play-way methods, and project-based learning, hoping to make the classroom experience more attractive to students. By integrating culturally relevant content, promoting collaborative group work, and introducing hands-on activities, they aimed to create an environment where students would feel more motivated to attend regularly.

In addition, the data shows that teachers encouraged stronger parental engagement through regular parent-teacher meetings, community awareness campaigns, and school events. Increased parental interest and understanding of the school's innovative approaches may have influenced students' willingness and ability to attend more consistently. The combined effects of more engaging teaching methods, improved home-school relationships, and supportive community initiatives suggest that these strategies could contribute to more regular attendance patterns over time.

5.8.3 Impact on Academic Performance

The innovative teaching approaches introduced through ZIIEI have significantly enhanced academic outcomes. Over half of the teachers (54%) reported a "significant improvement" in academic performance, reflecting the effectiveness of methods like foundational literacy and numeracy exercises, enquiry-based learning, and integration of arts and sports. Another 45% observed slight improvements,

suggesting a gradual but positive trend as students adapt to these methods. The negligible 1% reporting no change highlights the program's broad applicability and success in addressing learning gaps.

5.8.4 Improvement in Foundational Literacy and Numeracy

The use of tools such as the *Innovative Pathshaala* booklets has led to substantial improvements in foundational literacy and numeracy skills, with 57% of teachers noting significant progress. Another 26% reported moderate improvement, while 9% observed slight changes. These findings reflect the effectiveness of the booklets' practical activities in reinforcing core competencies. A small proportion (3%) reported minimal improvement, suggesting that additional tailored interventions might be needed for certain classrooms. The results indicate that the program has been successful in strengthening essential skills that are critical for long-term academic success.

Figure 34: Poster proclaiming NIPUN Bharat Oath in Chandigarh

5.8.5 Effect on Students' FLN abilities

The ability to read, write, and perform fundamental arithmetic operations serves as a crucial cornerstone and an essential prerequisite for both future education and lifelong learning. However, numerous governmental and non-governmental surveys reveal a pressing learning crisis: a substantial number of elementary school students—estimated to exceed 50 million—have yet to achieve foundational literacy and numeracy. This includes the capability to read and comprehend basic text as well as perform simple arithmetic operations, such as addition and subtraction, using Indian numerals [4].

As per the National Education Policy (NEP) 2020, the highest priority for the school education system is to **achieve universal acquisition of foundational literacy and numeracy skills at primary level by 2025.** Foundational learning is the basis of all future learning for a child. Not achieving basic foundational skills of being able to read with comprehension, writing and doing basic mathematics operations, leaves the child unprepared for the complexities of the curriculum beyond grade 3 [5].

This vision of the NEP 2020 underscored Sambodhi's intent to capture the FLN status of students across Grade 4 and 5, since Grade 3 is the inflection point by which children are expected to "learn to read"

[4] https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
[5] http://dsel.education.gov.in/nipun-bharat

so that they can "read to learn" after that. It also reflects on the efforts of the program to design project-based booklets geared to inculcate foundational literacy and numeracy skills within children through a variety of activities.

Figure 35: ASER Reading exercise being performed by students

Figure 36: ASER Numeracy exercise being performed by a student

The chart below illustrates the ASER Reading & Numeracy Levels, highlighting foundational skill attainment among students. The data emphasizes that almost three-fourth of the students (74%) have achieved the "Story Level" in reading, which is the highest reading level a child can attain and bodes well for the future learning abilities of these students. However, of notable concern are the 4% of Grade 4 & 5 students who are at the "Letter Level" indicating an inability to read simple words.

In the case of Numeracy, while an impressive 52% of students can perform "Division Level" tasks and 30% can handle "Subtraction Level" problems, a concerning 3% are still only able to identify single digit numerals and unable to solve rudimentary mathematical problems and thus, are in need of greater care and attention from their teachers & tutors.

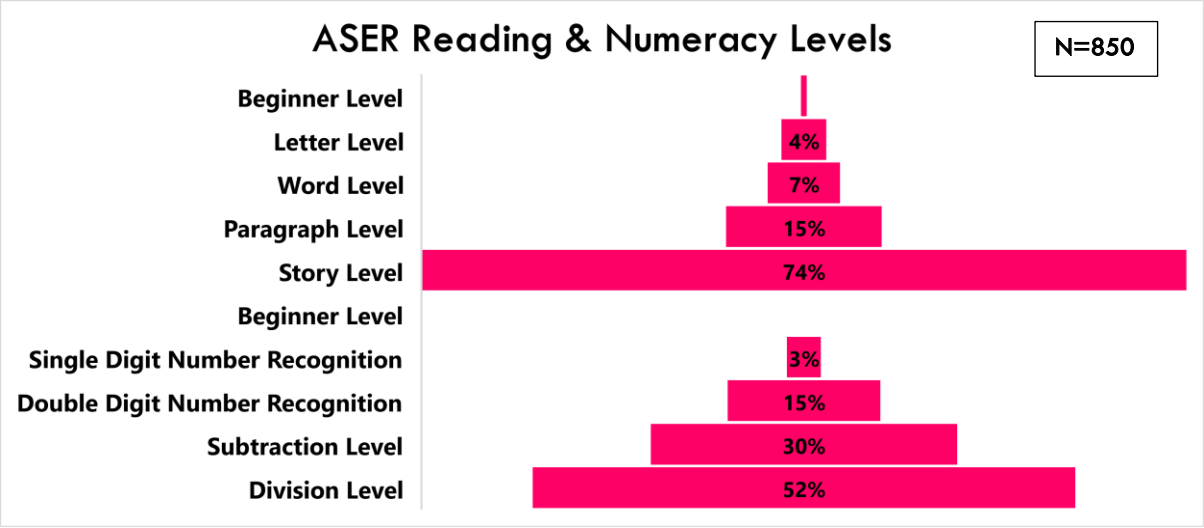

Figure 37: ASER Reading & Numeracy Levels of Students across Grade 4 & 5

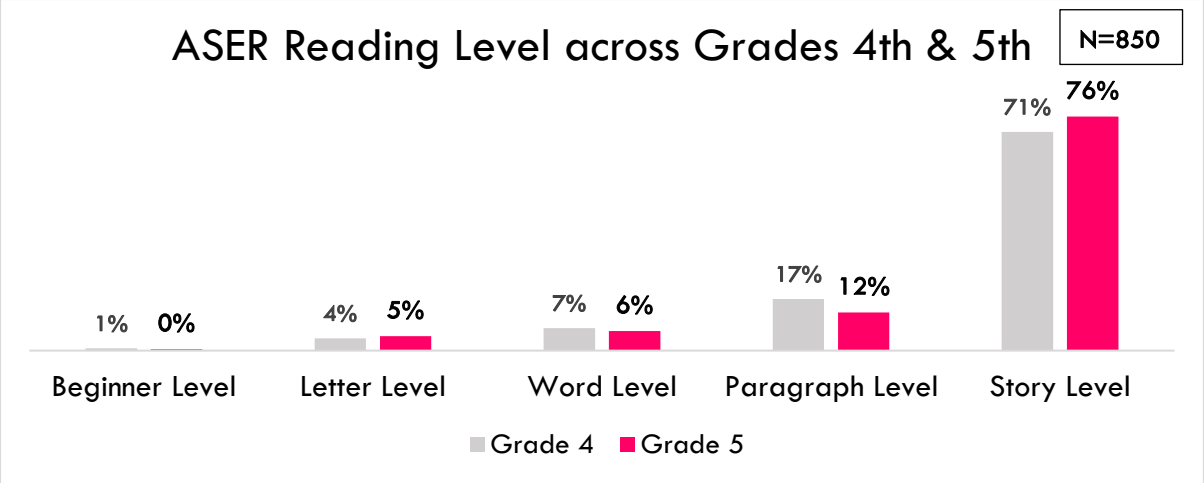

Figure 38: ASER Reading Level across Grade 4 & Grade 5

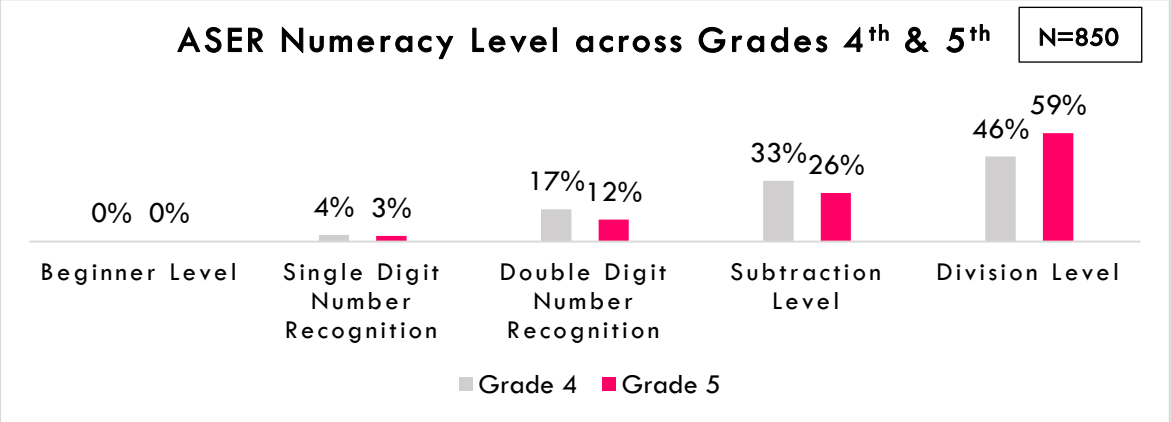

Figure 39: ASER Numeracy Levels across Grade 4 & Grade 5

Extent of Student Learning Improvement in Function literacy and numeracy (F)LN

When quantifying the impact on learning, 48% of teachers reported that 61-80% of their students have shown progress in their Function literacy and numeracy, while 32% noted improvements among 41-60% of students. These figures highlight the program's significant reach and its capacity to drive meaningful learning outcomes for the majority of students. However, a smaller proportion of teachers reported improvements among fewer students, indicating that additional support or contextual customization may be necessary to ensure equity in outcomes.

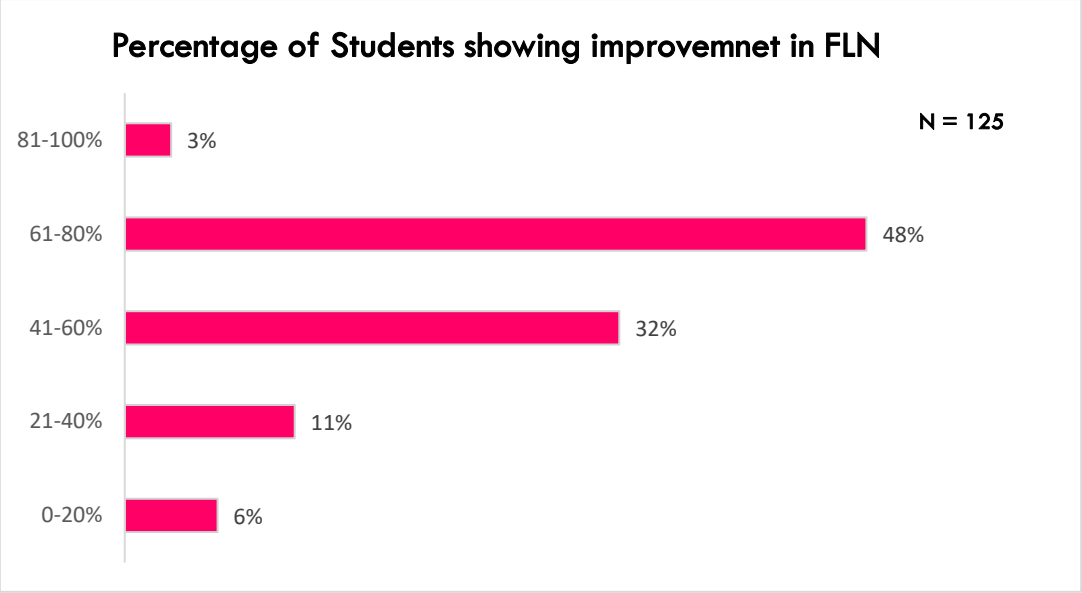

Figure 40: Percentage of students showing improvement in FLN

Key Areas of Skill Development

The program has successfully fostered a range of critical skills among students:

- Communication skills **(77%) (N=120**) emerged as the most improved, reflecting the focus on interactive methods like storytelling, role-playing, and collaborative activities.
- Problem-solving abilities **(75%)** and creativity **(72%)** have been substantly enhanced through methods such as enquiry-based and activity-based learning, encouraging students to think critically and explore innovative solutions.
- Collaboration **(64%)** and critical thinking **(43%)** were other key areas of improvement, aligning with the program's emphasis on teamwork, inquiry, and experiential learning.

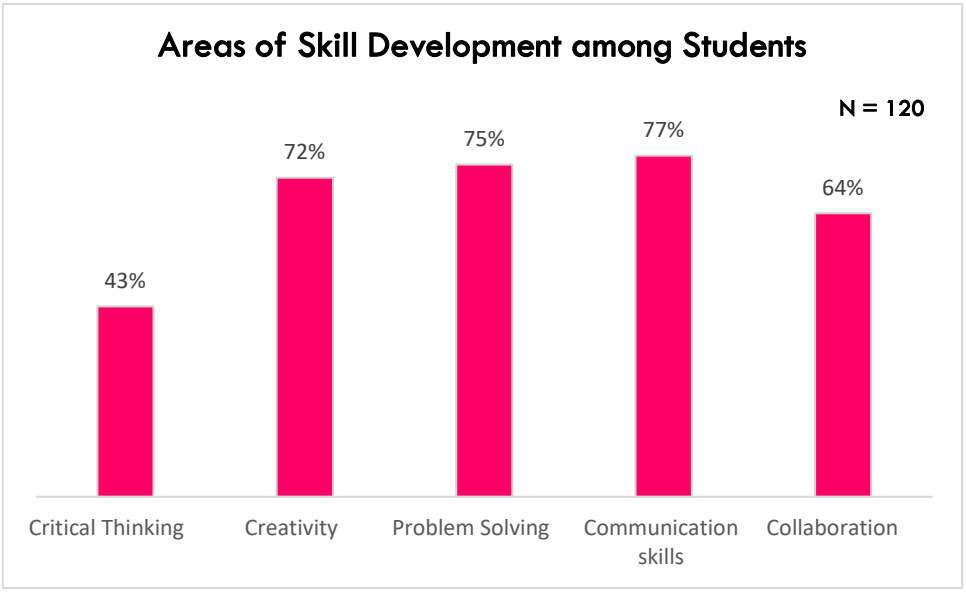

Figure 41: Areas of skill improvement among students

5.9 Methods of Assessing Learning Outcomes

Teachers employed diverse strategies to assess student learning, with **87% (N=120)** relying on observation and classroom discussions. This method aligns with interactive teaching approaches promoted by ZIIEI, allowing teachers to gauge student understanding through real-time engagement. **64%** of respondents utilized summative assessments, reflecting a focus on measuring cumulative learning at the end of instructional periods.

Formative assessments, used by **57%** of teachers, highlight a continuous evaluation approach, enabling adjustments to teaching strategies based on ongoing feedback. Diagnostic tests, employed by **45%,** were used to identify specific learning gaps and inform targeted interventions. Additionally, **36%** of teachers reported using class assignments and quizzes to assess understanding and retention. This variety of methods showcases the program's flexibility in adapting to diverse classroom needs while emphasizing both formative and summative evaluations.

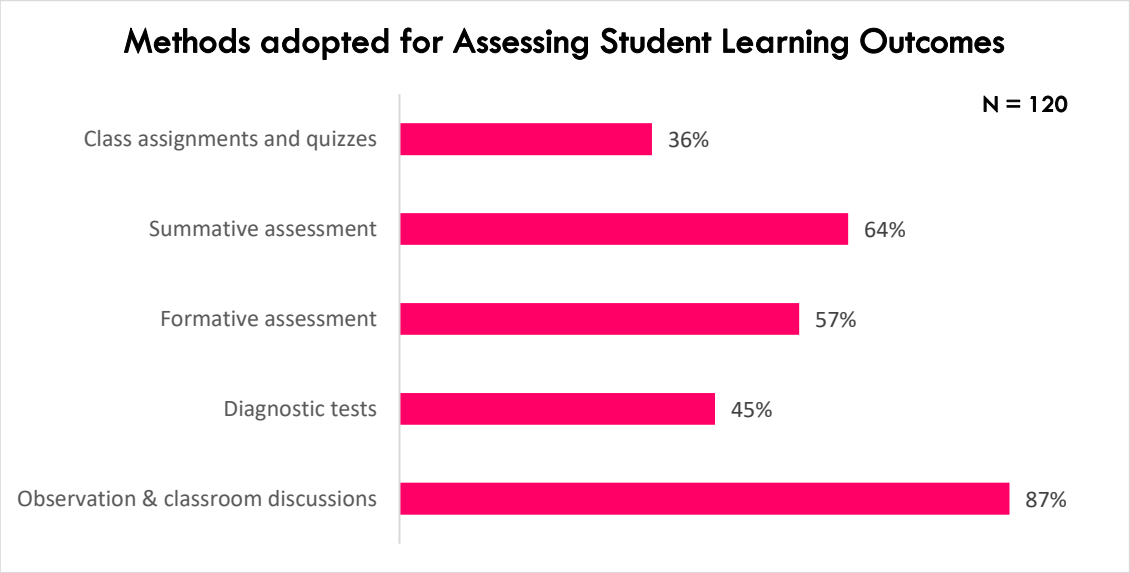

Figure 42: Methods adopted for assessing student learning outcomes

Assessments served as critical feedback loops, enabling teachers to continuously fine-tune their instructional approaches in response to student performance and needs. Following are some of the examples derived from field:

- **Monthly Assessments to Guide Instruction:** Teachers conducted regular, often monthly, quizzes and informal evaluations to gauge students' understanding of newly introduced methods. When these assessments revealed learning gaps—for instance, if students struggled with a mathematical concept after playing number games—teachers adapted their lesson plans. They introduced alternative teaching aids, slowed down the instructional pace, or added more hands-on activities to reinforce the concept. This feedback loop ensured that subsequent lessons were better aligned with students' current comprehension levels.
- **Personalized Learning Plans Based on Assessment Results:** Some teachers created personalized learning plans after reviewing test scores and observing student responses to project-based tasks. If a group of students consistently scored lower on certain language skills, teachers would supplement storytelling exercises with visual aids, role-play activities, or simplified reading

materials. This tailoring of the curriculum ensured that each student, especially those facing difficulties, received targeted support rather than uniform instruction.

- **Adapting TLMs and Materials After Performance Reviews:** When assessments indicated that students were not retaining concepts presented with certain Teaching-Learning Materials (TLMs), teachers modified their approach. For example, if comprehension tests showed that students were still confused after a storytelling session, the teacher might shift to more interactive strategies, like small-group discussions or flashcard-based vocabulary drills. By re-evaluating the effectiveness of each instructional tool through ongoing assessments, teachers continuously refined their methods.
- **Refining Grouping Strategies and Peer Learning Activities:** Teachers also used assessment insights to improve their classroom management and grouping techniques. If post-activity quizzes suggested that students in certain groups were not making progress, teachers rearranged groups or assigned new peer mentors. This data-driven regrouping ensured that each student benefited from the collective strengths of their classmates, addressing learning gaps more effectively.

In essence, continuous assessments, ranging from brief quizzes and worksheets to project presentations and class discussions, served as critical checkpoints. By examining student performance at these junctures, teachers were able to identify what worked, pinpoint where students struggled, and adjust their instructional strategies accordingly. This responsive, iterative process helped maintain a cycle of improvement in teaching and learning.

5.9.1 Effectiveness of Online Assessment Tools

The online assessment tools provided by ZIIEI have been well-received, with **50%** of teachers rating them as "highly effective" in tracking progress and providing actionable feedback for both students and teachers. These tools have been instrumental in aligning with modern pedagogical requirements, enabling efficient monitoring of student outcomes. Another **34%** found the tools "somewhat useful," highlighting their utility but suggesting potential for improvements, such as additional features or customization for specific classroom needs.

A small proportion (**3%**) noted that the tools were of limited use, primarily for quick checks rather than comprehensive insights, while **6%** found them "not effective," indicating that challenges such as accessibility, technical issues, or lack of training might hinder their utility in certain contexts. The remaining **7%** provided other responses, reflecting unique classroom dynamics or preferences for alternative assessment methods.

5.10 Teachers' Overall Perception of Project ZIIEI

The ZIIEI project has demonstrated significant relevance and effectiveness in addressing teaching needs, improving pedagogical practices, and empowering teachers with innovative methods. Teacher feedback highlights its impact across key aspects, including relevance to classroom teaching, sufficiency of support, overall effectiveness, timeliness, quality, and confidence in applying learnings.

5.11 Relevance to Classroom Teaching

The project was deemed highly relevant by most respondents, with **33%** rating it as "extremely relevant" and **49%** as "very relevant," amounting to a combined **82%** finding strong alignment with their teaching needs. This reflects the program's success in introducing strategies and resources that resonate with the requirements of modern classrooms. A smaller portion (**12%**) considered it "moderately relevant," while **6%** rated it as "slightly relevant." Only **1%** found the project "not relevant," showcasing its broad applicability to diverse teaching environments.

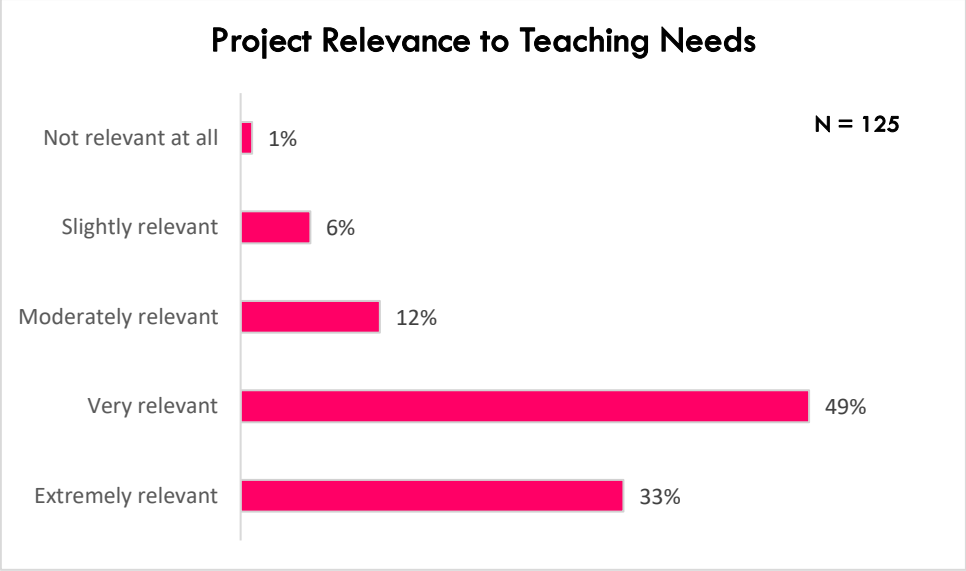

Figure 43: Project relevance to teaching needs

Following are some of the key areas that emerged as the most relevant aspects of the project, according to the teachers, based on the qualitative insights drawn from the semi-structured interviews conducted with them.:

- **Experiential and Project Based Teaching Methods**: Teachers repeatedly expressed appreciation for hands on, experiential methods such as storytelling, role playing, nature walks, and project based tasks. They found these approaches made lessons more meaningful, interactive, and easier for students to understand. Activities like math puzzles, clay modeling, and bead based games were especially valued for turning abstract concepts into tangible learning experiences.

- **Teaching Learning Materials TLMs and Low Cost Aids**: Teachers welcomed the provision of Teaching Learning Materials TLMs including kits, flashcards, and booklets when consistently available. They also valued guidance on creating low cost or zero investment teaching aids from locally available resources. This enabled them to innovate even in resource constrained environments, ensuring that they could adapt materials to their students needs.

- **Continuous and Context Specific Training Opportunities:** Professional development sessions, especially those offered through ZIIEI workshops, were highly valued for their relevance and practical focus. Teachers benefited from learning modern pedagogical strategies, digital integration techniques, and ways to manage diverse classrooms. These trainings helped them refine their methods, stay updated with current educational practices, and gain confidence in experimenting with new teaching styles.

- **Flexible Curriculum Delivery and Adaptive Planning**: Teachers appreciated the programs emphasis on flexible lesson planning. Being able to adjust lessons based on student learning speeds, comprehension levels, and interests allowed them to better retain students attention and reinforce key concepts. This adaptability enabled teachers to move beyond rigid textbook schedules and instead meet learners where they were.

- **Integrating Local Languages and Cultural Contexts**: Incorporating local culture and regional languages such as storytelling with folk tales or using familiar contexts in examples helped

bridge language barriers and spark student interest. Teachers found this approach valuable in making lessons relatable, increasing student engagement, and improving overall comprehension.

- **Initial ICT Integration and Digital Tools Where Available:** Although ICT resources were limited, when teachers did have access through training on using projectors, tablets, or basic educational apps they recognized the potential of digital tools to enhance lessons. They valued opportunities to develop digital literacy and use technology to enrich traditional teaching methods.

5.11 Sufficiency in Addressing Teaching Needs

The program was rated "completely sufficient" by **22%** of teachers and "mostly sufficient" by **52%,** demonstrating that the intervention largely met the educators' expectations. Another **21%** found it "moderately sufficient," reflecting some room for additional resources or contextual customization. Only **6%** rated it as "slightly sufficient," and **1%** felt it was "not sufficient at all." These results indicate that while the project's resources and training meet most teachers' needs, targeted enhancements could ensure more comprehensive support.

5.12 Overall Effectiveness

The project's overall effectiveness was rated as "highly effective" by **25%** and "effective" by **56%,** indicating a positive impact on teaching practices and outcomes. **14%** found it "moderately effective," while **6%** rated it as either "slightly effective" or "not effective at all." These findings highlight the program's success in achieving its objectives for the majority of participants, though ongoing refinements could address specific gaps.

Teachers noted a range of positive outcomes and improvements in their classrooms, reflecting the overall effectiveness of the project's innovative teaching methods. Several key areas of improvement stand out:

- **Increased Student Engagement**: By incorporating storytelling, role-play, project-based tasks, and game-based activities, teachers observed students taking a more active role in their learning. Instead of passively listening, students participated eagerly in discussions, collaborated on group tasks, and demonstrated heightened curiosity. This interactive, hands-on approach made classes more dynamic, prompting students to come forward with questions and ideas rather than remain silent or disinterested.

- **Enhanced Academic Performance and Conceptual Understanding**: Many teachers reported that experiential learning strategies led to better comprehension and retention of subject matter. For example, math concepts introduced through puzzles, bead-based exercises, or clay modeling helped students visualize abstract ideas and solve problems more confidently. These strategies resulted in improved test scores, stronger foundational skills in literacy and numeracy, and a clearer understanding of scientific and environmental concepts, outcomes that teachers directly linked to the shift in instructional methods.

- **Positive Behavioral and Social Skills Development**: Teachers witnessed notable improvements in students' behavior, teamwork, and peer interaction. By engaging in group projects, environmental explorations, and creative assignments, students developed stronger collaboration and communication skills. They learned to support their peers, for instance, high-performing students helping those who struggled and to take on leadership roles within the classroom. This not only improved the learning environment but also cultivated qualities like responsibility, empathy, and mutual respect.

- **Refined Teaching Methodologies and Increased Teacher Confidence:** On a personal level, teachers found that regular training sessions and exposure to innovative pedagogical strategies enhanced their confidence and teaching repertoire. They learned to use flexible lesson plans, low-cost teaching aids, and even basic digital tools (where available) to cater to different learning levels. Adjusting instruction based on ongoing assessments allowed teachers to respond more effectively to diverse student needs. Consequently, classrooms became more inclusive, adaptive, and reflective of best practices in education.

5.12.1 Timeliness of Intervention

Most teachers appreciated the timeliness of the intervention, with **57%** rating it as "timely" and **10%** as "very timely." A further **29%** considered it "moderately timely," suggesting that while the program was generally well-executed, some delays may have occurred in specific cases. Only **5%** felt it was "slightly timely" or "not timely at all," indicating minimal logistical challenges in delivery.

5.12.2 Overall Quality of the Project

The quality of the intervention was rated positively, with **24%** of respondents describing it as "excellent" and **56%** as "good," totaling **80%** expressing satisfaction with the program's implementation. Another **18%** found the quality "average," while only **3%** rated it as "below average" or "poor." These results reflect the program's high standards in delivering impactful resources and training.

5.12.3 Confidence in Applying Learnings

Teacher confidence in applying the project's learnings was remarkably high, with **44%** feeling "very confident" and **47%** "confident." This combined **91%** indicates the program's success in equipping teachers with actionable skills and strategies. A smaller segment (**5%**) felt "moderately confident," while only **4%** reported low confidence levels. These results highlight the program's strong focus on practical, classroom-applicable training.

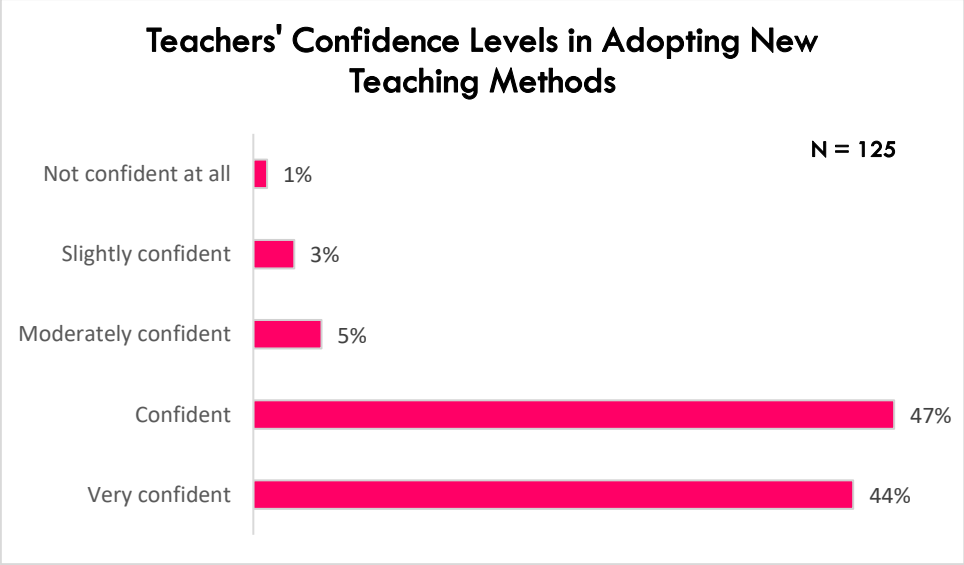

Figure 44: Teachers' confidence level in adopting new teaching methods

5.12.4 Alignment with Existing Policies and Systems

The ZIIEI intervention has been well-aligned with existing educational policies and systems, as **26%** of teachers rated it as "very well aligned" and **61%** as "aligned," indicating strong coherence with national

and local education frameworks such as the National Education Policy (NEP) 2020. This combined **87%** reflects the program's ability to integrate seamlessly into the prevailing educational structure. A smaller segment (**13%**) expressed neutrality, suggesting that while they see some alignment, its impact may not be fully realized in their contexts. Only **1%** found the intervention "not aligned," showcasing its strong relevance and adaptability to policy objectives.

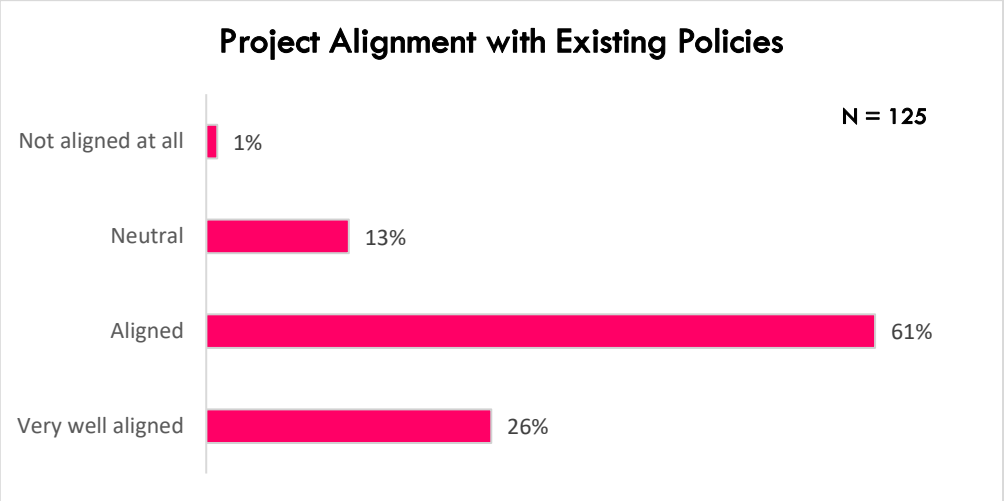

Figure 45: Project alignment with existing educational policies and systems

5.12.5 Support from Stakeholders for Implementation

The level of support received from local, community, government, non-government, and other stakeholders varied significantly. While **21%** of teachers reported "significant support" and **37%** noted "some support," totaling **58%** with positive experiences, a notable **26%** indicated "no support at all." This lack of assistance highlights potential gaps in engagement or awareness among stakeholders in certain areas. Additionally, **12%** of respondents maintained a neutral stance, and **4%** mentioned "limited support," reflecting varying levels of involvement from different stakeholders. This variability underscores the need for stronger collaboration and advocacy to ensure comprehensive support across all regions.

5.13 Immediate Outcomes and Positive Changes

The program has brought about immediate positive changes in classroom practices and student engagement. **59%** of teachers observed a "noticeable difference," while **17%** reported a "significant difference," together comprising **76%** of respondents who witnessed tangible improvements. These outcomes likely stem from the adoption of interactive and student-centered teaching methods. A smaller proportion (**11%**) expressed neutrality, suggesting that while improvements are evident, they may not be as pronounced in some contexts. **10%** reported only "minor differences," and **2%** observed "no difference," highlighting areas where further support may be needed to enhance implementation and outcomes.

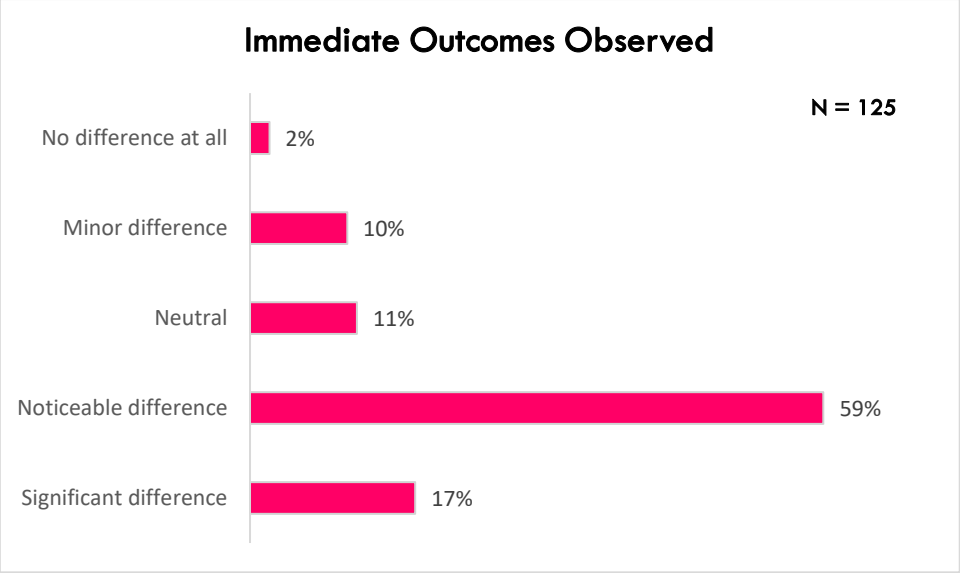

Figure 46: Immediate outcomes & positive change observed in classroom practices and student engagement

According to Qualitative insights, in the initial weeks of implementing experiential methods, teachers noticed immediate improvements in student engagement and participation. For example, when a teacher introduced a simple math puzzle using locally sourced beads, students who were once reluctant to speak up began racing to demonstrate their problem-solving skills at the blackboard. During storytelling activities, learners eagerly took turns narrating parts of a folk tale, adding their own twists and insights.

A teacher who organized a short nature walk for an environmental lesson observed students enthusiastically pointing out different plants and insects, asking questions, and sharing observations with their peers. This newfound energy and involvement were also reflected in better attendance, as students looked forward to interactive lessons and active roles in their own learning process.

These short-term changes were easy for teachers to identify, as the classroom atmosphere transformed from a teacher-centered environment into a more open, dialogue-rich space where learners confidently experimented with new ideas. The immediate outcomes included better attendance, livelier discussions, and a noticeable reduction in off-task behavior, all of which motivated teachers to continue refining their methods.

5.14 Long-Term Positive Impacts

In terms of the intervention's long-term effects, **62%** of teachers noted "significant effects," and **18%** described the impacts as "very significant," reflecting the program's success in generating meaningful and enduring changes. A smaller segment (**10%**) expressed neutrality, while **9%** reported "minor effects," and **2%** observed "no effects at all." These results suggest that while the majority of teachers perceive substantial long-term benefits, there are still pockets where the program's impacts could be amplified through sustained support and localized adaptations.

Qualitative insights show that over the course of several months or an entire academic year, teachers began to see deeper, more sustained transformations. For instance, math concepts introduced through hands-on puzzles and bead-based activities, once a novelty, became second nature to students who could now tackle more complex problems with less guidance.

A class that started off using simple storytelling to improve language skills eventually evolved into students writing and illustrating their own short books, conducting peer editing sessions, and presenting their work to the class. In another example, an initial nature walk might lead, over time, to a student-

organized recycling campaign or a small gardening project in the schoolyard, reflecting a stronger sense of environmental stewardship and problem-solving capacity.

Socially, teachers noted that students became more comfortable helping each other, with once-shy learners taking on leadership roles during group science experiments or collaborative art projects. As these improvements took root, teachers needed fewer prompts to maintain momentum. Students began independently exploring topics, engaging in classroom discussions without hesitation, and consistently applying critical thinking skills learned through these interactive methods. Over the long term, the classroom environment matured into a genuinely learner-centered space, where meaningful collaboration, sustained curiosity, and higher-order thinking thrived.

5.15 Sustainability of Project Activities

The program is widely seen as sustainable, with **58%** of teachers rating its activities and impacts as "sustainable" and **11%** as "highly sustainable." This indicates confidence in the program's ability to maintain its benefits over time. Another **24%** considered it "moderately sustainable," reflecting a belief in its potential with some continued effort or support. A smaller proportion (**6%**) rated it as "slightly sustainable" or "not sustainable at all," highlighting concerns about resource dependency or structural limitations in certain areas.

Figure 47: Sustainability of project activities

According to the qualitative insights, teachers did expressed concerns about sustaining the positive changes introduced by the program over the long term. They worried that without ongoing training and skill-refreshing workshops, the innovative teaching methods they had embraced might gradually revert to more traditional, less effective practices. Ensuring a steady supply of Teaching-Learning Materials and ICT resources also weighed on their minds, as irregular distribution could undermine the consistent use of experiential learning strategies.

Policy and administrative challenges added to these sustainability concerns. Teachers feared that delayed fund allocation, inconsistent policy implementation, and weak monitoring systems could erode the initial gains. They also stressed the importance of maintaining partnerships with NGOs and the community, cautioning that one-time support or sporadic volunteer efforts would not be enough to preserve the program's successes. In their view, continuous effort, reliable resources, policy consistency, and lasting community engagement were all critical to ensuring that the improvements they had seen would endure.

6. Strengths and Challenges

6.1 Strengths

1. Activity-Based Learning (ABL) and Student Engagement

- **Hands-on Learning with Local Materials**: The ZIIEI program's core strength lies in its emphasis on **activity-based learning (ABL)**. Teachers have observed that by integrating **zero-investment materials** (such as waste materials, local resources, or items easily found in students' environments), students are more engaged and excited about learning. The hands-on nature of activities not only helps students connect theory to practice but also encourages them to actively participate in their learning journey actively, thereby fostering **intrinsic motivation**. This approach has been praised for making learning more **tangible** and **relevant** to students' daily lives.
- **Increased Participation and Collaboration**: Teachers reported that ABL encourages **greater student participation**, especially among those who might traditionally be disengaged. Students are more inclined to ask questions, share ideas, and work collaboratively in groups, which enhances **social skills** and **teamwork**. This level of interaction also leads to **greater peer learning**, where students learn from one another, often explaining concepts in a manner that resonates with their peers.
- **Creativity and Critical Thinking**: The integration of local and waste materials pushes students to be more **creative** in their learning. For instance, they might craft models or create tools for problem-solving from materials they collect. This not only aids academic understanding but also nurtures students' **critical thinking** and **innovative thinking**. It helps them approach problems from different perspectives, which is essential for preparing them for real-world challenges.

2. Positive Impact on Student Outcomes

- **Improved Academic Performance**: Teachers noted that the shift toward **learner-centric, activity-based learning** contributed to measurable improvements in **student academic performance**. Particularly, students who had previously struggled with traditional methods of teaching began to demonstrate better understanding and retention of concepts. This suggests that interactive, hands-on activities may be more effective for some learners than conventional, lecture-based instruction.
- **Holistic Student Development**: Beyond academics, ZIIEI's approach has shown positive results in students' **social-emotional development**. Teachers observed that students developed greater **self-confidence**, **social responsibility**, and **self-regulation**. Through collaborative activities, students learned to negotiate, compromise, and work in teams, which are all crucial life skills. This suggests that ZIIEI not only focuses on academic success but also helps develop well-rounded individuals with the skills to thrive in society.
- **Behavioral Changes**: Several teachers noted **behavioral improvements**, such as increased **classroom participation**, **responsibility**, and **positive peer interactions**. Students exhibited a sense of ownership over their learning, which led to better classroom dynamics and fewer behavioral issues.

3. Alignment with National Education Policy (NEP) 2020

- **Holistic Development and Critical Thinking**: The ZIIEI program aligns strongly with the core principles of **NEP 2020**, particularly in promoting **holistic education**, **critical thinking**, and the development of 21st-century skills. The **learner-centered approach** directly supports the NEP's call for an educational system that focuses on the **overall development** of students, encouraging

not just academic learning, but also the development of practical, **problem-solving skills** and **creative thinking**.

- **Inclusive Education**: The program's use of **local and low-cost resources** helps bridge the gap in resource-poor schools, aligning with the NEP's emphasis on **inclusive education**. This model supports schools in rural or underserved areas where access to traditional educational resources may be limited. Teachers appreciated how the program's flexibility allows for the **adaptation of teaching methods** to cater to diverse learning environments and student needs.

4. Development of Critical Life Skills

- **Communication Skills**: Many teachers observed improvements in **students' communication** abilities, particularly through group discussions, role-playing, and collaborative projects. Shy or introverted students, in particular, gained confidence in expressing themselves. This suggests that the program helps foster a classroom environment where **all students**, regardless of their initial confidence levels, feel encouraged to speak up and participate.

- **Teamwork and Collaboration**: The group-based activities embedded within ZIIEI naturally promote **teamwork** and **collaboration**. Teachers noted that students worked well in groups, learning how to collaborate effectively, share ideas, and listen to others. These are essential life skills that will help students succeed not only in school but also in their future careers and personal lives.

6.2 Challenges and Areas for Improvement

1. Resource Constraints and Material Accessibility

- **Limited Access to Materials**: Although ZIIEI is designed to use **low-cost, local materials**, teachers reported that consistent access to these materials can be a challenge. In some schools, teachers had to get **creative** and adapt, often using **waste materials**, but this did not always allow for the full scope of activities the program intended. A lack of sufficient resources, particularly in **underfunded schools**, can hinder the program's impact and make it harder for teachers to implement certain activities.

- **Issues with Material Design**: Some teachers expressed concerns with the **design of ZIIEI materials**, such as **small font sizes** and unclear visuals, which can make materials difficult to use, especially for younger or less-skilled students. To address this, **revisions** to the material design—such as **larger text, simplified visuals**, and **more diverse formats** (e.g., visual aids, interactive PDFs)—would improve the accessibility of materials and enhance engagement for all students.

2. Parental Engagement and Community Support

- **Lack of Active Parental Involvement**: Despite positive feedback from parents, some teachers noted that **parental involvement** in the learning process remains limited. Parents' understanding and active participation in reinforcing learning at home could greatly enhance the program's effectiveness. Teachers recommended organizing **parent workshops** or **community meetings** to ensure that parents are not only aware of but also actively involved in their children's education.

- **External Support for Resource-poor Schools**: While many teachers expressed confidence that the program could be sustained in the long run, some acknowledged that **schools in resource-poor areas** may still require external **financial support** and **professional development resources**. Teachers called for continued investment from the **government** and **NGOs** to maintain the program's impact and scale it to more schools, particularly in rural or underprivileged areas.

3. Teacher Training and Professional Development

- **Ongoing Training Needs:** Although initial training has been valuable, many teachers emphasized the need for **regular, targeted professional development** to stay updated with new methodologies and tools. Teachers suggested that **refresher courses** should be held periodically to keep educators informed about best practices and any updates to the ZIIEI program. Training should also be **more grade-specific,** addressing the unique needs of different age groups.

7. Process Mapping of ZIIEI

The ZIIEI process, which centres on selecting ideas from teachers and providing ongoing training to refine and enhance these ideas, is outlined in the following figure. ZIIEI works in close collaboration with the state government to organize and facilitate training programs for teachers and education officers. These programs are designed not only to develop teachers' skills but also to sensitize education officers about the importance of supporting teachers and their innovations.

Teacher training workshops served as a key motivator, encouraging educators to document their innovative ideas and submit them for consideration. This process of teacher engagement initiates the capturing of innovative ideas through a structured idea-generation process. Teachers are encouraged to think creatively and share solutions that address specific challenges they face in the classroom.

Once submitted, these ideas go through a rigorous screening process at multiple levels. Each idea is carefully reviewed, refined, and enhanced, ensuring that it evolves into an innovative concept that can be effectively applied in diverse educational contexts. The goal is to ensure that the ideas are adaptable and can be easily contextualized by other teachers to meet the needs of different learning environments.

After the ideas are refined, the selected innovations are then transformed into various forms of educational content. This includes the development of new curriculum materials, as well as digital content that can be utilized by teachers across different regions. Through this process, ZIIEI helps to create a dynamic and evolving pool of resources that are directly informed by the needs and experiences of educators, ultimately improving the quality of education.

The below mentioned process flow is based on understanding of relationships / interactions across various stakeholders:

Step	Action	Objective	Outcome
1. MoU Signing and Initial Setup	MoU signed between ZIIEI and state governments to formalize the partnership and establish terms.	To align ZIIEI and state governments for smooth execution and monitoring.	A formal agreement outlining roles, responsibilities, and program implementation structure.
2. Top-Down Implementation Approach	Communication flows from state level to district and then to schools.	Ensure structured communication and execution across all levels.	Streamlined implementation where state, district, and school levels are aligned for effective program delivery.
3. Selection of Schools	10,000 schools selected based on eagerness, with final list shared and approved by the state government.	To choose motivated schools ready for program implementation.	A final list of 10,000 schools approved by the state government to participate in the program.

4. Teacher Training	State-level training sessions for teachers, with communication sent through state governments.	Equip teachers with necessary skills and knowledge for effective implementation.	Teachers trained in innovative teaching methods and program execution.
5. Communication to Teachers	Communication regarding training, schedules, and program details is sent to teachers via state governments.	Ensure all teachers are informed and prepared for the training sessions.	Teachers are well-informed about training schedules, content, and expectations, ensuring smooth participation.
6. NGO Engagement & School Visits	NGO team visits schools daily to gather feedback from teachers and monitor progress.	Continuously monitor program progress, identify challenges, and gather input.	Real-time feedback collected to make timely adjustments to the program.
7. Feedback Collection from Teachers	Daily feedback is gathered from teachers through informal interactions and surveys during school visits.	Monitor teacher satisfaction, identify issues, and measure program impact.	Immediate adjustments are made to address concerns, enhancing teacher engagement and effectiveness.
8. Quarterly Feedback to HDFC	Teachers provide quarterly feedback to HDFC through interactions with the HDFC team.	Gather insights on program effectiveness and teacher needs.	Comprehensive understanding of program impact and areas needing improvement.
9. Quarterly Sri Aurobindo Society-HDFC Meetings	Sri Aurobindo Society meet HDFC quarterly to review reports, share feedback, and recommend program improvements.	Maintain collaboration and ensure ongoing alignment between stakeholders.	Regular evaluations lead to the refinement and adaptation of the program based on feedback.
10. Data Collection and Reporting	Continuous data collection on teacher participation, student performance, and program impact.	To gather and analyze data for comprehensive reporting and decision-making.	Data-driven insights to assess the effectiveness and areas for improvement in the program.
11. Continuous Program Improvement	Feedback from teachers, NGO visits, and HDFC meetings is used to make ongoing improvements to training content, methods, and resources.	Adapt the program to meet teachers' evolving needs.	An improved, responsive program that addresses the real-time needs of teachers and schools.
12. Scaling Innovations	Successful ideas and innovations from teachers were scaled to other schools, creating a larger impact.	Scale successful innovations to maximize the program's reach and impact.	Expanded program with a broader set of schools benefiting from shared innovations.

13. Final Adjustments and Scaling	Program content is refined and scaled to other schools, expanding successful innovations.	Finalize the program for broader implementation and impact.	A polished and scalable program that can be implemented widely with high effectiveness.
14. Monitoring and Evaluation	The program undergoes regular monitoring and evaluation to assess long-term outcomes and sustainability.	To ensure the program remains relevant and effective over time.	Long-term sustainability of the program with continued improvements based on evaluation data.
15. Knowledge Sharing and Best Practices	Successful strategies and best practices are shared among teachers through workshops, online platforms, and forums.	Encourage collaboration and sharing of successful teaching practices.	Teachers have access to a wider network of ideas and methods, fostering a culture of innovation and improvement.

8. Key Learnings and Way forward

The Zero Investment Innovations for Education Initiatives (ZIIEI) has made significant strides in transforming education through the integration of innovative teaching methods. Building on these achievements, the following detailed strategies are recommended to guide the way forward for similar projects, ensuring their long-term success and impact.

1. **Enhance Teacher Training and Support:** A key learning from the ZIIEI program is that teachers who received sufficient training were able to effectively implement innovative teaching methods, improving both engagement and learning outcomes. It is essential to prioritize comprehensive teacher training programs that include initial workshops and continuous professional development. This should involve regular, specialized training sessions, peer learning groups, and mentorship, ensuring teachers are empowered to adapt to new educational practices and effectively engage students.

2. **Strengthen the Integration of Arts and Sports**: Integrating arts and sports into the curriculum fostered creativity, critical thinking, and emotional intelligence among students. These activities not only engaged students but also helped in developing teamwork, leadership, and communication skills. The inclusion of arts and sports should be further emphasized within educational programs, as they significantly contribute to holistic student development. By partnering with local artists, performers, and sports organizations, schools can enhance the impact of these subjects and provide students with enriching experiences beyond traditional academic activities.

3. **Expand Use of Technology and Digital Tools:** Technology and digital tools, especially for assessments, played a crucial role in tracking student progress and enhancing learning outcomes. However, challenges in access to infrastructure and inadequate teacher training in digital tools were noted. Ensuring better access to digital infrastructure and providing both teachers and students with adequate training in the use of educational technology is critical. This can be achieved through investment in tools that support learning and ongoing training that builds digital literacy among both educators and students.

4. **Foster Greater Community and Parental Involvement:** The ZIIEI program demonstrated the value of involving families and communities in the learning process. Family-based activities created

stronger connections between home and school, helping students gain additional support and reinforcing learning. Schools should actively involve parents and communities in educational activities through workshops, events, and regular communication. Establishing partnerships with families enhances the learning experience, offering students a more supportive and well-rounded educational environment.

5. **Emphasize Data-Driven Decision Making:** Data-driven decision-making proved effective in guiding instructional methods and monitoring student progress. Teachers who regularly assessed students' performance and adapted their strategies accordingly saw better results in engagement and outcomes. Recommendation: It is essential to implement systems for continuous assessment and feedback. This will enable educators to track student progress in real-time and make data-informed decisions that ensure timely intervention and better learning outcomes.