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Schools Infrastructure Development Program

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IMPACT ASSESSMENT STUDY REPORT

IMPACT
Partners in Social Development

Schools Infrastructure Development Program

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Project ID	P0581

Study Team

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Abbreviations

AIF	American India Foundation
AV	Audio-Video
CSR	Corporate Social Responsibility
FDP	Focussed Development Project
MI	Monitoring and Impact
NGO	Non-Government Organization
SIDP	School Infrastructure Development Program
SS	Smart Schools
TLM	Teaching Learning Materials
WASH	Water, Sanitation and Health

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Executive Summary

1. Background

HDFC Parivartan provided a grant to the American India Foundation (AIF) to implement a project in 500 schools across five states of India from January 2022 to July 2023. The project primarily focused on developing school infrastructure at each of the 500 schools in consultation with the schools. AIF completed the project in six states covering 385 schools.

A research agency: 'Impact PSD' was assigned to undertake the third-party impact assessment study. A summary of the assessment is shared below:

Project/Impact Assessment Details	
Implementing NGO Partner	**American India Foundation**
Project Location and coverage	6 states of India and 385 schools
Project Duration	1 January 2022 – 31 July 2023
Assessment Approach and Methodology	
Study Objectives	• To assess the extent to which the project achieved its intended results. • To ascertain the perception of stakeholders and project participants on the relevance and usefulness of the project interventions. • To identify learnings from the project that can be adapted for similar projects in future.
Research Design	Mixed methods approach (Quantitative and qualitative) Quantitative – Smart classroom checklist, Interviews with Principals and Teachers Qualitative – In-depth interviews with school principals and Focus Group Discussion with students and parents
Sample Covered	Out of 385 schools covered, 40 schools were selected to get a representative sample using PPS sampling methodology

2. Respondents' Profile

Principals
- Out of 40 principals, more than two-thirds (70%) were males, and the remaining were females, revealing a notable gender disparity.
- Most principals (4 out of 5 – 83%) were between 50 and 59 years old. Only two out of five (43%) were seasoned professionals with postgraduate degrees, and almost half the principals were graduates.

- With respect to extensive teaching experience, 86% had more than 21 years of teaching experience. About 60% had their tenure at their current school for up to 10 years.
- All the principals confirmed receiving both types of hard and critical infrastructure support. However, the type of support was provided to the schools based on baseline information gathered by the implementing agency. All principals acknowledged that the HDFC Grant was crucial in improving school facilities and enhancing schools' reputations.

Teachers
- A total of 64 teachers were interviewed to obtain their views on HDFC Bank support.
- More than two-thirds of the teachers (72%) were aged between 40 and 59, 72% were men, and the remaining 28% were women.
- One-third of teachers (34%) had a postgraduate degree, and more than half (55%) were graduates. Many of them (11%) also had a professional degree (B.Ed.) that provided a strong foundation for schools.
- More than two-thirds of teachers (70%) had teaching experience of more than 11 years, and 64% of them were in the current school for up to 10 years.

Students
A total of 232 students, comprising 108 boys and 124 girls, were also contacted to gain insights into their experience and understand the impact of their teachers' techno-pedagogy. Most (65%) were from Grades 6-8, followed by 26% in Grades 9 and above

3. Key Observations and Impact

Hard Infrastructure Support

- All the schools received BaLA support, focusing on beautification and minor repairs. This support transformed the walls into informative and engaging spaces for the students. The artistic improvements were noted as visually appealing and age-appropriate, successfully capturing the students' interest. However, eight schools did not maintain the paintings.
- Of 40 schools, 32 (80%) reported enhancing their classrooms through captivating wall artwork. In these 32 schools, the vibrant wall paintings and beautification efforts remained intact, effectively enriching the educational atmosphere.
- Toilet-related support was found in 25 out of 40 schools (63%). Functional toilets were observed in 24 of these schools, all of which were actively in use. This data reflects a commendable level of usability and accessibility of sanitation facilities. Many government schools that received support did not have essential cleaning and sanitation facilities.
- All 40 schools received drinking water-related support, and 29 out of 40 schools (73%) had water filters. Of these 29, only 16 (55%) were operational at the assessment time. This situation indicates that many schools are grappling with non-functional filtration systems.

Critical Infrastructure Support

Smart Class
- Smart class setups were available in all 40 schools and found functional in 39 schools, except one in Arunachal Pradesh, where they have been functional since their installation. Of these 39, teachers regularly used smart class setups for different subjects.
- Eight out of 40 (20%) schools had dedicated wired internet facilities, which teachers used for their classes. Teachers in 31 out of 40 schools were using mobile hotspots for teaching, which was encouraging.

- Digital content for all classes was mostly available and functional in nearly all schools. Most schools generally had access to YouTube videos and digital content offered by state government portals for various classes and subjects aligned with the academic curriculum.
- In Karnataka, teachers noted that the implementing agency provided digital content, but not in Kannada, which created language barriers for students.
- Only three schools (8%) had power backups through an inverter and battery. All reported equipment was functional at the time of the visit.
- Electricity and equipment maintenance were the key challenges for critical infrastructure support. The schools were largely dependent on the SMCs for the upkeep of the equipment.
- The maintenance provisions were completely lacking across all 40 schools (100%), indicating a critical gap in the sustainability of HDFC Bank's support.

Library
- A total of 25 schools (63%) were provided with library support. Of these 25, the library setup was functional only in 22 schools.
- The management of these library setups is primarily entrusted to the students' representatives, who serve as members of the school's child parliament. This allows for a student-led approach to library oversight and operations.

Science Kits
- Only 22 schools out of 40 received the highly valued Science Kits, which were recognised for their significant benefit to students in all participating schools.
- These kits, neatly organized in durable plastic folders, encompassed a range of subjects and included practical exercises specifically tailored to align with the academic curriculum.

School Supplies
- In 32 schools, efforts were made to transform classrooms into vibrant and inviting learning spaces. Each classroom was thoughtfully decorated to inspire curiosity and creativity among students.
- As part of this initiative, five sets of circular wooden tables were introduced, designed to encourage collaboration and interactive learning. Small, colourful plastic chairs accompanied these tables, adding a cheerful touch to the environment.

Impact of HDFC Bank Support
- More than 85% of the principals reported a highly positive perception across multiple dimensions of student engagement and learning outcomes. Principals have noted significant improvements in students' understanding of complex topics and ability to apply knowledge in new and varied contexts. Almost all the principals (96%) believed that there had been a marked increase in students' interest in academic subjects, particularly in the fields of Science and Mathematics.
- Teachers also highlighted the positive impact of utilizing smart class setups to present digital content that complements the academic curriculum. This approach has fostered a vibrant and interactive learning environment, encouraging students to participate in discussions actively. More than 80% of teachers are more comfortable using smart class setups and feel motivated to use techno-pedagogy.
- The smart classes have intensely heightened students' interest in various subjects and areas of study. About 95% of students reported experiencing positive transformations in their learning journeys. 98% of students reported grasping topics and concepts quickly when engaged in smart classes. The integration of digital content enhances the overall educational experience. These digital contents facilitate a more interactive and dynamic approach to learning and play a crucial role in streamlining the learning process. The effectiveness of the smart classes highlights the potential benefits of incorporating technology into education to foster better learning outcomes.

- Parents also expressed their satisfaction with including smart class setups in schools and the appropriate use of support for their children. Parents claimed that the schools have gained respect, and the community prefers admitting their children to these schools.

4. Findings on the OECD Criteria

This section provides the impact assessment findings considering the OECD research framework or criteria to oversee the overall impact of the HDFC Bank-supported Project:

Overall Results	Relevance	Efficiency	Effectiveness	Impact	Sustainability
FDP	4.1	Timeliness-4.6	Current Status-4.3	4.3	4.0
		Quality of Services-4.1	Usage-4.3		

Overall Weighted Average Score – 4.2

5. Key Recommendations

Hard Infrastructure Support

- A thorough needs assessment needs to be done and aligned with the HDFC Bank policies. At times, schools also raise other concerns that do not fall into HDFC Bank's policies. This includes new construction of toilets and classrooms, and construction of drinking water stations with a full setup including water pipes, electricity connections and fittings.

- There is a need for the involvement of SMCs orientation so that the members can provide support in the maintenance of infrastructure support offered to the schools.

- Visible and vibrant branding (of HDFC Bank Parivartan) should be promoted at the school gates so that all communities and other people can understand how HDFC Bank supports their children's educational institutions.

Critical Infrastructure Support

- Teachers should be provided with training on digital content and how to use it at the school level.

- Offer access to multiple educational web portals by providing a username and password for at least 5 years. This would ensure the availability of updated digital content for a long duration. The username and password should be displayed in the Principal's Office so that all teachers can use them for teaching.

- Enhance technical support and maintenance for smart class equipment, addressing its functionality. Local district-level vendors should be identified to provide a 5-year extended warranty, and schools should receive the warranty cards. The smart class should have a displayed wall painting with the invoice number, installation date, and other necessary details, ensuring that anyone can contact the service provider with all the required information to register a complaint.

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Introduction

1.1   Background

HDFC Bank Parivartan supports focused development programs (FDPs) in multiple areas, such as education, rural development, skills development and livelihood enhancement, healthcare and hygiene, and financial literacy. In one of the focused development programs (FDPs), HDFC Bank has committed to creating 2,500 smart classrooms in partnership with non-profit organisations to promote education, where Digital Classrooms were introduced.

During the last few years, HDFC Bank supported the efforts of the government education department by providing them with need-based support to a large number of schools in many states across India. Primarily, the aim is to strengthen the school infrastructure holistically so that students are provided with an enabling environment for joyful learning, promoting enhanced participation and engagement and strengthening teacher-pupil dialogue and discussions. Ultimately, the inclusion of SMART classes and digital classrooms, along with developed infrastructure, led to improvements in students' learning outcomes and observed an increase in enrolment and attendance. The HDFC Bank's support for the schools enhances the school's reputation among the local communities, stakeholders, and teachers, who are also equipped with techno-pedagogy.

1.2   About Project

HDFC Bank provided support to the American India Foundation (AIF) to undertake the schools infrastructure development in 500 schools across five states of India. This initiative was aimed to support Govt schools by Repair work / renovation of the school building (basic), Repair work in toilets, drinking water facility, supporting basic classroom furniture in the school, library corner and Installation of a Smart class, to enhance the learning environment and play a vital role in children's holistic development.

The goal of the program was to ensure continuity of education of children in rural, remote geographies by providing access to better infrastructure facilities and technological upgrades in schools.

1.3   Key Activities Undertaken

Installation of a Smart TVs for Accessing Digital Education
Repairs/renovation of school building (basic)
Repair/renovation in toilets
Drinking water facility
Library corner
Classroom furniture (Grade 1 to 3)
Provide Science kits for Grade 6-10 students

1.4 Objective of Impact Assessment Study

HDFC Bank aimed to assess the overall effectiveness and efficiency of the project interventions and the sustainability of the outcomes achieved through the project.

IMPACT PSD Private Limited was entrusted to undertake the impact assessment of the project. The ensuing chapters of this report present the study's methodology and findings.

Study Methodology

2.1 Assessment Framework

For undertaking the impact assessment studies, the following assessment framework was proposed as the standard OECD-DAC criteria[1] which is considered as one of the gold standards in evaluation. This framework recommends adapting this framework wherever feasible and applicable:

Using this framework, the following questions/indicators were suggested to assess each program, using the six parameters stated above.

Paramters	Quantitative Indicators	Target Groups
Relevance	To what extent does the support provided by HDFC Bank meets the needs and priorities of students? [Hard Infrastructure – New Construction/Repairs of Classrooms, Boundary, Verandahs, Labs, Library, Drinking Water stations and Toilets] [Critical Infrastructure/Communication – Smart Class (Interactive Panel LED TV), Wall paintings and tables/chairs; BaLA; Lab materials, models, equipment and practical books; Reading books, storage and seating arrangements in Library; RO systems/Water Coolers; Sports goods (indoor and outdoor)	Principal and Teacher
	To what extent does the Capacity Building training support provided by HDFC Bank meets your needs and	Teachers

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[1] https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm

Paramters	Quantitative Indicators	Target Groups
	priorities? (In enhancing abilities; adopting modern/new Techno-pedagogy, etc.)	
Sufficiency	**Are the hard infrastructure and critical infrastructure support provided to school adequate and meet the requirement of the school?** (Sufficient for current strength of students; separate for boys and girls; accommodate the expected number of students; adequate number of seating, etc.)	Principal and Teacher
	Is the capacity building training provided to you is adequate and meets your requirements?	Teachers
Efficiency	How timely was the intervention support completed against your expectations/needs? [Whether completed on time as scheduled; Installation done within specified time and was used in the same academic year by the students; etc.]	Principal and Teacher
	How timely was the capacity building training was done or completed against your expectations/needs? [Could you use the support during the same academic year]	Teachers
Effectiveness (Quantitative)	• To what extent each of the specific intervention (hard and critical infrastructure) has contributed to the change in the existed situation/scenario? • What is the current working condition of the hard and critical infrastructure support in school? (Current Status) • How frequently the supported facilities (hard and critical infrastructre) are used?	Principal and Teacher
	• To what extent the capacity building training support could contribute the to change in the existed scenario? • Are you currently using the training in your job/teaching?	Teachers
Effectiveness (Qualitative)	• What improvements you have observed among students since the initiation of SMART Class? • In what ways, are the digital content helpful in teaching? • What advantages do you see of using smart class? • How effective is techno-pedagogy as compared with the conventional teaching method? • What improvements you observed among students due to STEM or Science lab use? • How did the support for Toilets help the students? • How did the support for drinking water help the students? • What are the improvements you observed due to BaLA support?	Principal and Teacher
Impact (Quantitative)	• To what extent are you satisfied with the support and/or services **(hard and critical infrastructure)** provided to your school by HDFC Bank?	Principal and Teacher

Paramters	Quantitative Indicators	Target Groups
	• To what extent are you satisfied with the capacity building training services provided to you by HDFC Bank? • How frequently the program learning and support have been used in your daily instruction?	Teachers
Impact (Qualititative)	• In what ways, does computer and digital content-based teaching generate subject specific interest in students? • Is there any impact on school attendance due to smart classes (reduction in absentism)? • Did you see improvement in students' learning outcomes due to smart class or use of digital content? • In what ways, Science Kits are helpful in teaching? • Whether there is an enhancement in school enrolment? • Have you observed decrease in school dropouts (overall)? • Have they observed decrease in school dropouts among girls students? • Have they observedIncreased improvements in understanding of the concepts and applications in different contexts?	Principal and Teacher
Sustainability (Quantitative)	Are there any measures/ways to ensure the smooth functioning of the support and/or services **(hard and critical infrastructure)** provided in the school through the project in the absence of HDFC Bank/NGO?	Principal and Teacher
	Are there measures in place to ensure continuation of the benefits of the intervention in the absence of HDFC Bank/NGO?	Teachers
Sustainability (Qualitative)	• What do you think are some of the common challenges of using smart class or digital content for school teaching? • How can these challenges be resolved?	Principal and Teacher
Convergence	Did you receive support for the given intervention from stakeholders other than HDFC Bank also in the last four years?	Principal and Teacher
	Did you receive similar or related capacity building support from stakeholders other than HDFC Bank in the last four years?	Teachers

2.2   Research Methods

A mixed-method approach was adopted for the impact assessment study, during which face-to-face interviews were conducted as part of the quantitative research, and checklists were completed in each school. For the qualitative component, focus groups were conducted with students who participated in the smart classes to discuss their experiences related to project support within the schools. Additionally, focus groups were conducted with parents, and in-depth interviews were carried out with the principals of the selected schools.

2.3   Geographic Coverage

In all, the schools infrastructure development program covered 385 schools across six states. The impact assessment was undertaken in five states, namely Assam, Arunachal Pradesh, Odisha, Karnataka and Maharashtra.

2.4   Target Groups

The following target groups were included in the impact assessment study:
(a) Principal
(b) Teachers (preferably, Science and Mathematics)
(c) Students
(d) Parents

2.5   Sample and Sampling Procedure

To obtain the optimum sample size, we calculated the statistically valid sample size with a 90% confidence interval, a total of 365 schools, a population proportion of 80% and a 10% margin of error as **39 schools**[2]. Therefore, a survey was conducted in a total of 40 sample schools across five states. The sample of 40 schools was divided across five states in proportion to the number of schools covered in each state.

Sample Selection

Selection of Schools
The schools were selected using the PPS sampling which means in proportion to the schools supported in each state. Using the PPS sampling procedure, the following sample was covered in five states:

States	Total Schools supported under the SIDP	Number of schools covered
Arunachal Pradesh	24	3
Assam	100	11
Karnataka	101	11
Maharashtra	50	5
Odisha	86	10
Uttarakhand	4	0
Total	**365**	**40**

Thus, the data collection was undertaken in five states only and Uttarakhand was not selected.

Selection of Target Groups
A total of 5 students were selected randomly in each school for the qualitative discussions. For the survey interviews, two teachers (one Science and one maths teacher) and one Principal from each of the selected schools in each district in the state were covered.

For students, we conducted one small group discussion (SGDs) in each school with five randomly selected students. For other stakeholders, we also conducted SGDs with parents and in-depth interviews with principlas in a few selected schools using separate qualitative discussion guides.

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[2]   http://www.raosoft.com/samplesize.html

2.6   Sample Coverage

The final sample covered for the assessment is mentioned in the following table:

Target Groups	Proposed Sample Coverage					
	Arunachal Pradesh	Assam	Karnataka	Maharashtra	Odisha	Total
Schools	3	11	11	5	10	40
Quantitative						
Verficiation Checklists	3	11	11	5	10	40
Quantitative Interviews						
Principals	3	11	11	5	10	40
Teachers	4*	22	11*	7*	20	64
Qualitative Discussions						
Students (SGDs)	3	11	11	5	10	40
Number of Students	13	63	66	30	60	232
Parents (SGD)	1	3	4	0	2	10
Principals (IDIs)	1	5	3	5	2	10

o   In Maharashtra and Arunachal Pradesh, there was only one teacher in the selected schools other than principals.
o   In Karnataka, all schools were upper primary schools where only one teacher was available in addition to the principals.

2.7   Study Tools

The quantitative data collection was undertaken on a customized application in the Survey CTO platform designed by the HDFC Bank MI team. The following tools were developed for collecting data:

- Verification **Checklist** for Assessment of **Smart Classrooms**

- **FGD Discussion Guide** for the **students** and **parents**, which was semi-structured in nature

- Qualitative **in-depth interview discussion guides** for **Principals**

All the developed tools were shared for review and were finalised in association with the HDFC MI team. The tools were duly translated into Hindi for the data collection.

2.8   Training of Data Collection Teams

Multiple trainings for the data collection teams were conducted for different states. For Assam and Arunachal Pradesh, physical training was organized at Dibrugarh; training for the Karnataka team was conducted at Shivamogga and training for the Odisha team at Rayagada. All the trainings were of 1-day duration, and all the team members were experienced in social sector surveys and other impact assessments of the smart schools project funded by HDFC Bank. Senior researchers from IMPACT facilitated the training to ensure the quality of the training. We sincerely acknowledge the support received from the HDFC Bank CSR MI team representatives, physically and virtually, in all the training.

2.9   Team Deployment

One trained investigator was sent to each of the 40 sample schools, and one school was completed on a daily basis. A total of 19 investigators were deployed for the data collection in five states. Data collection was conducted in different states based on the dates provided by the schools in multiple slots. Additionally, five coordinators were deployed to supervise, undertake quality checks and

facilitate the discussions. The coordinators served as the link between the team and the researchers. IMPACT researcher supervised the data collection and provided general support.

2.10 Survey Implementation

The data collection process followed by the teams is described as follows:

- A trained investigator was deployed to visit the selected sample school for the assessment.
- The team member reached to the selected school with prior appointments coordinated by the AIF team in each of the five states.
- A team member completed the data collection in one day, covering the qualitative and quantitive interviews and physical verification of the digital infrastructure support.
- Initially, the principals were contacted and informed about the purpose of the survey, and informed consent was obtained from them.
- Principals were interviewed and then teachers teaching Science and Maths subjects were interviewed.
- Later, physical verification was undertaken, which was facilitated by the teachers and/or principals to provide details of the smart class support and its status.
- In the end, the teachers were requested to allow and interact with the students who had undergone sessions in the smart class, and information was gathered in mini-groups without disturbing the classes. Additionally, written consent was obtained from the principals for conducting the discussions with students.
- On the assessment day, in-depth interviews with principals and small group discussions with parents were conducted in some schools.
- Before the return, the principals and teachers were duly acknowledged for their coordination and support offered for the impact assessment study.

2.11 Data Analysis and Report Writing

Considering the project indicators and analysis requirements, a detailed Data Analysis Plan and Content Analysis Guide were developed to obtain the results and outcomes. The report incorporated the analysis of data received from the schools. Additionally, it included a separate chapter on findings obtained through the content analysis of in-depth discussions with the respondents. Senior management was involved in writing the report.

Scoring Analysis as Basis of OECD Evaluation

The assessment of HDFC's support to schools follows the OECD framework. The data, primarily collected on a Likert scale (1-5), was analyzed based on the range from highest (5 marks) to lowest (1 mark). For the support category under Critical/Communication Infrastructure, weighted scores were computed. The mean scores were then calculated to determine the overall status, aligned with the OECD framework, providing a clear understanding of the support levels.

Here's a step-by-step breakdown of how the analysis of HDFC's support to schools was conducted using the OECD framework:

1. **Data Collection**
   - Data was gathered using a **Likert scale** (1–5), where:
     - **5** = Highest support/relevance/adequacy/sufficiency/etc.
     - **1** = Lowest support/relevance/adequacy/sufficiency/etc.

- o Each school's response was recorded for various support categories (e.g., Hard Infrastructure, Critical Infrastructure, Teacher Capacity Building, and SMC Development).

2. **Weighted Scores Calculation**
   - o For each support, responses were multiplied by their respective Likert score.
   - o Formula: $\text{Weighted Score} = \sum (\text{Response Count for Score} \times \text{Score Value})$

3. **Weighted Mean Score Calculation**
   - o The mean score was calculated to assess the overall status of support.
   - o Formula: $\text{Mean Score} = \frac{\text{Weighted Score}}{\text{Total Responses}}$

4. **Overall Status Interpretation (OECD Framework)**
   - o The mean score for each category was aligned with the OECD framework to assess the extent of support:

Score Range	Likert Score	Category	Description
More than 0.90 (90%)	More than 4.5	Excellent	Exception Performance; Fully meets or exceeds all expectations for the parameter
0.70 (70%) to 0.9 (90%)	3.5 to 4.5	Good	Adequate Performance; Meets some expectations but requires improvement
0.50 (50%) to 0.69 (69%)	2.5 to 3.5	Needs Improvement	Below Average Performance; Significant gaps in meeting expectations
Less Than 0.50 (50%)	Less Than 2.5	Poor	

2.12 Challenges Faced

- In Arunachal Pradesh, there were holidays in the schools, and students were unavailable. Even teachers were not available due to holidays.

- In Maharashtra, the data collection was extended by a day due to hilly terrain and hard-to-reach areas. Moreover, most schools had only two staff members—A principal and one teacher.

- In Karnataka, all the schools covered under the support were upper primary schools, with only a teacher who conducted smart classes for Grades 6 and 7. The remaining teachers were primary teachers or contractual teachers.

Current Status of the Equipment

This chapter provides a comprehensive overview of the assessment findings related to the physical verification of the support extended through the HDFC Bank FDP. The project aimed to enhance the school infrastructure, including access to digital education for students in selected schools across five states in India. The evaluation involved a meticulous examination of a sample comprising 40 schools, allowing for a focused analysis of various infrastructural components. The findings presented in this chapter are categorized into two main areas: hard infrastructure and critical infrastructure.

'**Hard Infrastructure'** included new construction and necessary repairs and renovations specifically pertaining to Building as Learning Aids (BaLA), classrooms, toilets, and drinking water facilities. The inspection sought to evaluate the current state of these facilities, focusing on their adequacy and functionality.

'**Critical Infrastructure**' encompasses evaluating smart classrooms, assessing their operational status, technology integration, and overall functionality. Additionally, this section reviews the availability and condition of science kits and essential school supplies, which are pivotal for delivering quality education.

The evaluation emphasizes the importance of understanding both the availability and current condition of these infrastructures, examining not only how they are utilized but also detailing the measures in place for their ongoing maintenance and servicing. Sustainability is also a critical focus, emphasising ensuring these resources remain functional and beneficial for students in the long term. Through this thorough examination, the chapter aims to provide valuable insights into the impact of the FDP on educational infrastructure in schools and the overall learning environment for students.

3.1 Hard Infrastructure

A significant element of support involved the provision of hard infrastructure within the schools. The details about types of support are being described as follows:

Building and BaLA Support
All the schools received enhancements to their walls, focusing on beautification and minor repairs as part of the BaLA (Building as Learning Aid) initiative. This effort aimed to transform the walls into informative and engaging student spaces. The assessment team noted that the artistic improvements were not only visually appealing but also age-appropriate, successfully capturing the interest of the students. However, it was observed that eight schools did not maintain the paintings, which underscored the importance of ongoing care to preserve the visual appeal and enrich the overall learning

Figure 1. BaLA painting work in the school, demonstrating the type of messages and information that were presented

Figure 2. Different Types of BaLA Support

environment. This situation calls for an effort to ensure that these creative initiatives remain vibrant and impactful.

Classrooms

Another key activity undertaken under the project was beautifying a classroom as an activity room for The initiative aimed at younger students has successfully fostered a joyful and engaging learning environment for both teachers and students alike. Out of the 40 schools surveyed, a remarkable 32 schools, representing 80%, reported that the implementing agency had taken proactive steps to enhance their classrooms through captivating wall artwork. In these 32 schools, the vibrant wall paintings and beautification efforts remained intact, effectively enriching the educational atmosphere. The classrooms buzzed with life, as teachers also used various teaching-learning materials (TLMs), which complemented the colourful surroundings and contributed to a dynamic and stimulating educational experience.

Figure 3. Showcasing the type of colourful artwork undertaken in the schools for the classrooms, where students get an enriching experience through a learning environment

Toilets

The assessment findings indicate that toilet-related support was extended to 25 out of 40 schools, representing 63% of the total. Functional toilets were observed in 24 of these schools, all of which were actively in use. This data reflects a commendable level of usability and accessibility of sanitation facilities. It is important to note that these findings are derived from the assessment information; however, it is conceivable that the implementing agency may have supported additional schools. Unfortunately, the AIF could not provide specific data regarding the nature of support allocated to individual schools. They indicated that the assistance offered was informed by baseline data collected from each school. Substantial support was provided through quality pipe fittings, an improved water supply system, and colourful walls that brightened their appearance. Significant efforts were also directed towards enhancing the hygiene of the toilets, ensuring they were not only clean and functional but also aesthetically pleasing on the outside, contributing to a more welcoming environment for students.

Figure 4. Status of Toilets in the Schools

A significant number of government schools that received support were found to be deficient in essential cleaning and sanitation facilities. It was observed that only a handful of these institutions had sanitation arrangements managed by local gram panchayats, and even then, these services were provided infrequently—typically no more than two or three times each week. In various states, the state of the toilets was particularly concerning, with many being deemed inadequate and unsanitary for student use. This lack of proper facilities not only affects hygiene but can also impact the overall health and well-being of the students attending these schools.

Drinking Water

All 40 schools received various forms of support aimed at enhancing their drinking water facilities. One key initiative involved the distribution of water filters designed to provide access to safe and clean drinking water for the students. According to the findings, 29 out of the 40 schools, which accounts for 73%, were equipped with these water filters. However, a closer examination revealed that only 16 of those filters, representing 55%, were reported to be fully operational. This situation indicates that a significant number of schools are grappling with non-functional filtration systems.

Figure 5. Pictures Showing the Status of Water Purifiers

The findings suggest potential underlying issues such as inadequate maintenance and servicing of the equipment, as well as challenges concerning the availability of spare parts necessary for repairs. This gap underscores the critical need for consistent monitoring and support to ensure that the water filtration systems in schools are effectively utilized and maintained. Additionally, a few select schools also received assistance with repairs for their water stations, but overall, the emphasis remains on improving the reliability and functionality of these essential water facilities.

3.2   Critical and Communication Infrastructure

Smart Class

The assessment was carried out across eight different districts in five states, focusing on a total of 40 schools. This selection varied from three to eleven schools in each state, reflecting the proportional distribution of schools that received support from the project within those specific states. The primary aim of this assessment was to thoroughly verify the installation status, availability, and overall functionality of the Smart Class equipment utilized in these schools. This evaluation involved checking not only whether the equipment was present but also its operational effectiveness in enhancing the educational experience.

All 40 schools confirmed the availability of one touch screen interactive LED panel provided to them. Of these, 39 (98%) were found to be functional at the time of the visit and were being fully used by the teachers to deliver their topics.

Only one school in the East Siang district of Arunachal Pradesh has reported a non-functional unit since its installation in 2022. The school has been in contact with the vendor and the implementing agency but has been unable to resolve the issue. As a result, the interactive panel has never been used.

A survey was conducted among 40 schools revealed that only eight schools, or 20% of the total, reported having Internet access through a dedicated line. This connectivity is facilitated by modem equipment provided by a local service provider. In contrast, a significant majority of 31 schools, or 78%, depended on mobile hotspots for their internet needs. These mobile hotspots are typically utilized by subject teachers, who leverage them to support the smart class setup essential for effective teaching and learning delivery.

Among the 40 schools surveyed, eight schools, accounting for 20% of the total, were equipped with dedicated wired broadband connections complete with routers and modems. During the visit, seven of these connections were operational and functioning effectively. In contrast, a significant majority—31 schools, or 78%—reported having access to Mobile Hotspot facilities that teachers utilized for instructional purposes.

This data highlights a positive trend in adopting technology in education, as most teachers recognize the importance of incorporating smart classroom tools into their teaching practices. The ability to access reliable internet resources enables them to demonstrate various concepts, principles, and theorems more effectively.

Figure 6. Smart Classes in Different Schools with HDFC Bank Branding

Digital content for all classes was mostly available and functional in nearly all schools. However, ten schools—particularly three each in Arunachal Pradesh, Odisha, Nandurbar, and one in Assam—reported issues accessing the digital content provided to them. Generally, most schools had access to YouTube videos and the digital content offered by state government portals for various classes and subjects aligned with the academic curriculum. In Karnataka, teachers reported that the implementing agency provided digital content, but not in Kannada, which has caused language issues for students.

Only three schools (8%) had power backups in the schools through an inverter and battery. All reported equipment was functional at the time of the visit.

> *Principals and teachers were happy with the Smart Class support. Many schools complain of erratic power supplies, which they face as a major challenge in delivering topics. Teachers need to restart everything repeatedly, which hampers class proceedings.*

A number of schools received wooden slider doors designed to cover their interactive panels, enhancing both functionality and aesthetics. However, not all educational institutions were equipped with this uniform setup, leading to a variation in protection mechanisms.

The analysis indicates that the system designed to sustain Smart Class equipment is both weak and ineffective, highlighting significant deficiencies in its overall implementation. Upon further investigation, it became clear that warranty cards for this equipment were reported available in only 11 schools, which constitutes just 28% of the total surveyed. This raises concerns about the smooth functioning of the equipment. It appears that awareness levels among teachers and principals are low, and they may not even realize that warranty cards exist, as many of them have never encountered any issues with the functionality of the equipment.

> *The assessment findings revealed that maintenance provisions were lacking in all participating schools, indicating a significant gap in the sustainability of HDFC Bank's support.*

Out of 40 schools, only 8—representing 20%—had access to a helpline or a designated complaint number. In contrast, the remaining 32 schools did not have any such support, underscoring a significant gap in support services. This situation reveals an urgent necessity for improved accessibility to these essential support mechanisms in all schools. Enhancing these provisions is vital not only for the successful management of the Smart Class infrastructure but also for ensuring its long-term sustainability and effectiveness in fostering a conducive learning environment.

> The assessment team suggests that the implementation partner include the helpline number, equipment purchase date, invoice number, warranty expiration date, and contact information of the implementation agency representative, along with the smart class setup. Additionally, there should be a provision for extended direct AMC support from the vendors, such as three years. This would ensure smooth operations for at least three years from installation.

Library
Library facilities, which consist of bookshelves or hanging protective covers and a diverse collection of books, were established in 25 out of 40 schools, representing 63% of all schools involved in the assessment. Out of these 25 schools, 22 schools boasted fully operational library setups that provided students with access to a variety of reading materials. The management of these library setups is primarily entrusted to the students' representatives, who serve as members of the child parliament within the schools, allowing for a student-led approach to library oversight and operations. This

initiative fosters a sense of ownership and responsibility among the students, encouraging them to engage with the library resources actively. The teachers also found that the reading habits have been enhanced among the students. The students are also allowed to take these books to their homes after issuance.

Figure 7. Status of Library Support in Different Schools

However, the data indicates that despite the majority of libraries functioning well, a minority of them may encounter certain challenges. These challenges could pertain to issues of accessibility for all students, the ongoing maintenance of the facilities and resources, or limited engagement from the student body, which could hinder the overall effectiveness of the library as a learning environment. Addressing these concerns will be crucial to maximizing the benefits of these library facilities in enhancing literacy and fostering a love for reading among students.

School Supplies and Equipment

In 32 schools, efforts were made to transform classrooms into vibrant and inviting learning spaces. Each classroom was thoughtfully decorated to inspire curiosity and creativity among students. As part of this initiative, five sets of circular wooden tables were introduced, designed to encourage collaboration and interactive learning. Accompanying these tables, small, colourful plastic chairs were provided, adding a cheerful touch to the environment. This combination of furniture not only enhanced the aesthetic appeal of the classrooms but also aimed to foster a sense of peer learning and make learning more enjoyable for all students.

Figure 8. Type of School Furniture Provided to the Schools

Science Kts

Out of 40 schools, only 22 received the highly valued Science Kits, which were recognized for their significant benefit to students in all participating schools. These kits, neatly organized in durable plastic folders, encompassed a range of subjects and included practical exercises specifically tailored to align with the academic curriculum. The Science Kits are primarily kept in an almirah in many schools (such as government schools in Karnataka), ensuring they are both secure and easily accessible for educators and students alike.

Study Findings

This chapter explores the findings from in-depth discussions with diverse stakeholders, including school principals, teachers, parents and students from the intervention schools across Rajasthan. The insights gained from these conversations illuminate the valuable support HDFC Bank provides for developing essential communication facilities such as smart classes and empowering teachers to access digital content for improving their teaching pedagogy.

4.1   Sample coverage

| Districts	8	Schools	40
Principals	40	Teachers	64
Students (SGDs)	232	Parents (SGDs)	10
Principals (IDIs)	10		

4.2   Profile of the Respondents

This section presents the overview of the profile of the target respondents covered under the impact assessment, as discussed in the following sub-sections.

4.2.1   Principals

Forty (40) principals participated in the survey across 40 schools in 8 districts of five states, offering valuable insights into the critical infrastructure of smart classes in schools. The age and gender distribution of principals has been presented as follows:

Graph 1: Age and Gender of Principals (N=40)
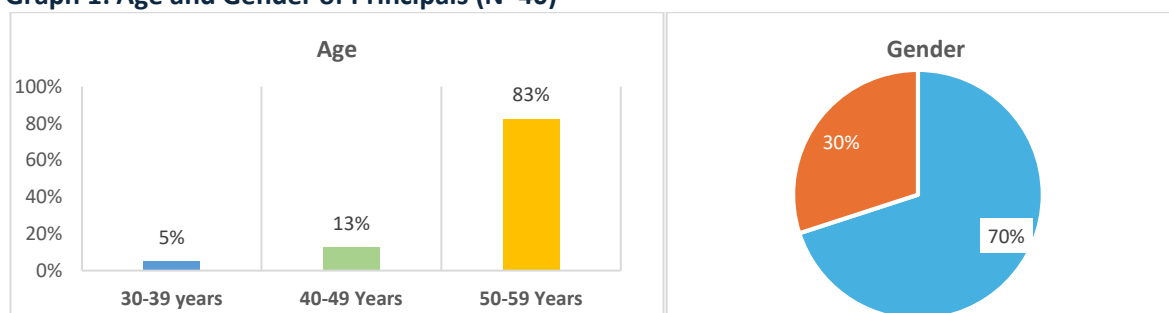
A survey of 40 school principals revealed a notable trend regarding their age demographics. A significant majority, 83%, were in the 50 to 59 age group, which suggests a prevalence of experienced leadership within the schools surveyed under the assessment. This indicates that many principals likely possess a wealth of knowledge and expertise gained over years of service in education administration.

In contrast, around 13% of the respondents were aged 40 to 49, reflecting a moderate representation of mid-career professionals. The youngest group, comprising only 5% of the respondents, was in the age range of 30 to 39, which indicates a concerning lack of younger individuals in principal roles, potentially signalling a gap in the leadership pipeline for future generations.

Additionally, the survey revealed a notable gender disparity among the principals. Seventy per cent of the principals identified as men, while only thirty per cent were women. This gender divide illustrates a predominance of male leadership within the surveyed schools, highlighting the ongoing need for efforts to promote gender equality and encourage more women to take on leadership roles in educational settings.

Graph 2: Educational Qualification of Principals (N=40)
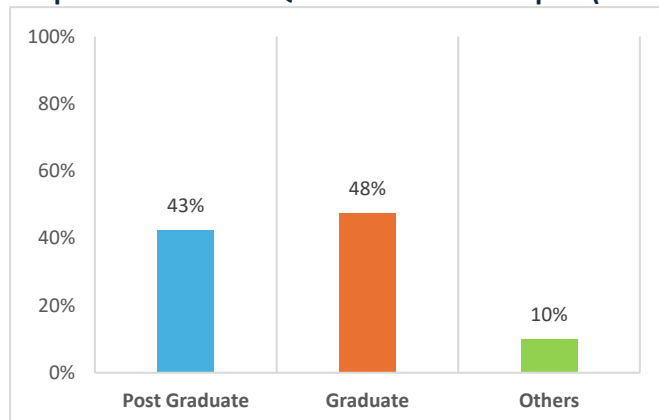

Findings revealed that a significant portion, specifically 43%, held postgraduate degrees. This statistic underscores a notable inclination towards advanced educational qualifications among those in leadership positions within the education sector. Additionally, nearly half of the principals (48%) were graduates, highlighting the importance of prioritizing higher education as a critical factor for effective school management. Furthermore, many of these principals possessed professional degrees, such as a Bachelor of Education (BEd), which indicates a solid foundation in teaching methodologies and educational practices. Additionally, there were a few individuals who had pursued diplomas in education (DEd), indicating an emphasis on acquiring specialized technical skills relevant to educational administration. This combination of qualifications suggests that a well-rounded educational background is essential for those aspiring to lead schools successfully.

Further, all the school principals were asked about their total experience and number of years working in the current schools. The teaching experience and duration are presented in the following graph.

Graph 3: Total Teaching Experience of Principals and Duration in the Current School (N=40)
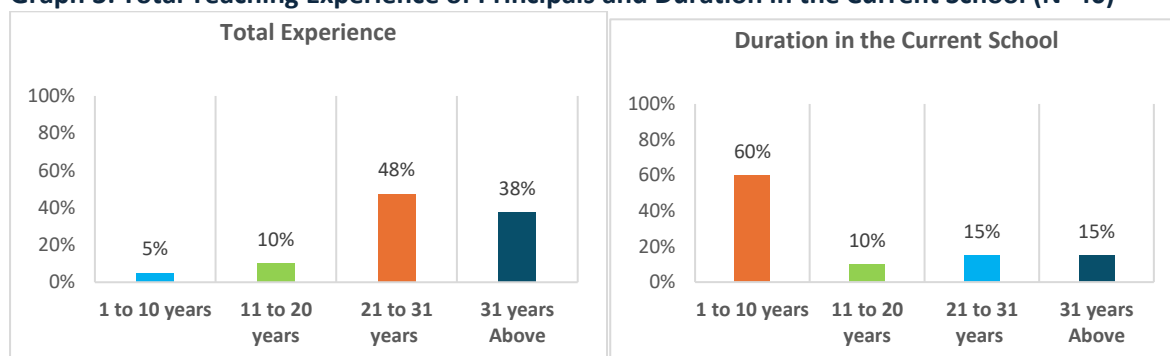
Regarding teaching experience, almost half the principals (48%) had 21 to 31 years of experience, followed by 38% with 31+ years. Additionally, 10% (7) had experience of 11 to 20 years**,** reflecting a strong presence of highly experienced teachers. Additionally, 3 out of 5 principals (60%) served at their current schools for up to 10 years. This reflects stability and sustained leadership across all schools.

4.2.1.1 Perception of Principals on the Impact of Critical Infrastructure Support

All school principals were requested to provide their insights regarding the various types of impacts experienced by both students and their institutions. Notably, over 90% of the principals reported a highly positive perception across multiple dimensions of student engagement and academic outcomes. They observed significant enhancements in students' comprehension of complex subjects and their capacity to apply knowledge in diverse and novel contexts. Moreover, there has been a pronounced increase in students' interest in academic disciplines, particularly in the areas of Science and Mathematics. This heightened enthusiasm has led to increased active participation in their studies, enabling students to meet the expectations set forth by their educators.

Observations by the principals revealed significant improvements in student performance in assessments and exams. This trend indicates that the educational strategies implemented are effectively enhancing student learning. The feedback highlights a transformative effect on the learning environment, promoting academic excellence and increasing student interest in core subjects. A graph illustrates the principals' perceptions of the various impacts.

Graph 4: Principals' Perception on the Impact of Critical Infrastructure Support (N=40)
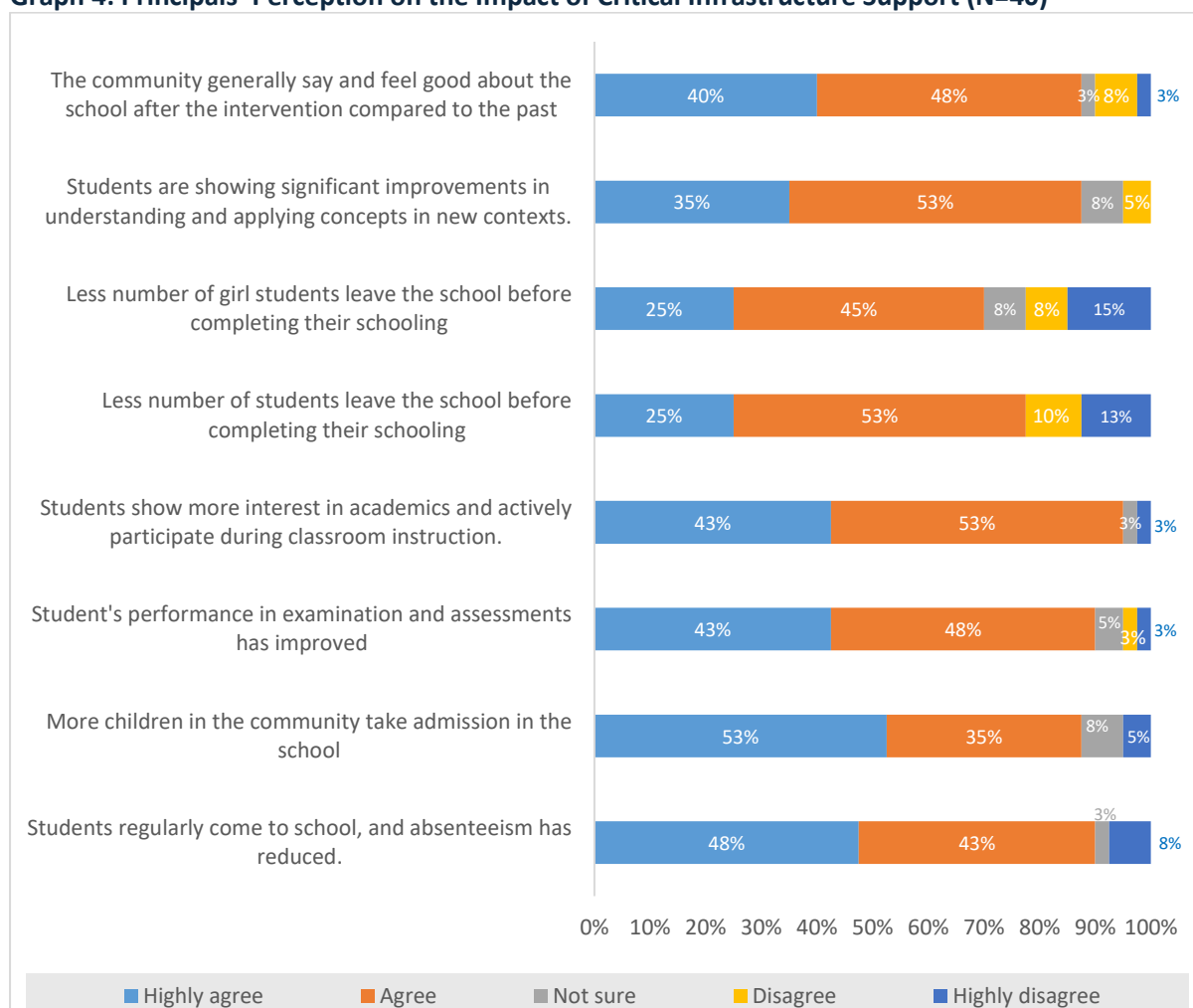
However, 1 out of 4 principals (23%) stated that there is no impact on reducing school dropout rates among students or female students.

4.2.1.2   Principals' Views on HDFC Support and Its Impact

"Earlier, students used to come on time but most of them always tried to escape from the classes. Now after having a smart classroom with interactice panel, usually students keep studying for a long time and they also enjoy it."

--Nandurbar (MH)

"Actually, when teachers teach in smart classroom, there are lesser chances of facing any poblem with operating the interactive panel. It is very easier for teachers to teach on the touch screen TV and operate without any hurdle. Because of rural area location and hilly terrain, we have many challenges like internet connectivity and mobile network issues."

--Nandurbar (MH)

"It is very useful to teach the contents with the help of smart educotional rideos in smart class. Students an use easily use and learn practical work through digital content. Yes, them can learn concepts easily and quickly."

--Shivamogga (KA)

"Digilal Contente make the chains enviorment mon enjoying Students learning efontlerly in the class help of pictures and videos.

--Shibasagar (AS)

"Yes, the students are very intrest and joing the class. Yes, students are very intrest to study. Yes, Teachers are very comfortable."

--Nuapada (OD)

"Digital content enhance teaching and learning by making lessions more engaging, Interactive and accessible, It caters to different learninig styles, allwes for sellpaced learning styles and provides inform access to a vast array of resource."

--Dibrugarh (AS)

4.2.2   Teachers

A total of 64 teachers were covered against the target of 80. The shortfall was observed because of the lesser number of teachers available at the schools, and some schools were upper primary schools with a lesser number of classes. All the teachers were interviewed to assess their experiences with the smart class and captured information on their profiles. The profile details are discussed as follows:

The findings indicated that over one-third (36%) of teachers belong to the age categories of 40-49 years and 50-59 years, collectively representing the largest demographic group. This was followed by 22% of teachers in the age range of 30-39 years. A smaller percentage, specifically 6%, were aged 20-29 years, while 6% were included in the youngest age segment of 20-29. This age distribution suggests a well-rounded composition of mid-career and experienced educators, with a relatively minor representation of younger individuals. The age and gender distribution of teachers have been shown in the following graph.

Graph 5: Age and Gender Distribution of Teachers (N=64)
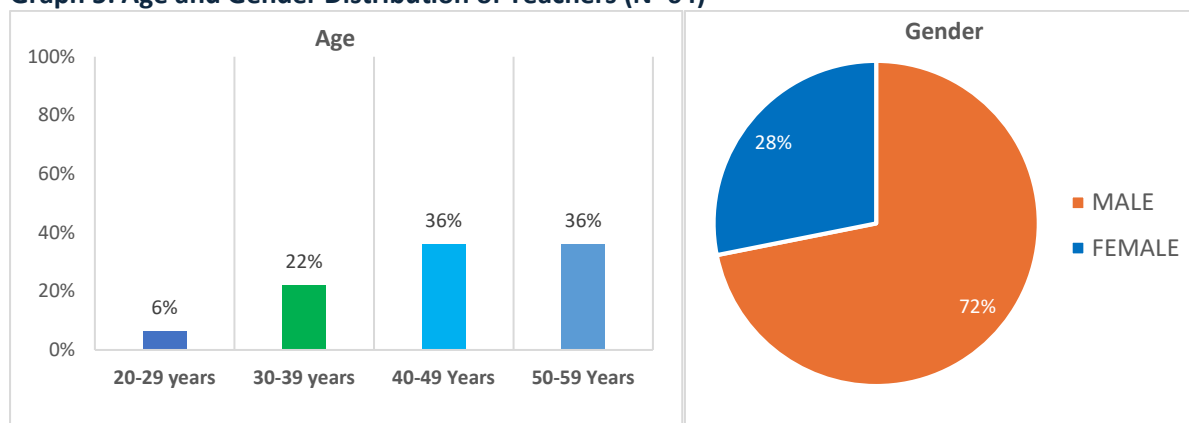
Male teachers comprise the majority, 72%, with female teachers constituting 28%. This indicates a higher representation of male teachers across five states.

Approximately one-third of teachers (34%) possess postgraduate degrees, showcasing their advanced academic achievements. Additionally, over half of the teaching staff (55%) hold graduate degrees. Interestingly, there are no teachers with such qualifications at the senior secondary level, which emphasizes the strong educational foundation among the teaching staff at other levels. This concentration of higher educational credentials among teachers highlights their commitment to academic excellence and professional development.

Graph 6: Educational Qualifications of Teachers (N=64)
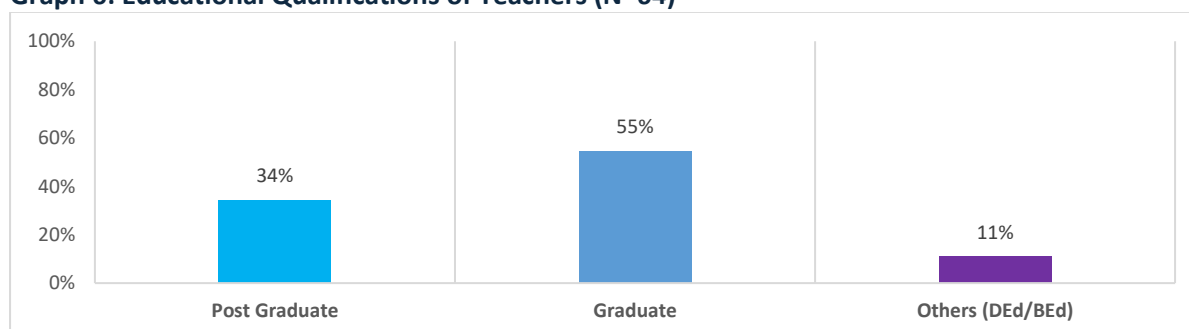
A few teachers also had additional professional qualifications, such as BEd degrees or a Diploma in Education. Many teachers also have an RSCIT certificate, which is an essential qualification for applying for teaching positions.

Analyzing teacher experience within the sample of 64 teachers provides valuable insights into their professional backgrounds. Among these teachers, a notable 30% have accumulated up to 10 years of total teaching experience, while an equal percentage (30%) had 11 to 20 years of experience. This indicates a significant concentration of teachers in the early to mid-phase of their careers. Additionally, 41% of the teachers boast over 20 years of teaching experience, showcasing a robust presence of seasoned teachers within the schools.

When examining the duration of their tenure at the current school, the data reveals a striking trend: a substantial majority of teachers, specifically 64%, have been employed at their present institution for a span of 1 to 10 years. Following this, 14% of the teachers have been at their current school for 11 to 20 years, and 13% have served for over 20 years. This distribution points to a potentially high

turnover rate or a pattern of recent hiring within the schools, reflecting a lower average length of service among the teaching staff at their current institutions.

The following graph visually represents the distribution of teachers' total teaching experience alongside their duration of service in their current schools, highlighting the dynamics of teacher experience and stability within the educational environment.

Graph 7: Teaching Experience of Teachers and Duration in the Current School (N=64)
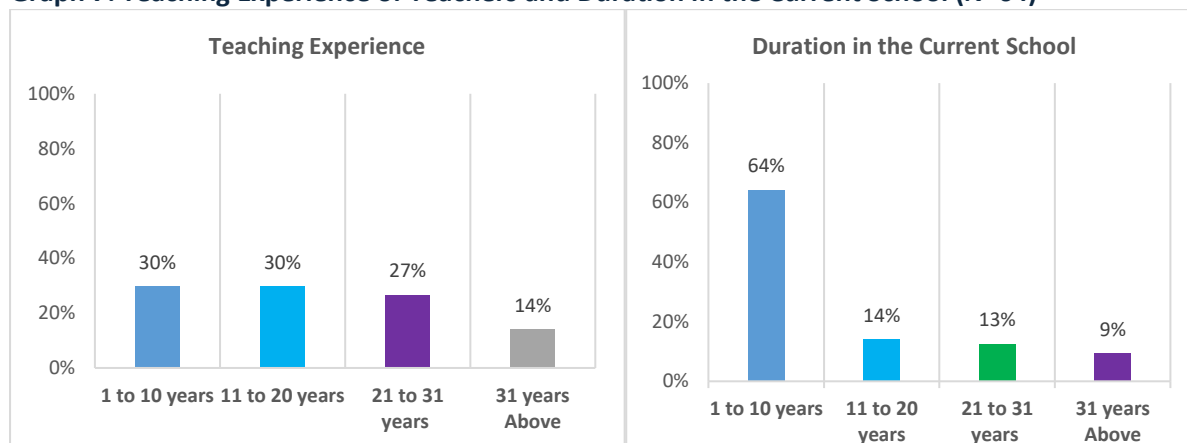
Another observation is that more teachers in the schools were fairly new to the system and were more inclined towards effectively using techno-pedagogy in the smart class.

4.2.2.1   Impact of Using Smart Class by Teachers

To assess the impact of using Smart TV for teaching, all the teachers were presented with the statements and asked to express their agreement to understand the noticeable changes they experienced. The noticeable changes and agreement on the statements are shown as follows:

Graph 8: Teachers' Perception on the Impact of Smart Class in Teaching (N=64)
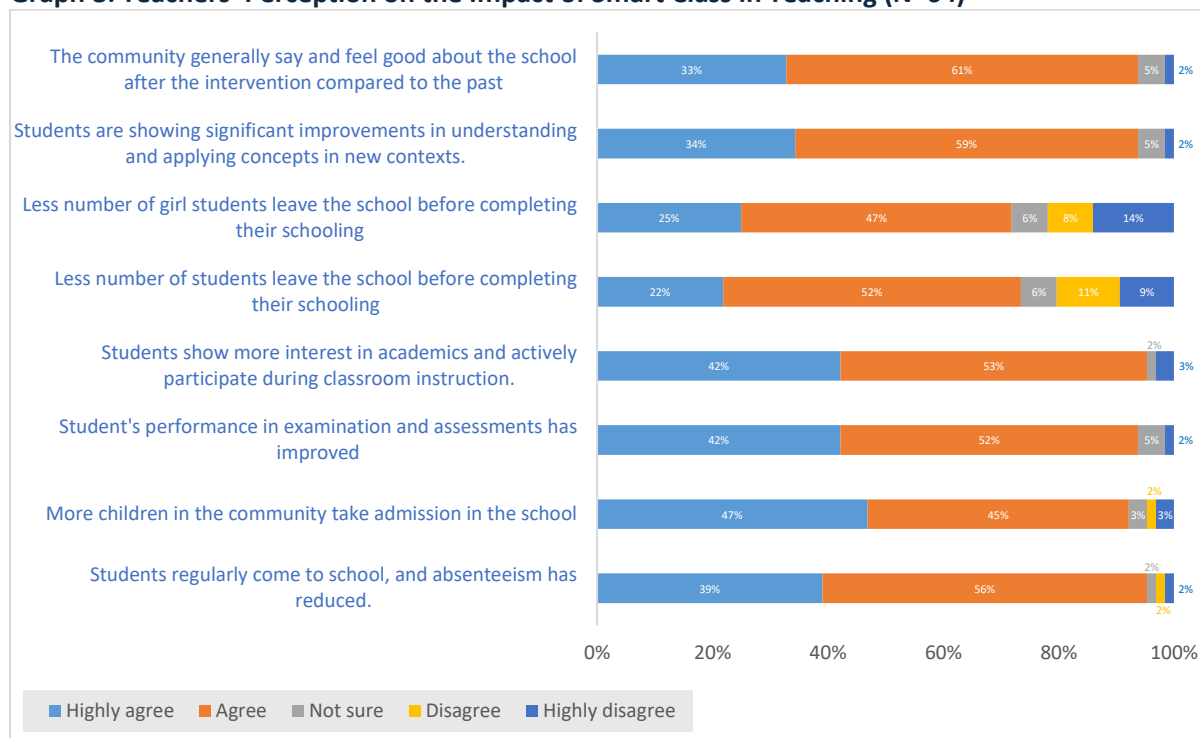
A significant majority of teachers, approximately 93%, reported observing notable advancements in students' understanding and application of concepts in various contexts. This indicates a positive shift in how students are engaging with the support such as smart classes, library and science kits. Furthermore, around 95% of teachers believed that students have become more consistent in their attendance, reflecting an effective approach to reducing absenteeism. This improvement suggests that students are more committed to their learning and no longer skip classes as often.

In terms of academic performance, an impressive 94% of teachers noted that students are achieving higher marks in assessments and exams, showcasing their enhanced grasp of the subjects. However, it's important to acknowledge that a smaller percentage of teachers, ranging from 72% to 74%, expressed concerns regarding the impact on student dropout rates, particularly among girls. This indicates that while there have been many positive shifts, further efforts may be needed to address retention issues, especially for vulnerable groups.

Overall, all the teachers appreciated HDFC Bank's initiative to support critical infrastructure.
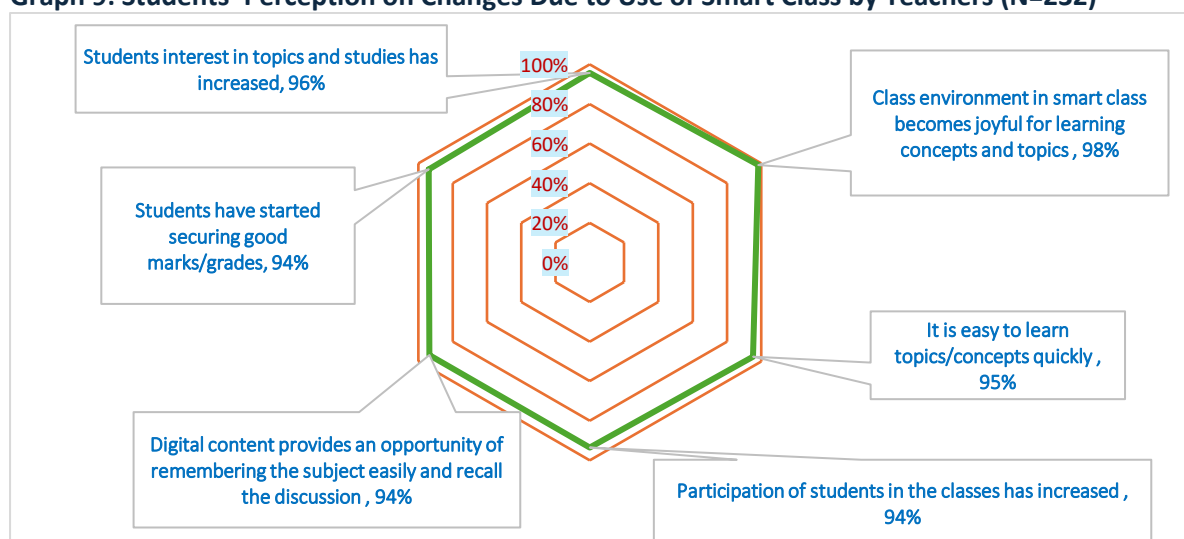
4.2.3 Student's View on the Development Support

This section presents insights collected from Small Group Discussions (SGDs) held with students. It highlights their perspectives on the advantages of several educational developments, such as the introduction of smart classrooms. These discussions reveal how students perceive these initiatives as beneficial for their learning experiences and overall academic growth.

A total of 40 small group discussions were conducted across 40 schools in 8 districts across five states. In all the schools, the assessment team obtained permission and consent from the principals to conduct the small group discussion related to their experience of Smart Class. A total of 232 students were covered, comprising 108 boys and 124 girls. Of these 232, the majority of students (65%) were from Grades 6-8, followed by 26% from Grades 9 and above and 9% in primary grades (up to 5th).

Under the assessment, students were asked to make statements, and the extent of their agreement was determined. The results are shown in the following graph.

Graph 9: Students' Perception on Changes Due to Use of Smart Class by Teachers (N=232)

- Students interest in topics and studies has increased, 96%
- Class environment in smart class becomes joyful for learning concepts and topics, 98%
- Students have started securing good marks/grades, 94%
- It is easy to learn topics/concepts quickly, 95%
- Digital content provides an opportunity of remembering the subject easily and recall the discussion, 94%
- Participation of students in the classes has increased, 94%

Based on the data in the above illustration, the majority of the students expressed agreement over the benefits of smart classes. The detailed description for each component has been discussed as follows:

Increased Interest in Topics and Studies: The implementation of smart classrooms has significantly increased students' interest in a variety of subjects and areas of study. Remarkably, 96% of students have reported experiencing positive changes in their learning experiences. This notable enthusiasm underscores the effectiveness of digital classrooms in engaging students, enhancing their involvement, and transforming the learning process into one that is both enjoyable and intellectually stimulating.

Joyful Class Environment: The implementation of smart classes has significantly transformed the educational environment, making it more enjoyable and conducive for students. A noteworthy 98% of surveyed students reported positive feedback regarding this transition, indicating that they perceive the classroom atmosphere as not only more enjoyable but also more engaging. This inviting and stimulating environment has likely enhanced students' overall learning experiences, fostered a greater sense of enthusiasm, and encouraged active participation in academic lessons.

Students have provided numerous anecdotes highlighting their experiences in smart classrooms, underscoring the interactive and dynamic nature of the learning processes. Overall, the implementation of smart classrooms is demonstrating itself as a beneficial advancement in education, fostering an environment in which students feel motivated and eager to engage in their learning.

Ease of Learning Topics/Concepts Quickly: A substantial 95% of students have indicated that they perceive a marked improvement in their ability to quickly grasp topics and concepts when participating in smart classes. The incorporation of digital content appears to enhance the overall educational experience significantly. This digital integration not only promotes a more interactive and dynamic learning environment but also plays an essential role in optimizing the learning process. Consequently, students have attained a deeper understanding of the subject matter and context, thereby enhancing their information retention capabilities. The efficacy of these smart classes underscores the potential advantages of leveraging technology in education to achieve improved learning outcomes.

Increased Student Participation: The implementation of smart classrooms has led to a significant increase in student participation, as evidenced by 94% of the surveyed students. These respondents indicated a notable enhancement in their engagement during class sessions. The interactive elements inherent in digital learning environments promote a more active involvement of students in the educational process.

Enhanced Recall with Digital Content: The integration of digital content in smart classrooms has significantly improved students' ability to memorize and recall information. An impressive 94% of students have recognized the benefits of this innovative approach, noting that the use of multimedia and web portals in smart classes enhances the learning experience and strengthens their understanding. This, in turn, leads to better knowledge retention. The engaging nature of visual aids, interactive presentations, and various forms of digital content plays a crucial role in reinforcing their grasp of the material.

Improved Grades/Marks: The impact of smart classrooms on students' academic performance has proven to be profoundly beneficial. A remarkable 94% of students indicated that they have experienced improvements in their grades and academic assessments. Numerous students articulated a strong conviction that their performance has positively transformed due to the innovative and

interactive teaching methods facilitated by Smart TVs. This highlights the substantial role that effective pedagogical strategies within smart classrooms play in promoting students' academic success and improvement.

4.2.4   Parents' Views

In the study, parents were actively involved in gathering their perspectives on HDFC Bank support and understanding their observations regarding any changes they witnessed in the schools. The discussions with parents unveiled a rich array of insights, highlighting their views and experiences related to the bank's contributions and how these have impacted the educational environment.

"Our children are scoring good marks and grades. Digital content helps them with visualization and provides an opportunity to remember subjects better."

--East Siang (Arunachal Pradesh)

"Teachers are very comfortable and students take more interest in smart class. Some improvements are seen in the marks and grades. Teachers can give more details."

--Dibrugarh (Assam)

"Our children are more interested in reading through smart classes. We think that they remember majority of topics just because of smart class teaching. They read topics and look pictures, see videos and animation that help in learning contexts easily."

--Balangir (Odisha)

"My child is very active in the smart class that I know. She enjoys very much and smart class has enhanced her knowledge. Now, she is very active in school activities and also at home chores."

--Shivamogga (Karnataka)

Conclusion & Recommendation

This chapter provides a snapshot of findings obtained from the analysis that has enabled the formulation of a detailed and thoughtful set of recommendations designed to improve and enhance future initiatives. The following discussion will explore the insights and conclusions drawn from our engagements with various stakeholders, including principals, teachers, students, and parents. Furthermore, we will present our targeted recommendations for upcoming projects, ensuring that these key individuals' diverse perspectives and valuable experiences are thoroughly represented and considered.

5.1 CONCLUSION

The impact assessment study conducted a comprehensive evaluation of 40 schools situated across eight diverse districts in five different states. Each school was visited in person to assess the level of support provided by various educational initiatives. This in-depth examination involved engaging with a wide array of key stakeholders, including school principals, teachers, students, and parents—who are all essential beneficiaries of the support initiatives. During these visits, discussions were facilitated to gather valuable insights and firsthand perspectives from the study target groups. Principals shared their views on the administrative aspects and overall school environment, while teachers provided feedback on how the resources impacted their teaching methods and student engagement. Students contributed their experiences on how the initiatives affected their learning and school life, and parents expressed their thoughts on the importance of these support systems in enhancing their children's education. Through these findings, we were able to garner a robust understanding of the effectiveness and tangible impact of the support provided to the schools.

Respondents' Profile

A. Principals
Out of 40 principals, more than two-thirds were males (70%), and the remaining were females, revealing a notable gender disparity among the principals. Most principals (4 out of 5 – 83%) were aged between 50 and 59 years. Only two out of five (43%) were seasoned professionals with postgraduate degrees, and almost half the principals were graduates. Their extensive teaching experience was more than 21 years for four-fifths (86%) of them. Three out of five principals (60%) had their tenure at their current school for up to 10 years. About 40% were in the current schools for more than 10 years, reflecting a long work experience that has given them a deep understanding of their schools' needs and challenges, fostering consistent leadership.

All the principals confirmed receiving both types of hard and critical infrastructure support. However, the type of support was provided to the schools based on baseline information gathered by the implementing agency. All principals acknowledged that the HDFC Grant was crucial in improving school facilities and enhancing schools' reputations.

More than 65% (two-thirds) perceived that the hard infrastructure condition before receiving HDFC Bank support was pathetic, as toilets were either partially functional or non-functional. Similar views

for drinking water facilities, classrooms, and building conditions were shared. More than 80% of the principals accepted that the support was essential and of high priority for the schools.

Of all principals, more than 80% thought that the HDFC Bank support for building and BaLA was adequate and met the needs of their schools and students. For other hard infrastructure support, only 70% to 74% of principals opined that the support was adequate. All the principals considered the smart class setup for the school as Essential and of high priority. 83% of principals stated that the smart class setup is adequate, and 91% mentioned that it was provided on time.

Four out of five principals (more than 80%) were satisfied with both support types. All the principals claimed that students and teachers regularly use the HDFC Bank support.

B.   Teachers

A total of 64 teachers were interviewed to obtain their views on HDFC Bank support. The shortfall was observed as there were a few schools with only one teacher, which holds true for upper primary schools (Karnataka) or those in hilly terrains (Maharashtra). More than two-thirds of the teachers (72%) were aged between 40 and 59, 72% were men, and the remaining 28% were women. One-third of teachers (34%) had a postgraduate degree, and more than half (55%) were graduates. Many of them (11%) also had a professional degree (B.Ed.) that provided a strong foundation for schools. More than two-thirds of teachers (70%) had teaching experience of more than 11 years, and 64% of them were in the current school for up to 10 years.

A total of 232 students, comprising 108 boys and 124 girls, were also contacted to gain insights into their experience and understand the impact of their teachers' techno-pedagogy. Most (65%) were from Grades 6-8, followed by 26% in Grades 9 and above

Status of Hard Infrastructure Support

All the schools received BaLA support, focusing on beautification and minor repairs. This support transformed the walls into informative and engaging spaces for the students. The artistic improvements were noted as visually appealing and age-appropriate, successfully capturing the students' interest. However, eight schools did not maintain the paintings.

Of 40 schools, 32 (80%) reported enhancing their classrooms through captivating wall artwork. In these 32 schools, the vibrant wall paintings and beautification efforts remained intact, effectively enriching the educational atmosphere.

Toilet-related support was found in 25 out of 40 schools (63%). Functional toilets were observed in 24 of these schools, all of which were actively in use. This data reflects a commendable level of usability and accessibility of sanitation facilities. Many government schools that received support did not have essential cleaning and sanitation facilities.

All 40 schools received drinking water-related support, and 29 out of 40 schools (73%) had water filters. Of these 29, only 16 (55%) were operational at the assessment time. This situation indicates that many schools are grappling with non-functional filtration systems.

Status of Critical Infrastructure Support

Smart Class

Smart class setups were available in all 40 schools and found functional in 39 schools, except one in Arunachal Pradesh, where they have been functional since their installation. Some schools received

wooden slider doors designed to cover their interactive panels, enhancing functionality and aesthetics.

Of these 39, teachers regularly used smart class setups for different subjects. A total of 8 out of 40 (20%) had dedicated wired internet facilities, which teachers used for their classes. In addition, teachers in 31 out of 40 schools were using mobile hotspots for teaching, which was encouraging.

Digital content for all classes was mostly available and functional in nearly all schools. However, ten schools—specifically three each in Arunachal Pradesh and Odisha, three in Nandurbar, and one in Assam—reported issues accessing the digital content provided to them. Generally, most schools had access to YouTube videos and digital content offered by state government portals for various classes and subjects aligned with the academic curriculum. In Karnataka, teachers noted that the implementing agency provided digital content, but not in Kannada, which created language barriers for students.

Only three schools (8%) had power backups in the schools through an inverter and battery. All reported equipment was functional at the time of the visit. Electricity and equipment maintenance were the key challenges for critical infrastructure support. Largely, the schools were dependent on the SMCs for the upkeeping of the equipment. The 'warranty cards' were present in only **11** out of 40 schools (**28**%).

The maintenance provisions were completely lacking across all 40 schools (100%)**,** indicating a critical gap in the sustainability of HDFC Bank's support. Only **20**% of schools **(N=8)** had access to a helpline or complaint number, and the remaining had no provisions. This highlights the need for concrete accessibility to such provisions for all the supported schools.

Library
A total of 25 schools (63%) were provided with library support. Of these 25, the library setup was functional only in 22 schools. The management of these library setups is primarily entrusted to the students' representatives, who serve as members of the child parliament within the schools, allowing for a student-led approach to library oversight and operations.

Science Kts
Out of 40 schools, only 22 received the highly valued Science Kits, which were recognized for their significant benefit to students in all participating schools. These kits, neatly organized in durable plastic folders, encompassed a range of subjects and included practical exercises specifically tailored to align with the academic curriculum.

School Supplies
In 32 schools, efforts were made to transform classrooms into vibrant and inviting learning spaces. Each classroom was thoughtfully decorated to inspire curiosity and creativity among students. As part of this initiative, five sets of circular wooden tables were introduced, designed to encourage collaboration and interactive learning. Accompanying these tables, small, colourful plastic chairs were provided, adding a cheerful touch to the environment.

Impact of HDFC Bank Support
More than 85% of the principals reported a highly positive perception across multiple dimensions of student engagement and learning outcomes. Principals have noted significant improvements in students' understanding of complex topics and ability to apply knowledge in new and varied contexts. Almost all the principals (96%) believed that there had been a marked increase in students' interest in academic subjects, particularly in the fields of Science and Mathematics.

Teachers also highlighted the positive impact of utilizing smart class setups to present digital content that complements the academic curriculum. This approach has fostered a vibrant and interactive learning environment, encouraging students to participate in discussions actively. More than 80% of teachers are more comfortable in using smart class setups and feel motivated to use techno-pedagogy.

The smart classes have intensely heightened students' interest in various subjects and areas of study. About 95% of students reported experiencing positive transformations in their learning journeys. 98% of students reported grasping topics and concepts quickly when engaged in smart classes. The integration of digital content enhances the overall educational experience. These digital contents facilitate a more interactive and dynamic approach to learning and play a crucial role in streamlining the learning process. The effectiveness of the smart classes highlights the potential benefits of incorporating technology into education to foster better learning outcomes.

Parents also expressed their satisfaction with including smart class setups in schools and the appropriate use of support for their children. Parents claimed that the schools have gained respect, and the community prefers admitting their children to these schools.

5.2   RECOMMENDATIONS

Hard Infrastructure Support

- A thorough needs assessment needs to be done and aligned with the HDFC Bank policies. At times, schools also raise other concerns that do not fall into HDFC Bank's policies. This includes new construction of toilets and classrooms, and construction of drinking water stations with a full setup including water pipes, electricity connections and fittings.

- There is a need for the involvement of SMCs and their orientation so that the members can support the maintenance of infrastructure support offered to the schools.

- Visible branding (HDFC Bank Parivartan) should be promoted at the school gates so that the community and others can understand how HDFC Bank supports their children's educational institutions.

Critical Infrastructure Support

- Teachers should be provided with training on digital content and how to use it at the school level.

- Offer access to multiple educational web portals by providing a username and password for at least 5 years. This would ensure the availability of updated digital content for a long duration. The username and password should be displayed in the Principal's Office so that all teachers can use them for teaching.

- Enhance technical support and maintenance for smart class equipment, addressing its functionality. Local district-level vendors should be identified to provide a 5-year extended warranty, and schools should receive the warranty cards. The smart class should have a displayed wall painting with the invoice number, installation date, and other necessary details, ensuring that anyone can contact the service provider with all the required information to register a complaint.

Findings on the OECD Criteria

This chapter presents a comprehensive analysis of the impact assessment findings, utilizing the OECD research framework to evaluate the overall effects of the project supported by HDFC Bank on the development of school infrastructure. The assessment delves into various aspects of the infrastructure enhancements, examining how they contribute to improving educational facilities and resources. By applying the established OECD criteria, we aim to provide a thorough understanding of the project's outcomes and its significance in the broader context of educational development.

For undertaking an in-depth analysis, HDFC Bank has proposed the OECD framework for the impact assessment of FDPs. Following the proposed criteria, a scoring matrix was computed using the weights for each OECD parameter. Overall results for hard infrastructure and critical infrastructure have been presented and discussed as follows:

Relevance

Beneficiaries need alignment	4.1

An impressive overall weighted score of 4.3 was obtained for the Relevance component. The individual analysis for all the supported hard infrastructure was found to be relevant, and average scores for each support were computed as Building and BaLA (4.1), Classroom (4.1), Toilet (4.2) and Drinking Water (4.2). The analysis suggests that the provided support was most relevant based on the perceptions shared by the respondents (principals and teachers). During the assessment visits, the team observed that the structures required external support from the FDP to improve the facilities for the students. The assessment team observed that the provided support was needed as a high priority for the students. Regarding critical infrastructure, the respondents expressed that schools required support for smart classes, libraries, science kits, and school supplies. The individual average scores were computed to be 4.5, 4.3, 4.5, and 3.9, respectively. The critical infrastructure support was relevant to the students in the supported schools. **For Relevance, the weighted score was 85% (4.25 out of 5).**

Local Context Alignment	5
Excellent Design	5

All support provided under the project was found to be Relevant, as it was well and excellently aligned with the needs of the schools meant for transformation. This included the teachers' use of smart classes to better understand the concepts and contextual topics. All support provided to the schools was technically sound and economically viable, and aimed to support students in all aspects, managing their problems. The project's design and quality were very relevant

HDFC Bank support has been found profoundly RELEVANT. This indicates that the schools' needs were appropriately identified and selected based on the information received from the needs assessment.

Coherence

Internal Coherence	5
External Coherence	5

The support provided under the project was well-designed and executed by the implementation partner. With respect to coherence, it was found fully aligned with CSR strategy and policy of HDFC Bank and integrated with external frameworks like government provide the support to schools. All type of support was matching with no overlaps. Also, strong synergy was found with no conflicts and support was highly required at the schools.

HDFC Bank support was found highly COHERENT—Internal and External both.

Sufficiency

Sufficiency of Support	4.1

The sufficiency component obtained an overall weighted score of 4.1. The analysis suggests that the provided support was sufficient, including hard and critical infrastructure, as shared by the respondents (principals and teachers). During the assessment visits, the team observed that the hard infrastructures supported were not fully sufficient, but In the case of critical infrastructure, the respondents expressed that the support received by the schools was sufficient. These results are based on the individual average scores that were computed for each type of support. **For Sufficiency, the weighted score was found to be 82% (4.08 out of 5).**

HDFC Bank support was considered SUFFICIENT. This indicates that the schools' needs were appropriately addressed to make them as sufficient as possible.

Efficiency

Timeliness	4.6
Quality of Services provided	4.1

The efficiency component was calculated for both the timeliness of the support and satisfaction with the quality of services. Considering the responses from principals and teachers, a remarkable weighted average score of 4.6 was obtained for both timeliness and quality. Though the weighted average scores demonstrate a high level of efficiency of the support, further analysis by type of support revealed that the average scores were higher (4+) for the timeliness of hard and critical infrastructure but average scores for the quality of products under hard infrastructure (toilet, classroom and drinking water) were slightly lower. This indicates that the respondents were unsatisfied with the drinking water and other hard infrastructure support. The assessment team also found that many water filters were not functional in Karnataka and were lying unused. **For efficiency in terms of timeliness, the weighted score was 92% (4.60 out of 5) and for efficiency of quality of services/support, the weighted score was 83% (4.15 out of 5).**

Operational Efficiency	4
Project Design and M&E	4

The support's efficiency received an overall score of 4. It was inferred that the project has a good efficiency, and the reasons for the same include well-designed implementation of work, appropriate use of support like toilets, smart class, classrooms for children with wall paintings, etc. Additionally, it was found that the project had a well-structured project-related monitoring, evaluation and learning system. This helped the project implementation team members to track the progress of project activities smoothly.

The HDFC Bank support was identified as EFFICIENT regarding timeliness, quality of services, project design, MEL system and operational efficiency.

Effectiveness

Current Status	4.3
Utilization	4.3

The evaluation of the support's effectiveness was conducted by examining the current condition of hard and critical infrastructure alongside the frequency of various types of support utilized within schools. Feedback from principals and teachers was used to calculate weighted average scores for both the current status and the level of utilization, which were found to be 4.3 each.

Findings have shown that the schools have generally welcomed and effectively used the support provided for hard and critical infrastructure. The evaluation indicates that these facilities are operational and fulfil their intended purposes. However, when analyzing the effectiveness of different types of support, it was found that the average score for the current status of drinking water services is somewhat concerning, with a score of 3.97 out of 5. It was observed that several respondents reported issues with drinking water support not being fully operational in certain schools. The investigation by the Karnataka assessment team revealed that numerous water filters installed in these institutions were not functioning and, unfortunately, were left idle. This is a significant finding, as access to clean drinking water is crucial for the health and well-being of students. In contrast, the other forms of hard or critical infrastructure support were functional and actively utilized by the schools. **The weighted average score was computed to be 87% (4.37 out of 5).**

Additionally, the overall utilization of services and support received a strong **weighted average score of 86%, or 4.33 out of 5**, demonstrating that schools are making good use of the resources provided to them, aside from the challenges faced with drinking water services. This comprehensive analysis underscores both the successes and the areas that require immediate attention to ensure all students have access to vital resources.

Reach	4
Influencing Factors	4

An overall score of 4 has been assigned for the effectiveness of the project. All the planned targets were successfully achieved, and the status of supported components was largely functional in all schools except the water filters in some schools. The support has been able to create an enabling environment, including BaLA paintings, classroom furniture, paintings on the walls of classrooms, smart classrooms, etc.

HDFC Bank support has been found very EFFECTIVE.

Impact

Significance (Outcome)	4.3

The impact of the FDP was thoroughly evaluated by analyzing the weighted scores regarding the broader outcomes of the school interventions. The results were impressive, with the weighted average score for the Impact component reaching an outstanding 86% (4.3 out of 5). This figure reflects a significant achievement and reflects the importance of the program.

Further examination of the responses revealed that over 90% of participants concurred that students had become more regular in their attendance, leading to a notable decrease in absenteeism—a commendable outcome for any educational initiative. Additionally, a similar proportion of respondents—over 90%—reported that students were achieving better academic performance, with improvements in their marks and grades attributed to their involvement in smart classes and enhanced reading habits.

Interestingly, nearly four out of five respondents (88%) observed that more children in the community were now being enrolled in schools. This trend is particularly noteworthy, considering that the schools involved were predominantly located in rural areas, where the presence of private educational institutions is typically minimal. This collective feedback strongly suggests that the FDP has made a substantial positive impact on the educational landscape in these communities.

Transformational Change	4
Unintended Change	4

Under these components, the project scored four (4), indicating significant transformational changes. Principals and teachers expressed their satisfaction with the support and shared positive changes they could observe among the students. Smart classes allowed them to learn through motion, sound, and animation that gets registered in their minds. Students endorsed similar views on how smart classes help them better understand the subjects and topics related to Science, Maths, English, Geography, current affairs, and General Knowledge.

HDFC Bank's support has positively impacted students, with teachers and principals recognising the positive improvements in students' learning outcomes and attendance at the schools.

Sustainability

Potential for Continuity	4

The overall weighted score of 4 indicates that the respondents perceive the sustainability of support as good. The detailed analysis of hard infrastructure support shows that the average sustainability scores were below 4 for 3 out of 4 types of support (3.95 for Building and BaLA, 3.93 for Toilets, and 3.88 for Drinking Water), while the score for classrooms was 4.0. The assessment team also noted that the support for classrooms was exceptional, as a complete renovation was carried out, including wall painting, repairing walls, floors, and roofs, and providing furniture for the younger students. Further analysis of measures available at the schools to sustain the support showed that more than three-fourths of the respondents mainly depend on members of the School Management Committee (SMC). Largely, SMC members support hard infrastructure repairs through the Gram Panchayat, which is also not done regularly. However, teachers were found to be confident that the critical support, such as smart class, science kits, and library, is managed in their presence, and the assessment team was informed that they are trained adequately to handle the equipment, kits or books well.

Sustainability in Program Design and Strategy	4

A score of 4 was given to sustainability because teachers and principals expressed their willingness to use the support carefully and adequately to sustain it for a longer duration. However, the schools have expressed that SMCs care for all school-related needs.

 For sustainability, the results indicate that more efforts are needed to make the interventions SUSTAINABLE.

Branding

HDFC Bank Parivartan - Brand Visibility	5

In every school, HDFC Bank branding was highly visible, indicating the name "HDFC Bank Parivartan".

Overall Average Score – 4.26 out of 5

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