Impact Assessment of Focused Development Program - Smart Schools in Punjab

Impact Assessment Report

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Project ID	P0478

Study Team

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Abbreviations

AV	Audio-Video
BaLA	Building as Learning Aid
CSR	Corporate Social Responsibility
KABP	Knowledge, Attitude, Behaviour and Practices
MI	Monitoring and Impact
NGO	Non-Government Organization
RO	Reverse Osmosis
SACH	Society for Action in Community Health
SMC	School Management Committee
SS	Smart Schools
WASH	Water Sanitation and Health

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Introduction

1.1 Background

HDFC Bank Parivartan supports focused development programs (FDPs) in multiple focused areas such as education, rural development, skills development and livelihood enhancement, healthcare and hygiene and financial literacy. In one of the focused development programs, HDFC Bank has committed to creating 2500 smart classrooms in partnership with non-profit organizations under its key objective of promoting education wherein 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 many 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, including SMART classes and digital classrooms along with developed infrastructure led to improvement in student learning outcomes, and an increase in enrolment and attendance. The HDFC Bank's support for the schools enhances the school's reputation among the local communities and stakeholders and teachers get equipped with techno-pedagogy also.

1.2 About the Project

HDFC Parivartan provided a grant to the **Society for Action in Community Health** (SACH) to implement school development interventions in **21 schools from 5 districts of Punjab** including Ludhiana (8 schools), Patiala (6 schools), Jalandhar (2 schools) and Bathinda and Amritsar (1 school each). The project was aimed at the comprehensive development of these schools including setting up Digital Classrooms, Libraries, and sports facilities, along with the needed repair and maintenance of the infrastructure. The capacity-building component included training of teachers on using Smart TV interactive panels; and SMCs to improve their effectiveness in the school development and menstrual hygiene practices for adolescent girls.

The project was implemented in 21 schools across 5 districts of Punjab. The districts covered were: Ludhiana, Patiala, Bathinda, Jalandhar and Amritsar. The maximum number of schools were covered in Ludhiana (11) and Patiala (6).

1.3 Key Activities Undertaken under the Project

Repair work/refurbishment of the school building such as walls, verandah, etc.
Repair work for Toilets
Repair work for Drinking water facilities
Provision of RO and Filter for Drinking Water
Supporting basic furniture in the school or smart class
Upgrading library with books and/or sitting arrangements
Installation of a Smart class
Setting up Digital classrooms

Activity Corner in Primary Schools
Set up of mini science lab government schools
SMC training and exposure visits for the SMC members to model schools

1.4 Objective of Impact Assessment Study

Broadly, HDFC Bank intends to evaluate the effectiveness and efficacy of the project interventions and the sustainability of the project outcomes.

IMPACT PSD Private Limited was entrusted to undertake the impact assessment of the focused development program – smart schools in Punjab. The ensuing chapters of this report present the methodology and findings of the study.

The Intervention Model

The project carried out several activities in the target schools. The table below provides the list of activities reported by the SACH. Also included in the matrix are the indicators proposed for the assessment.

Activity	Tasks achieved	Outcome achieved		Assessment Indicators
		Quantitative	Qualitative	
Upgradation of School Infrastructure	• Classrooms, common areas, educational park, science and math labs, verandah, cycle shed, kitchen shed and toilets • Drinking Water • Provision of new furniture, repair of existing furniture, electrical repair work, etc	**21 schools supported**	• Improved school infrastructure with improved classrooms, re-strengthened common areas and verandahs, better furniture, etc. • Improved interest and retention of students in attending classes • Empowered school with better facilities	• Availability of supplied equipment and their functionality • Quality of products supplied • Repair and maintenance (provision, funds, warranty) • Usefulness of products • Perception of its impact on student attendance and regularity • Perception of its impact on school reputation
Library Setup and Strengthening	• Minor repair of library room • Provision of wide variety of reading materials and books • Provision of storage shelves and newspaper stand	**21 schools supported**	• Improved libraries with a wide range of reading-learning materials • Inculcating and improved reading habits	• Weekly rate of issue of books • Students perception on reading habits • Average weekly time spent by students in the library • Inclusion of library period in school timetable
Strengthening sports club and distribution of sports kit for nurturing sport and physical education for youth	• Distribution of sports kits and materials	**21 schools supported**	• Active engagement and participation of students in extra-curriculars and sports activities • Re-activation of sports club	• Change in sports related practices of students • Perception of teachers on uptake of sports activities by students • Utilization of sports equipment

Activity	Tasks achieved	Outcome achieved		Assessment Indicators
		Quantitative	Qualitative	
SMC Training and capacity building	• Training and capacity building sessions for SMC members • Provision of IEC materials and various books of records	**21 SMCs supported**	• Improved participation of SMC members, engagement of Community leaders and members/parents	• Average attendance of members in SMC meetings (before and after the training) • Recall of issues discussed during the training • Perception on usefulness of the training (including exposure visit, wherever applicable)
Strengthening of Science and Math Labs	• Minor repair of Science and Math Labs infrastructure • Provision of storage shelves/ furniture	**21 schools supported**	• Improved science and math labs in schools • Availability of better storage units for proper maintenance of equipment/lab materials	• Use rate of Labs (average students accessing labs per week) • Perception of teachers on their capacity to effectively use the labs
Session on Menstrual Hygiene Management in schools	• Menstrual hygiene management sessions conducted through FGDs and interactive sessions	**2 schools supported**	• Improved awareness of menstrual health and management in girl students and teachers	• Change in KABP regarding menstrual hygiene due to training
Digital Learning in classroom: Smart Class in high school	• Smart Class interactive boards installed in schools • Multiple teacher trainings conducted for proper utilization and operation of the system	**21 schools supported**	• Availability of an improved digital mode for learning and teaching • Improved classroom interaction and teacher-student engagement	• Functionality of equipment of digital classroom, including power backup • Average weekly attendance in digital class against overall school attendance • Teachers' perception/confidence in managing smart class • Students and teachers' perception on usefulness of Digital Class • Ease of access to Digital Class including crowding, waiting and time allocated to students

Study Methodology

2.1 Assessment Framework

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

Using this framework, we suggest questions/indicators that will be adopted to assess each program, using the six parameters stated above. These questions will be finalized in discussion with the HDFC team as well as after pre-testing the questionnaires.

	Indicators/Questions
Relevance	• What criteria were adopted for identifying the schools for support • How was the need assessment undertaken for the support • To what extent did the supprot meet the identified needs
Coherence	• What challenges were faced by schools due to non-availability of Smart class or Digital Classroom and other Infrastructure support (WASH, Library and other) • How the type of equipment, digital content and other essentials were finalized for the Digital Classroom • How did the Digital Classroom and infrastructure supported the school in achieving the expected results • How the library, WASH and other infrastructures provided under the project helped schools fulfilling the needs of the students • Options available with the school for repair and maintenance services of Digital Classroom and maintenance and upkeep of constructed/refurbished infrastructure
Efficiency	• What proportion of students were regularly attending smart class/digital classroom • What proportion of teachers could receive the benefits and type of benefits achieved • What subjects are being taught using the Digital Classroom

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

	Indicators/Questions
	• How many students could get benefits of Classrooms academically, socially and health-wise • What proportion of students were regularly attending the library
Effectiveness	• The extent to which Digital Classroom contributed in improving the retention and regularlity of students in classes • To what extent WASH support helped girls and boys students

Impact	• Proportion of teachers and students stated the type of benefits and achievements
	• Proportion of teachers/principal reported:
	  ○ Increase in attendance or participation of students
	  ○ Improvement in learning outcomes of students
	  ○ Improvement in critical thinking and analytical skills of students

Sustainability	• Teachers and Principal have the understanding on how Digital Classroom and library must be used to support students and in achieving the desired and improved results/learning outcomes. • Mechanism in place for regular maintenance and repairing, availability of vendors' contacts and allocation of funds for smooth functioning of Digital Classroom and upkeep of infrastructure

2.2 Research Methods

A mixed method approach was adopted for the impact assessment study wherein face-to-face interviews were conducted under the quantitative research and check-lists were filled up in each school. Under the qualitative component, focus groups were conducted with the students who participated in the smart classes and their experience related to project-related support in the schools.

2.3 Geographic Coverage

The project was implemented in 21 schools across five districts of Punjab. The assessment covered two districts with a higher number of schools.

2.4 Target Groups

The following target group was included in the impact assessment study:

(a) Principals/SMC Members

(b) Teachers

(c) Students

2.5 Sample and Sampling Procedure

Of the 21 target schools, **7** (approximately one-third) were covered under the assessment. In each selected school, **20 students, 3 teachers, 2 SMC members and 1 Principal** were included in the assessment to capture the information. For students, 4 FGDs in each school were conducted covering 5 students in each FGD, including 2 FGDs with boys and 2 FGDs with girls.

2.6 Sample Coverage

From each of these 7 schools, we covered **20 students, 3 teachers, 2 SMC members and 1 Principal**. For students, 4 FGDs in each school, with 5 students each were conducted (2 FGDs with boys and 2 FGDs with girls).

The following sample was covered under the assessment:

Target Group	Total
Schools	**7**
Checklists	**7**
Students	**28 FGDs**
	140 students (Boys = 70; Girls = 70)
Teachers	**14**
Principals & SMC Members	**14**

2.7 Study Tools

The following tools were developed for collecting data:

- Observation and Verification Checklist for assessment of Smart Classrooms and Infrastructure provided through the project
- Semi-structured tool for the teachers
- FGD Discussion Guide for Students
- In-depth interview discussion guides Principals and SMC members

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

The training of the data collection team was organised and facilitated by the senior management of IMPACT. During the training, the team members were provided with an overview of the project and the type of infrastructure support provided by HDFC Bank. The team members were guided through the data collection process and briefing on the data collection tools.

2.9 Survey Implementation

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

- For the assessment, a team of two trained investigators was deployed to visit the selected schools.
- The team reached to the selected school with prior appointments coordinated by the SACH officials.
- Both team members completed the data collection in one day covering the qualitative and quantitive interviews and physical verification of the 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 who were associated the smart class teaching were interviewed.
- Later, physical verification was undertaken which was facilitated by the teachers and/or principals to give the details of the features and status of the support.

- In the end, a request was made to the teachers to allow and interact with the students who have undergone sessions in the smart class and information was gathered in mini-groups without disturbing the classes.
- Before the return, the principals and teachers were duly acknowledged for their coordination and support offered for the impact assessment study.

2.10 Data Analysis and Report Writing

Post-data collection, all the collected data were processed at the IMPACT office including data cleaning and scrutiny. All the data analysis was undertaken in MS Excel and/or SPSS and frequency runs were obtained. For the qualitative data, a thorough content analysis was done to obtain the results based on the components of the projects. Post-completion of tabulation and crosstabs, the interpretation of results was undertaken. The report writing was undertaken by the senior researchers.

2.11 Challenges Faced

No challenges were faced in the study and well coordinated by the SACH representative.

Current Status of the Equipment and Supplies Provided through the Support

This chapter discusses the assessment findings of the physical verification of the support provided under the smart school infrastructure development project to the sample of 18 schools. The findings discuss the current status of smart classes, toilets, drinking water facilities, library materials, sanitary pads vending machines and incinerators for disposal, sports equipment and STEM labs.

3.1 Smart Class

Digital Learning in classroom: Smart Class in High School	• Smart Class interactive boards installed in schools • Multiple teacher trainings conducted for proper utilization and operation of the system

The impact assessment study was conducted in 7 schools covering two districts—Patiala and Ludhiana in Punjab state. The physical verification process was administered to assess the current status of HDFC Bank support in terms of availability, functionality and current usage by the intended target groups (teachers and students). The results of the physical verification are discussed as follows:

The smart classrooms were found functioning in all four schools where smart class support was provided among the seven schools. A classroom equipped with all the necessary smart class assistance from HDFC Bank was set up so that subject teachers could conduct interactive lessons tailored to the grade-level curriculum. Under the setup, a flat TV interactive panel along with a sound bar, Web Camera, E-content for Grades 6-10, Android-based applications, one UPS and one inverter were provided. This makes the comprehensive support dealing with all the needs of the classroom teaching for the teachers.

A 65 inches Flat TV interactive panel from a leading commercial brand has multiple features that add value to the technology support from HDFC Bank which includes the following:

- Android-based Apps
- Internet connectivity
- The screen can be split into multiple screens
- The screen can be used as a Green or White Board
- Google Features and apps such as YouTube
- Interactive board with Smart Pen option
- Storage with saving options for daily lectures
- Sharing the saved pages on WhatsApp groups for the students

All the interactive panels were functioning, and trained teachers in the school demonstrated the use of panels for the students which showcased how the smart class technology is being used for the students.

In focus group discussions, students expressed satisfaction with the smart class support. Most were regular attendees, but a few only attended one or two classes. The students highlighted several benefits, including a better understanding of subject topics and the ability to visually comprehend experiments, which aids in retention. They also mentioned that learning is immediate as they can simultaneously see the motion and hear the sound, which helps clarify doubts instantly. Additionally, about one-third of the students reported improved grammar skills due to the digital content.

Teachers also noted that students ask many questions when smart class and digital content are used for teaching.

According to the teachers, the smart class provided an enabling environment for the students as well as teachers. Usually, teachers of Science, Mathematics and English use the smart classrooms.

The assessment team believes that the smart class support has been an excellent addition to the schools, benefiting both subject teachers and students. The flat-screen interactive panel is a modern and advanced device that is easy to operate. The teaching process through the LED panel serves its purpose and provides a great learning experience for the students.

The support has played a catalyst role in strengthening digital learning in the government schools which is the key focus of the government.

3.2 STEM Lab

Strengthening of Science and Math Labs	• Minor repair of Science and Math Labs infrastructure • Provision of storage shelves/furniture

Under FDP, five out of seven schools claimed to receive science lab and mathematics lab support. On further discussion, principals and teachers disclosed that the schools were provided with repair and maintenance support only. None of the schools had new models, charts and equipment according to the academic curriculum and lesson plans. Physical verification of labs was made, and it was observed that flooring repair and mild steel fabricated doors were repaired or replaced, considering the item's condition. A couple of schools also provided wall painting and electric repair. Nothing specific support was offered to schools.

The assessment team determined that the repair and construction support for the labs was sufficient for its intended purpose. However, it would have been more beneficial if the schools were provided with new, advanced working models, charts, posters, DIY projects, etc., to enhance the students' learning experience in various subjects. While construction and repair work are important and add value, the support for educational materials is inadequate, except for improving the appearance of the lab room.

3.3 Library Support

Library Setup and Strengthening	• Minor repair of library room • Provision of wide variety of reading materials and books • Provision of storage shelves and newspaper stand

HDFC Bank understands the needs of the students and has the intention to enhance the reading skills among students and their confidence in their studies, HDFC Bank provided library-related support to all the schools under FDP in Punjab. Only four schools claimed to receive such support from SACH under the support. Discussions with principals and teachers intimated that the schools were provided with minor repairs and racks for the libraries for storage.

The assessment findings revealed that support was given to four schools, which was very helpful. The observations indicated that repairs were made to the floors, and storage racks were provided under library support. However, none of the schools received new reading books, reference materials, or support for creating reading corners where students could visit and read. The schools were hoping for additional support in the form of books, reading materials, and related assistance in the future. Though it was expected to be provided by SACH, the same could not be verified in any of the sample schools during the physical visits.

The assessment team discovered that the library support for the schools was beneficial, it only included repairs and storage capacity. However, the teachers and principals were expecting academics and storybooks, but instead, they only received storage racks and minor repairs. Students, however, felt happy that there were new storage facilities, but most schools had kept general stuff also in those storage almirahs.

Additionally, the implementation partner should have assessed the specific library needs of each school before finalizing the materials.

3.4 Sports-related Support

Strengthening sports club and distribution of sports kit for nurturing sport and physical education for youth	• Distribution of sports kits and materials

Under the HDFC Bank support, six out of seven schools were provided with sports items for the students. The teachers and principals were satisfied with the support and appreciated the support.

Students included in the discussions expressed their satisfaction with the sports materials, and they reported using them and enjoying all the board games and sports.

Earlier, the students were playing Kho-Kho, Kabaddi, etc., but now other sports materials like badminton and board games are also available for the students.

The assessment team is grateful for the sports-related support provided to the schools, which was essential. Both students and teachers have demonstrated their satisfaction with the support. However, observations indicate that more sports materials should have been given to the schools, as the current support was found to be grossly insufficient. Additionally, physical verification and the condition of the sports items shown in the given picture suggest that the quality of the items is not good, and the items are rarely used by the students.

3.5 School Infrastructure

Upgradation of School Infrastructure	• Classrooms, common areas, educational park, science and math labs, verandah, cycle shed, kitchen shed and toilets • Drinking Water • Provision of new furniture, repair of existing furniture, electrical repair work, etc

One of the key components of the HDFC Bank support was the upgradation of school infrastructure where students need multiple facilities, and the government usually delays the process of maintenance of school infrastructure. All seven schools received several types of construction, repair and renovation support under the infrastructure upgradation support.

The physical verification of support informs that the work undertaken for the upgradation of infrastructure has been extensive, and quality was found to be good. Principals and teachers demonstrated their happiness that many pending works were undertaken under the HDFC Bank support. It was observed that all the infrastructure support was badly required by these schools, which SACH has provided. The works that were physically verified included the installation of MS gates, doors, sheds, common areas, provisions of wash basins and water in toilets for girls and boys, drinking water platforms, RO filter setup, etc. Schools were also provided with furniture such as chairs, student chairs and painting works. The assessment team found the provided infrastructure support was in use and existed in good condition at the time of physical verification.






The assessment team noticed that the infrastructure support is satisfactory and widely beneficial to the schools. HDFC Bank understands the need for immediate support for students of government schools, which is why it supported the schools with demanded infrastructure upgradation works.

3.6 Capacity Building of SMC Members

SMC Training and capacity building	• Training and capacity building sessions for SMC members • Provision of IEC materials and various books of records

Out of seven schools, only one confirmed that the School Management Committee (SMC) members received capacity-building training. The only school principal was unable to specify the specific components of the SMC training but mentioned that it was related to their roles and responsibilities. However, the assessment team could not verify this as none of the SMC members were available on the day of the visit.

Study Findings

This chapter presents the findings based on the discussions with principals, teachers, and students across the project schools. The results provide insights towards the HDFC Bank's support in various areas, including smart classes, STEM labs, toilets, drinking water facilities, library resources, sports equipment, and other educational interventions. Through analysis of the collected data, this chapter highlights key benefits, challenges, and areas for improvement as reported by the respondents.

The findings are based on the opinions, perceptions, and beliefs of the principals, teachers, and students regarding HDFC Bank's support to the schools in response to the assessment team's inquiries. These findings may differ from the results of the physical verification of the support provided at the schools.

4.1 Profile of the Respondents

A total of seven principals were covered in two districts of Punjab and were interviewed to gather information about the infrastructure support received from the HDFC Bank under FDP. The majority of principals (6 out of 7) were aged between 30 and 55 years, with only 1 above 55 years. All seven principals were female, indicating a strong representation of women in leadership roles within these schools.

Most principals had extensive experience, with 4 having 11–20 years and 3 having over 20+ years of teaching. Most principals (6 out of 7) were at their current school for 11–20 years, showing stability and commitment.

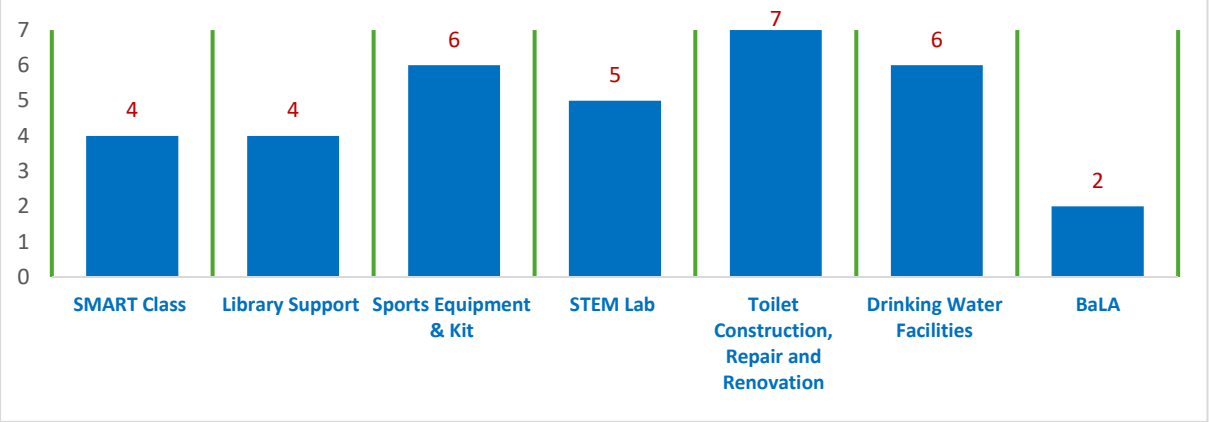
The principals in Punjab were mostly experienced and knowledgeable in their current schools. Most of them were between 30 and 55 years old and had 11 to 20 years of teaching experience. They have been at their current schools for a long time, which shows that they are stable and have a deep understanding of their school's needs.

Of the 7 surveyed schools, only 4 received Smart Class support from HDFC. The teachers in these schools are experienced yet younger, with 3 under 30 and 1 in their thirties. They bring many years of experience, having worked in their current school for 1 to 10 years or 11 to 20 years. The gender balance is even with 2 male and 2 female teachers.

4.2 Information on Infrastructure Support

Under the FDP, all seven schools were provided with different types of infrastructure support incorporating the needful components in discussion with schools. Since the different schools were supported with various types of support, principals were requested to specify the support received under the program. The following graph portrays the type of infrastructure support offered to 7 schools.

Graph 1: Infrastructure Support Received through HDFC Bank Grant (N=7)

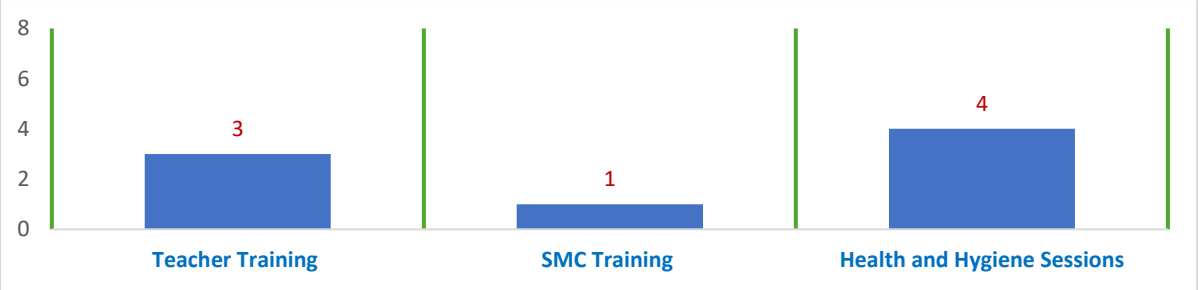


Only four schools received support for SMART classrooms and library resources. All seven schools were provided with support for the construction, repair, or renovation of toilets for both boys and girls. Six schools agreed to receive repairs and construction work for drinking water areas (including three schools with RO water purifiers), and a similar number of schools received sports equipment and materials (6). However, five schools reported receiving some repairs in STEM labs, and two received BaLA support, indicating gaps in critical areas needed to become fully smart schools.

It can be seen that need-based support was provided by HDFC Bank for making the schools equipped with smart classes or digital classrooms and other needed infrastructure-related support so that students could get adequate facilities in the schools to make learning easier and ensure their regularity in the schools.

On further enquiry with principals, the schools shared that capacity-building initiatives were also offered to them. The following graph shows the type of capacity-building support received.

Graph 2: Capacity building support received through HDFC Grant (N=7)



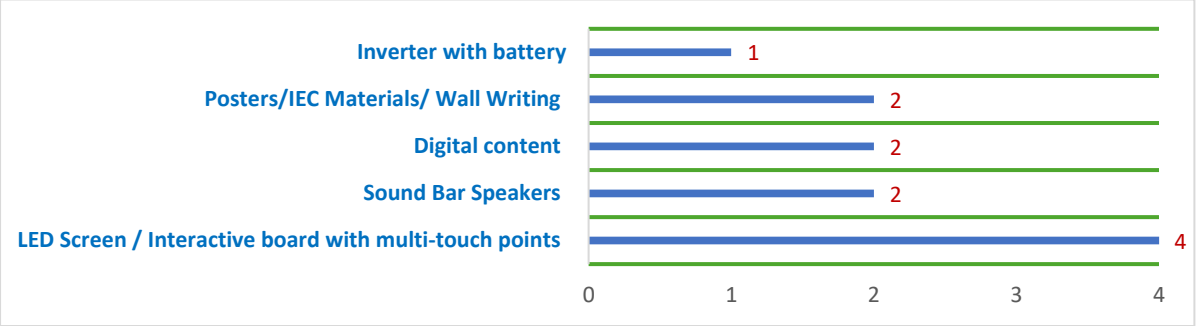
The HDFC Grant provided capacity-building support to schools where teacher training was conducted in 3 schools on how to operate the digital class equipment (LED with interactive panel) followed by SMC training in 1 school and health and hygiene sessions for students in 4 schools, enhancing overall school development. **The HDFC Grant's capacity-building support reached only a few schools means limited coverage.**

The implementation partner closure report does not indicate how many schools were provided with what type of support. It states that 21 schools received a variety of support, from which a sample of seven schools was selected for the impact assessment study.

4.2.1 SMART CLASS

School officials (principals and teachers) shared that only four schools received smart class setups. The following graph portrays the type of support received by the schools for the digital classrooms or smart classrooms.

Graph 3: Support Received for Digital Classroom/Smart Class (N=4)

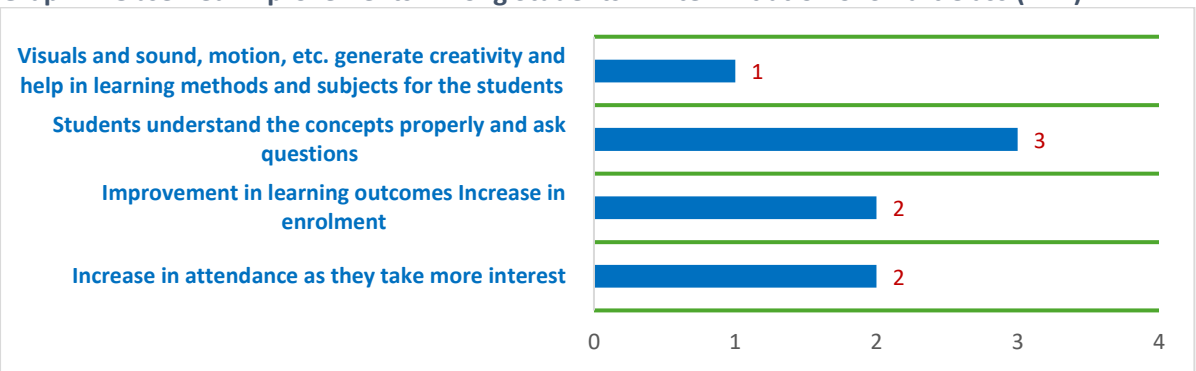


Within the SMART Class setup support as informed by teachers, all four schools received interactive LED panels, and two schools each mentioned receiving sound bar speakers, digital content and wall writing/poster/IEC support. Only one school admitted that they were provided with a power backup (inverters along with the batteries). It can be said that only a limited number of schools were supported with digital classes with specific desired support.

The **installation** of the SMART class equipment in all schools was primarily handled by the supplier/vendor. Overall, the smart class set-up was outsourced to the supplier vendor identified for the installation by the implementation partner.

To capture the observation of teachers on the type of improvements observed among the students after the initiation of the SMART class, a query was posed. The observed improvements among students were shared by the teachers as shown in the following graph.

Graph 4: Observed Improvements Among Students – After Initiation of Smart Class (N=4)



Since the initiation of Smart Class, teachers have observed increased student attendance and interest (2 schools), improved learning outcomes and higher enrollment (2 schools), better understanding and more questions from students (3 schools), and enhanced creativity through visuals and sound (1 school).

Many students have expressed that smart classes have allowed them to acquire knowledge through videos, animations, and audio. Visuals have helped them understand how machines work and how things move and happen. Almost all students have reported that they enjoy participating in digital classes and attend smart classes regularly. Teachers start by giving lectures and then use digital content or YouTube videos to further explain the topic to help students understand.

To effectively operate the smart class, training is crucial. All 4 teachers received training for operating the Smart Class or digital classroom setup. The training was provided by the company that installed the setup in association with the implementation partner representative. Most teachers found the training very useful (3) and while 1 found it useful.

Receipt of Digital Content

Out of 4 schools that received smart class or digital classroom support, only 2 received digital content for Science and Mathematics. The remaining 2 teachers did not receive any digital content.

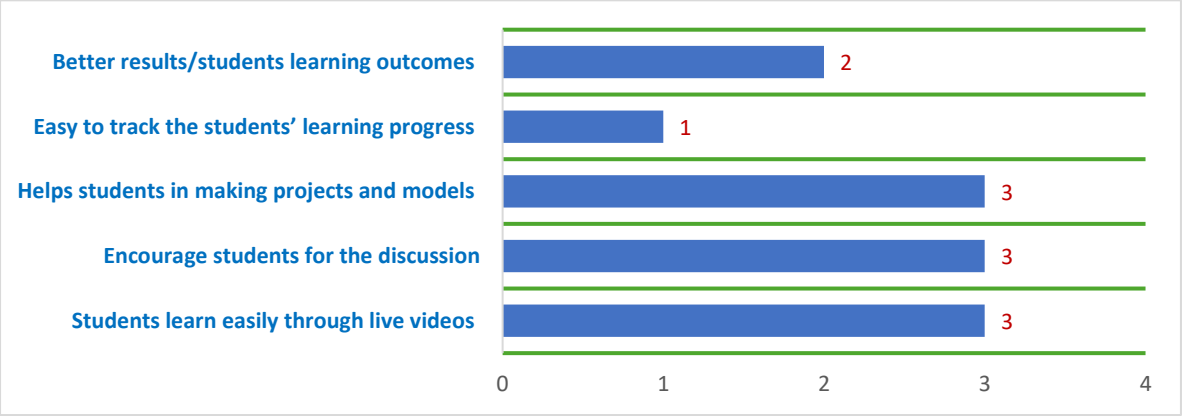
Teachers were asked if they felt comfortable delivering topics using digital content. Those who received digital content reported feeling fully comfortable using it during teaching, depending on the topic being discussed. The teachers' confidence in using digital content stems from being trained in teaching with digital methods. According to them, digital content aids in their teaching by providing effective visual learning, simplifying explanations of concepts, and creating a joyful learning environment.

For the other two teachers, it was observed that they had old digital content. However, without digital content, there is a high chance that smart-class equipment remains underutilized, limiting its effectiveness. To address this, schools should have been provided with comprehensive digital content across subjects to fully leverage the Smart Class and enhance learning.

Advantages of Using Digital Content

Teachers were asked about the key advantages of using digital content. Of the four teachers, three agreed that students are encouraged to discuss topics being taught to them in class, and three thought the students receive help in preparing projects and models after being exposed to the experiments and practicals they see in videos. The other advantages are shown in the following graph.

Graph 5: Advantages of Using Smart/Digital Class (N=4)

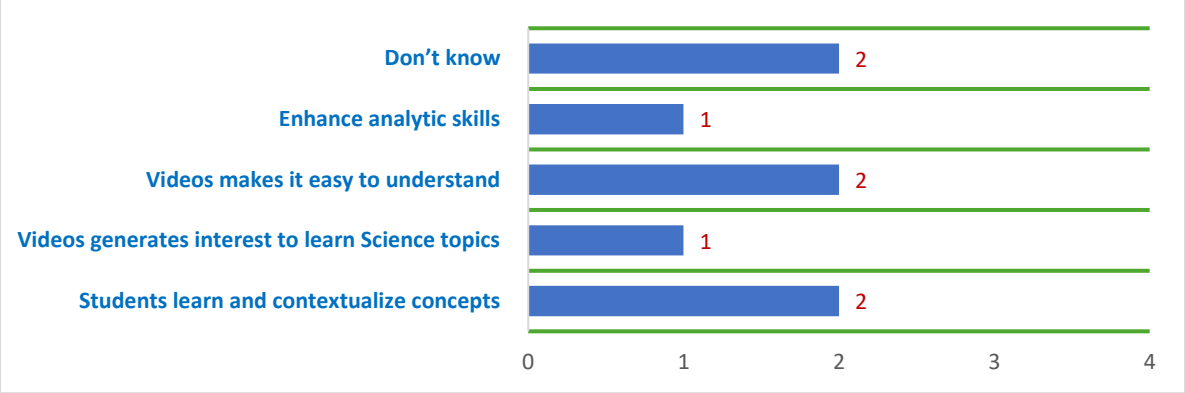


Two teachers had an opinion that students learn more effectively through live videos. Some teachers (2 out of 4) believed that it contributes to improved learning outcomes.

While discussing with students, almost all the students favoured smart classes for all the subjects. Many of them claimed that it is easier to learn topics and concepts through live demonstrations in the smart class. Moreover, the smart class offers you the chance to raise queries and clarify the doubts being generated in your mind. Half the students mentioned that we could prepare the projects related to the curriculum which were mainly encouraged through smart classes.

The teachers believed that digital content generates interest in subjects like Science and Mathematics among students. The following graph illustrates how digital content generates interest in different subjects.

Graph 6: How Digital Content Boosts Interest in Subjects (N=4)



Teachers note several benefits of using computer and digital content-based teaching. Two out of four teachers stated that students learn and contextualize concepts more effectively, while videos make Science topics more engaging and easier to understand. One teacher observed enhanced analytical skills among students due to smart class activity. However, two teachers were unsure about its impact on interest in STEM subjects or the overall classroom environment.

Two out of four teachers (50%) expressed that techno-pedagogy is very effective, while the remaining two were not sure and demonstrated their inability to say anything.

Teachers were also asked if the HDFC's support in setting up smart classes and promoting digital education through techno-pedagogy has demonstrated a significant impact. The responses are illustrated in the given graph.

Graph 7: Impact of Smart Class on Student's Regularity and Learning Outcomes (N=4)

Teachers observed several impacts of digital classes. Three out of four teachers reported that students became more regular, and two observed better attendance on days with digital classes. Additionally, two teachers noted improvements in learning outcomes and increased seating capacity in the classroom.

Overall, HDFC's support has significantly advanced educational practices by integrating digital tools, leading to better student attendance, increased engagement, and improved learning outcomes.

Type of Challenges for Smart Class

Teachers were asked to specify if they had observed any challenges. In response, some teachers identified a few common challenges with using smart or digital classes. One teacher each mentioned "limited seating", "power cuts (electricity supply)" and "equipment maintenance" as the most concerning challenges. Three teachers did not report any challenges.

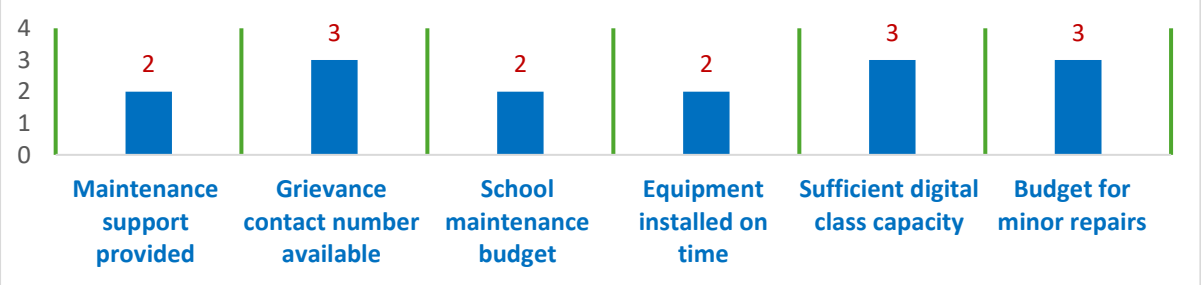
Students in all 4 schools confirmed these concerns regarding the irregular power cuts in their schools and limited seating in the digital classroom. Due to the power cuts, sessions are affected.

On inquiring about their satisfaction with digital classroom support, teachers expressed varying levels of contentment. One teacher expressed extreme satisfaction, and another reported being merely satisfied, while two were uncertain about their satisfaction level.

Teachers were asked if the support from HDFC Bank had brought any advantages to their schools. Overall, the support from HDFC Bank was seen as beneficial. The advantages included an enhanced school reputation due to the implementation of smart classes (1 teacher), improved marks and grades for the students (2 teachers) and increased enrollment (1 teacher).

Teachers were surveyed about the requirements for the successful operation of smart classes. The identified needs included access to maintenance support (2 teachers), mechanisms for addressing grievances (3 teachers), budget for repairs (3 teachers), and adequate seating capacity (3 teachers). The following graph depicts the current status of these key aspects for the smooth functioning of digital classes.

Graph 8: Needs for Smooth Functioning of Smart Class (N=4)



A concise summary, based on the responses of the smart class teachers as depicted in the graph, is presented as follows:

- ***Contact for Grievance Redressal:*** 3 out of 4 schools received a contact number for addressing grievances from the implementation partner but 1 school did not specify.
- ***Maintenance Budget***: 2 schools had a maintenance budget; 2 schools did not have any budget.
- ***Installation Timeliness:*** Equipment installation was completed on time in 2 schools; 2 schools experienced delays due to holidays and scheduled examinations.
- ***Seating Capacity Sufficiency:*** 3 schools claimed that the Smart/Digital Class capacity is sufficient for their student strength; 1 school did not agree with this fact.
- ***Budget for Minor Repairs:*** 3 schools had a budget for regular minor repairs (untied fund); 1 school did not have any budget.
- ***Quality of Equipment:*** Two out of four schools rated the equipment (LED interactive panel) as excellent, while 2 found it satisfactory.

Of the 7 schools surveyed, 4 had Smart Class installations with different technology equipment. However, only one teacher reported receiving digital content, which resulted in limited use of the Smart Class. Teachers are unsure about their comfort level and the challenges involved. Despite the timely installation and generally good-quality equipment, there are varying opinions on adequacy and effectiveness. Most schools have maintenance budgets and contact numbers for grievance redressal, and the setups are generally considered sufficient for the student population.

4.2.2 SCIENCE & MATHEMATICS LAB

Under FDP, information on the type of support provided to schools was obtained to assess the impact of the support. Discussions with principals and teachers disclosed that the sample schools were only supported with repair work and replacement of mild steel fabricated doors in Science and Mathematics labs. No academic support was provided for the students, such as models, equipment, charts, posters, etc.

In total, 5 out of 7 schools confirmed that support for Science and Mathematics labs was provided, with doors being repaired or replaced with new ones. In 3 schools, painting work and floors were repaired to allow students to use the lab efficiently without obstacles.

Students expressed that the support for repairing labs has enhanced their learning environment and improved their experience. Schools were provided with support that enhanced the overall look.

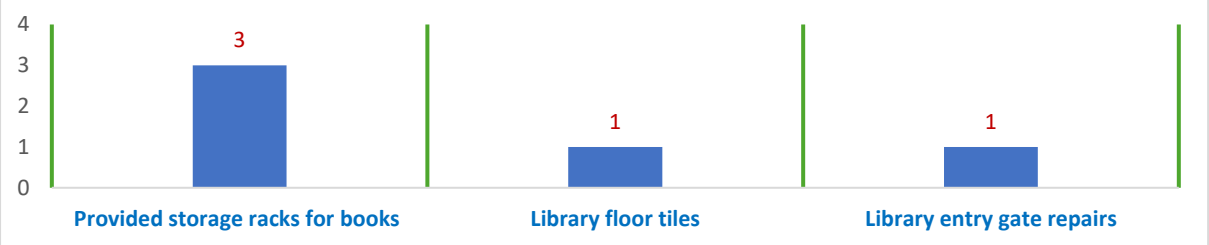
The assessment team could check the quality of work undertaken in the schools and found the quality good.

4.2.3 LIBRARY SUPPORT

While implementing the FDP in Punjab, HDFC Bank provided support for school libraries to enhance infrastructure and facilities. The main goal was to promote reading habits among students by upgrading library facilities and improving infrastructure.

Out of 7 schools, 4 schools confirmed receiving library support for the schools. Before receipt of support, two out of four schools (50%) had a good library with books and furniture for the students. The other two schools had the requirements for more support to enhance the student's interest in library books and reading habits. Out of the four schools, three received library support through the HDFC Grant. This support included storage racks for books, but none received renovation, latest books, or furniture as shown in the following graph.

Graph 9: Type of Library Support Received (N=4)

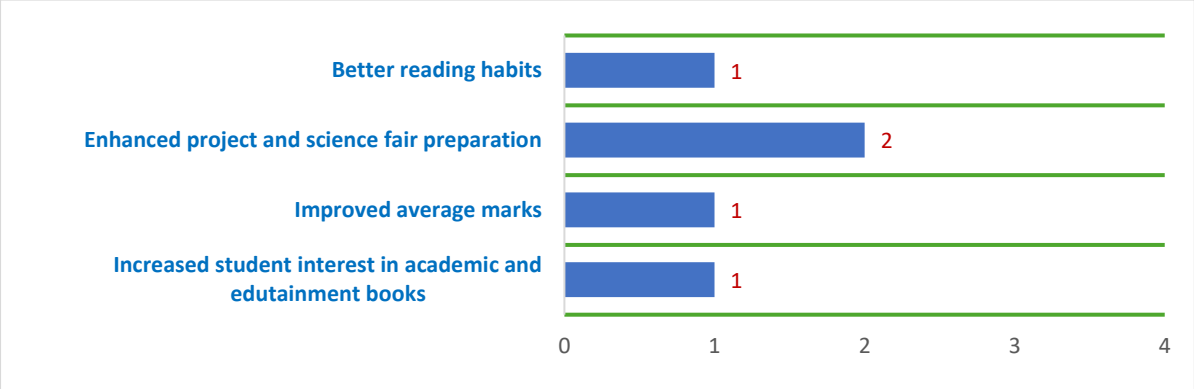


While the support enhances the storage of the library, it does not enrich the educational and reading-learning content.

Out of four schools, two had a designated library period in their timetable. One school had scheduled the library period for Grades 9-10, while the other school scheduled it for Grades 11-12. The library was mainly utilized by senior and secondary students, with middle-grade students (Grades 6-8) not having scheduled library periods. This could be due to prioritizing senior students preparing for board exams or a lack of suitable resources for younger grades.

Teachers had the opinion that library support did not provide additional benefits to students. They felt that some repairs and storage had supported the creation of an environment in the library where books available are placed and stacked appropriately. Moreover, the floor repair and fabricated steel gate repairs gave the appearance to the library. Some other benefits of the library perceived by teachers are shown in the following graph.

Graph 10: Ways Students Benefitted from Library Support (N=4)



The teachers' perception of the grant's support did not align with the actual type of support provided, but they were able to speculate on how library support could have benefited the students.

During discussions, most students expressed that they enjoy their library periods and like to read books and stories. A few students mentioned that they consider books as true friends and enjoy doing storytelling with their families. Additionally, many students shared that they take books from the library to read at home. Some students expressed concerns about the small size of the room where the school library books are kept. They mentioned that although stools are provided for sitting, there are not enough for everyone.

Further discussion provided the following summary:

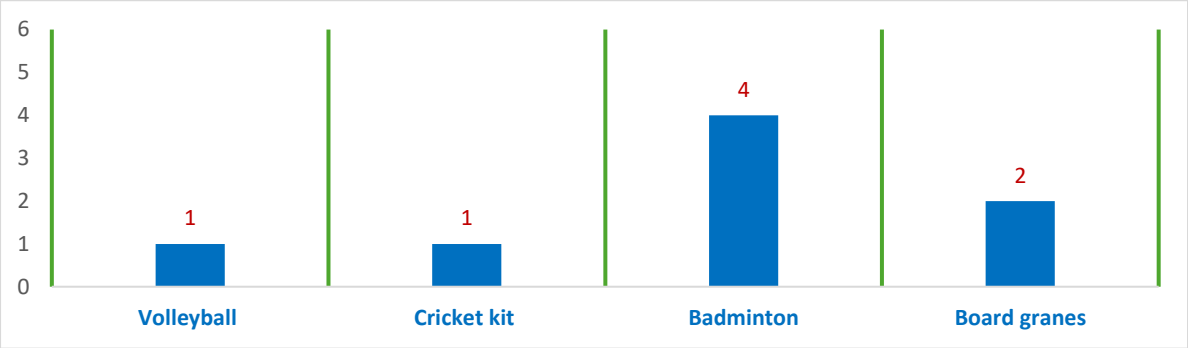
- **Library Functionality:** The libraries are currently functional in 3 schools only.
- **Timeliness of Materials Support:** The storage racks were provided on time, while one experienced delays due to exams and holidays.
- **Quality of Materials:** The quality of the work undertaken in the library and storage racks was considered to be good.
- **Sufficiency of Resources:** Teachers had an opinion that the available library resources are not sufficient for the students and updated books and reference materials are required.

The findings show that HDFC support only provided storage racks and repair assistance to the schools. However, the schools feel that there is a severe lack of educational resources such as books and reference materials for their current student population. This suggests that the libraries are under-resourced and there is an unmet need for more books, especially for different grade levels. In addition to storage and repair support, it would have been beneficial for the libraries to receive educational resources.

4.2.4 SPORTS SUPPORT

Out of the 7 schools included in the study, 6 have confirmed receiving sports equipment from HDFC support. Before receiving the HDFC support, all 6 schools (100%) had some sports equipment. Among these, only 2 schools had sports materials in good condition and were actively used by students, while 2 had sports materials that were in usable condition but not being used, and 2 schools needed sports items and materials. Under the support, the supplied sports materials have been illustrated in the following graph.

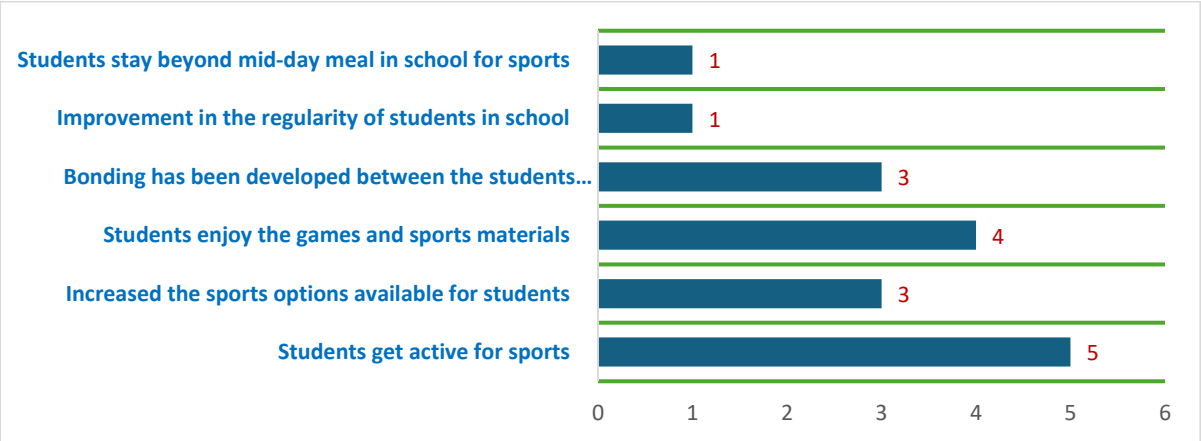
Graph 11: Sports Goods Received from HDFC Bank Support (N=6)



HDFC's support provided a significant quantity of new sports goods for the students which was mandatory for their physical and mental strengths. This has probably improved sports activities and fostered greater student engagement and participation in physical education.

All 6 schools (100%) agreed that the timetable has a sports period for students. Of these, 4 schools claimed that they organize annual sports events. On further exploration of the benefits of sports support, teachers highlighted significant benefits from enhanced sports opportunities, as shown in the following graph.

Graph 12: Benefits of Sports Goods (N=6)



Teachers have observed several benefits for students through sports materials and items, including - students enjoying the games and materials (mentioned by 4 teachers), students becoming more active (mentioned by 5 teachers), 3 teachers noting more options for sports are available for the students, and bonding among students developing.

All six schools agreed that the sports goods and materials were timely provided to the schools. However, three schools felt that sports materials provided were inadequate and insufficient considering the strength of students in the school. All schools rated the quality of sports goods as excellent.

During the discussions, students were found to be fascinated with sports goods, particularly badminton. Many students enjoyed playing board games and volleyball. No remarkable differences were seen between boys and girls; both were found to be equally interested in games, probably due to Punjab being a sports enthusiast state. Students expressed the desire for more sports items and games in the future. Some of the students mentioned that they become more active due to these games and feel more energetic. A few students expressed their aspiration to participate in state and national-level games to excel and win medals for their Punjab state.

Other discussions on timeliness and sufficiency etc. extracted the following summary:

- **Timely Delivery of Sports Materials:** 4 out of 6 schools reported that sports materials were provided within the committed timeframe.
- **Quality of Equipment:** Most teachers (4 out of 6) rated the quality of the equipment as excellent, and 2 teachers found it as satisfactory.
- **Adequacy for Student Strength:** 3 out of 6 teachers believed the supplied sports materials were sufficient for the number of students, while 2 teachers did not think that materials were sufficient.

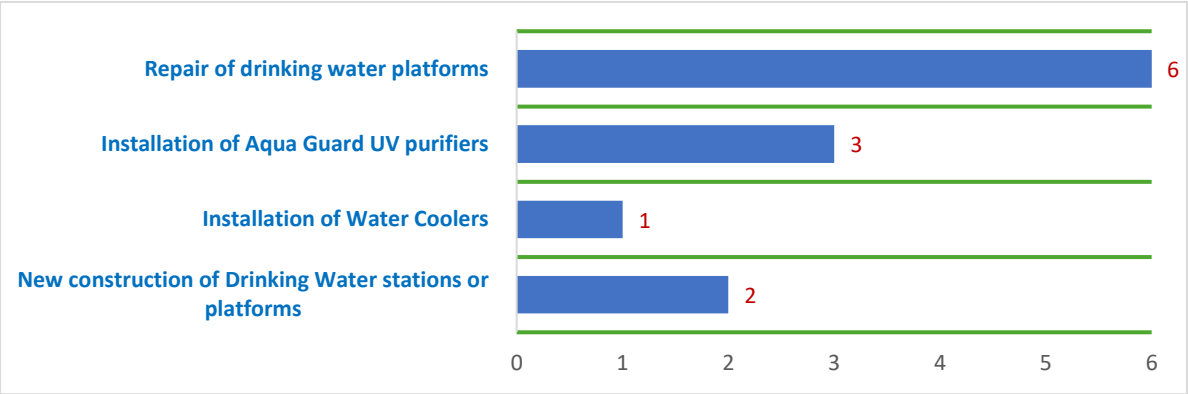
Out of the 7 schools, 6 received sports support from HDFC. Primarily, 4 of the schools received badminton sets, while 1 school each received a volleyball and a cricket kit. Some teachers expressed concern that the sports materials provided are insufficient for the current student population. The quality of the supplied sports materials was rated as excellent or satisfactory.

4.2.5 INFRASTRUCTURE SUPPORT – DRINKING WATER

Under the HDFC Bank support, all 7 schools were asked to specify the source of drinking water and other drinking water-related facilities available in the schools. Upon receiving the information, a physical verification was undertaken and provided with different support for the students. Out of 7 schools covered under the study, 6 schools reported receiving support related to drinking water under the project.

Of all 7 schools that accepted that they received the support, and a majority of schools (6) received the repairing of drinking water platforms and beautification in terms of paintings indicating the usefulness of water conservation. The following illustration depicts the type of support received by the schools.

Graph 13: Type of Support Received – Drinking Water (N=14)

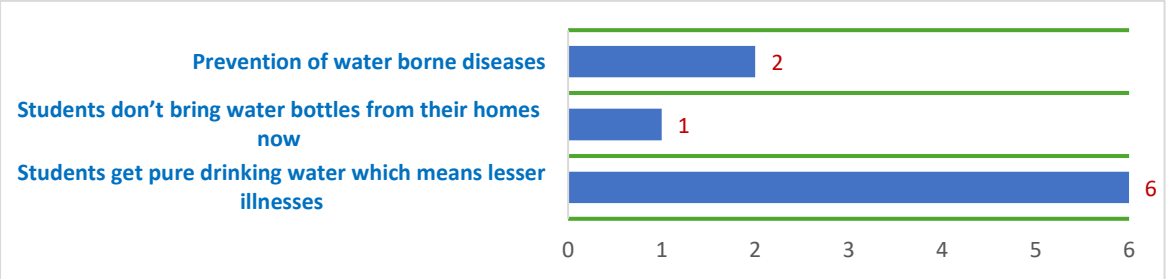


With the help of HDFC Bank support, three schools received water purifiers (RO) for drinking water, and two schools mentioned that they got newly constructed drinking water platforms duly painted with key messages on water conservation. Additionally, the principals mentioned that wall painting work, as well as construction of sheds, was also undertaken, which was either for repairing support or a replacement of the sheets used for the sheds.

Benefits from HDFC Bank Support

The principals and teachers reported multiple benefits to students by ensuring access to drinking water through HDFC Bank support as shown in the following graph.

Graph 14: Drinking Water Support Helps Students (N=7)



Overall, the support offered a variety of benefits, which included ensuring that students received pure drinking water through RO purifiers as reported by six out of seven schools. This led to reduced illnesses and the prevention of waterborne diseases. However, one school principal reported a reduction in students bringing water bottles from home, and two other principals perceived that students became less prone to water-borne diseases.

All principals confirmed that the facilities were provided within the committed timeline and agreed that the drinking water facilities are now sufficient for the students. However, two schools reported having a budget for regular minor repairs if required in future. Voicing on the quality of drinking water work done under the project, all principals rated the quality as good.

Students in FGDs were asked to share the impact of the drinking water facilities. All the students reported that the drinking water facilities are now clean and well-maintained, providing filtered water for drinking. Additionally, the students expressed their appreciation for the sheds repaired and constructed in the drinking water area, which are helpful during the summer and rainy seasons.

The assessment team noted that the drinking water facilities were provided promptly and were of high quality, meeting the needs of all schools. The support has been very beneficial and essential for the schools.

4.2.6 SUPPORT FOR REPAIRS & RENOVATION OF TOILETS

In Punjab, HDFC Bank provided the infrastructure development support for repairing and renovating school toilets and associated facilities to ensure students can utilise them. The purpose was to provide functional washroom accessibility to students, mainly girls and schools could offer usable and hygienic toilets for their students.

Out of 7 schools, all schools confirmed that toilet-related support was provided. One of the schools got a newly constructed toilet, but all remaining schools received the major repair works undertaken to make the toilets functional and accessible for the students. Among the seven supported schools, only one school already had usable toilets, four had broken floors, one did not have a water facility and doors, and all four were dirty and not usable. This indicates that the majority of schools had critical renovation and repair needs for the toilets.

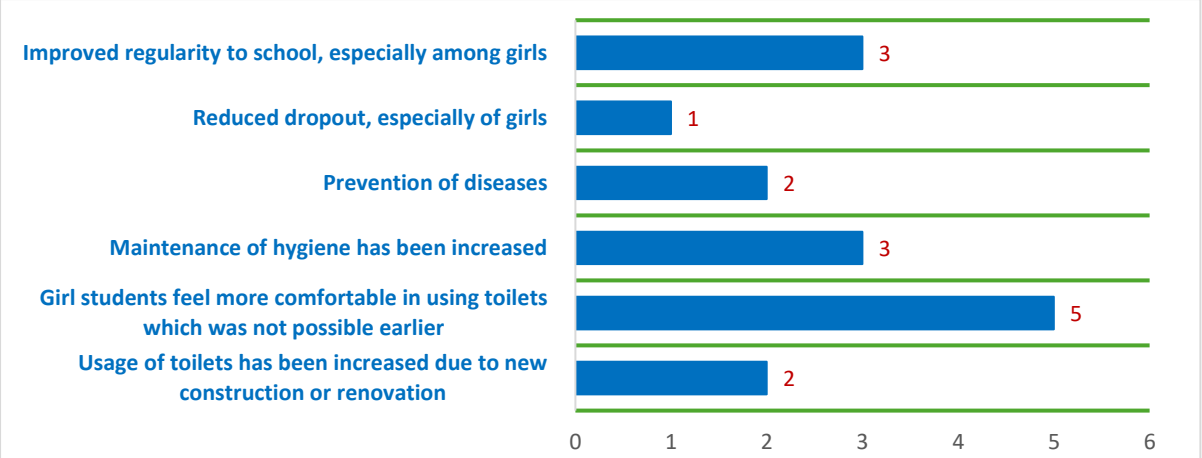
While discussion, teachers and principals revealed that major repairing works were undertaken in their schools and these types of works included the following:

(a) Repairing and plastering of floors
(b) Repairing or replacement of mild steel fabricated doors
(c) Provisioning of continuous water supply
(d) Installation of water points
(e) Wash basin installation
(f) Pavement sheds to toilets
(g) Walls painting
(h) External walls painted with messages on hygiene
(i) Electricity points repairs

It can be seen that multiple types of need-based support were provided to the schools, which was extremely urgent. Interestingly, HDFC Bank identified the needs of the schools and offered its support. Of course, this support has yielded benefits for the students and efforts were made to discuss this with teachers and principals.

Findings suggest that the offered support for toilets helped the students in terms of increased usage of toilets among the students. Female teachers in five schools had an opinion that girls feel comfortable using toilets just because of the improved infrastructure which was not possible earlier. How students benefited from the support is shown in the following graph.

Graph 15: Type of Benefits from the Toilet Support (N=7)



The improved facilities led to increased toilet usage in two schools, three schools saw better hygiene maintenance, two reported disease prevention, and three observed improved regularity, particularly among girls, with one school noting reduced dropout rates. The toilet has majorly benefitted girls students.

Timely construction: 5 out of 6 schools completed toilet construction within the planned timeline, reflecting efficient project management.

Sufficiency of Toilets: 5 schools reported that the number of toilets is now sufficient for the student population, indicating a significant improvement in infrastructure adequacy.

Budget for Maintenance: 4 schools have allocated a budget for cleaning and minor repairs, ensuring the sustainability and upkeep of the toilet facilities over time.

The timely construction of toilets in 5 out of 6 schools has made facilities adequate for students. However, only 4 schools have a budget for cleaning and minor repairs, suggesting a need for better maintenance planning and efforts.

The principals have generally expressed satisfaction with the quality of toilets work done through the HDFC Grant is generally high, with 4 out of 6 schools rating them as excellent and 2 as satisfactory. None reported poor quality, indicating successful improvements in sanitation facilities.

The surveyed schools had a significant need for improved toilets, which HDFC addressed effectively. Most schools (5/6) now have sufficient facilities, quality work, and budgets for maintenance. Principals are generally satisfied with the results.

4.2.7 INFRASTRUCTURE SUPPORT – BaLA (Building as Learning Aid)

Out of the seven schools, only two claimed that BaLa work was undertaken in their schools with support from HDFC Bank. The school walls were painted with artwork and characters conveying messages about academics and hygiene practices were shown. The support was provided based on the individual school's needs, taking into consideration their conditions and the availability of adequate space for BaLa paintings on the walls.

Conclusion and Recommendation

After reviewing the study findings, we have concluded the support provided to the schools and developed a set of recommendations. The following discussion presents the conclusions from the discussions with the principals, teachers, and students, as well as the recommendations for the upcoming projects.

4.1 CONCLUSION

A total of 7 schools were covered in the assessment and physically visited to assess the status of support in the schools. Under the assessment, the key respondents were principals, teachers and students who were the key beneficiaries of the support.

Principals of the 7 surveyed schools were all females and have been with their current school for 11–20 years, indicating stability and deep familiarity with their schools. A total of 14 teachers were also interviewed to gather information on the support as well as their perceptions of the support and its impact on the students and schools.

Smart Class or Digital Classroom

Among the 7 surveyed schools, 4 received Smart Class support from HDFC, featuring essential tech components such as LED screens and power backup. Teachers, predominantly experienced yet younger, reported an increment in students' interest in the subjects and attendance, with improvements in learning outcomes (marks and grades) and more engagement in the class due to a joyful environment. However, the lack of comprehensive digital content limits the full utilization of the Smart Class facilities. Due to this fact, all aspects purely depend on teachers' interest in using virtual sources to teach their students and demonstrate concepts and principles, etc. using newer digital content from private developers as well as educational bodies. Mainly teachers felt confident in using the smart class for teaching and explaining the topics. The varying opinions on digital content effectiveness and the uncertain challenges highlight a need for more consistent and extensive digital resources.

While the installation was reported as generally timely and the quality of equipment has been rated positively, the schools were concerned about the non-availability of budgets for the repairs of the equipment. Largely, schools are dependent on the available resources on the internet for teaching rather than focusing on available outdated digital content.

Library

Out of the 7 surveyed schools, 4 received library support from HDFC. Prior to receiving support, two schools had well-equipped libraries with books and reading corners, while the other two had minimal facilities with lesser usage of library resources. HDFC Bank support primarily included storage racks, with some additional renovations such as repairs or replacement of mild steel doors. None of the

schools were given new books or furniture for the library. Consequently, while the storage aspect was addressed, the libraries remain under-resourced in terms of educational content or resources for the students. Only two of the four supported schools incorporated library periods into their timetables, primarily for senior students, leaving middle-grade students without dedicated library time.

Many teachers believed the number of books and resources remains insufficient, impacting the overall effectiveness of the library. Overall, while HDFC Bank support has improved library functionality, significant gaps in educational resources persist.

Sports

Out of the 7 surveyed schools, 6 received sports equipment from HDFC. Before receiving HDFC support, all 6 schools had sports equipment, though conditions varied significantly. HDFC Bank grant provided additional sports materials, mainly badminton sets, with 1 school receiving volleyball and cricket kits.

Benefits from the sports-related support included increased student activities and interest in sports, improved variety of sports options, and better bonding among the students. Despite these positives, only one teacher was found who received training related to sports, which helped in organizing sports events and integrating sports periods into the timetable.

Drinking Water Support

Three schools received support, including new water stations and coolers. All principals confirmed timely provision and adequacy. This support ensured students had access to clean drinking water, reducing illnesses and preventing waterborne diseases in one school. Two schools have a maintenance budget, which is crucial for long-term sustainability. Quality was rated as excellent (2 schools) or satisfactory (1 school), reflecting a positive impact on student health.

Infrastructure Support (Toilets, Electrical Repairs and Sheds)

Before HDFC support, 4 of 6 schools had inadequate toilets. Post-support, 5 schools received timely construction and repairs, leading to improved conditions and increased usage, particularly among girls. Principals rated the improvements as excellent (4 schools) or satisfactory (2 schools), noting increased toilet usage and better hygiene practices. Other infrastructure support for making sheds and other upgradation work were good and needful.

Overall, while the support has positively impacted student engagement and activity, challenges remain in resource adequacy and maintenance.

4.2 RECOMMENDATIONS

1. **Smart Class:** Enhance technical support and training for teachers to optimize equipment use and digital content in smart classes.
2. **Library:** Expand book collections and educational resources and extend library hours for all students. Students need more books and reference materials for academic development as well as mental development.
3. **Sports:** Conduct a needs assessment to address insufficient equipment and allocate resources accordingly. An assessment will help in providing the need-based support for the schools considering the space and situation.
4. **Toilets:** Plan regular cleaning and maintenance to sustain sanitation efforts. Ensure budgetary provisions for the sustainability of the support.
5. **Drinking Water:** Install water filtration systems in all schools for clean drinking water.

Findings on the OECD Criteria

This chapter provides the impact assessment findings considering the OECD research framework or criteria to oversee the overall impact of the HDFC Bank-supported project on smart school development.

Relevance

The FDP has been marked as the most relevant program for supporting the government schools covered in Punjab covering 5 districts. In order to strengthen the digital learning in the government schools and to provide adequate infrastructure support to schools was a remarkable initiative by HDFC Bank. The schools were appropriately selected in discussion with the government department by the implementation partner. The type of support provided to the schools for infrastructure development was extremely relevant. **HDFC Bank support has been found strongly RELEVANT. This states that needs were identified, and schools were chosen based on the information obtained from the needs assessment with recommendations from the government department.**	5

Coherence

FDP has provided the valuable access to the students in many aspects such as smart classes to promote digital education. The students were also provided with the general knowledge and current affairs related information through smart classes. Additionally, students were provided with opportunities such as library facilities, sports items to play and through infrastructure support, repairing and renovation works for science and mathematics labs, toilets, drinking water platforms, installation of water filter were undertaken. All the principals, teachers and SMC members acknowledged the HDFC Bank infrastructure support to their schools that was extremely needful. The project not only provided the smart class but also provided the access to sports and library facilities that enhances the development of reading skills and overall personality. **The support from HDFC Bank was COHERENT, providing equal opportunity for students and better access to school facilities, leading to an enabled environment.**	5

Efficiency

The assessment team has rated the HDFC Bank project support to the government schools in Punjab as efficient with respect to reach of FDP. Principals and teachers shared the usefulness of support as well as how support has provided advantages to them and benefits to the students. All the students got equal opportunities of accessing the school resources such as smart classes and other infrastructure related facilties which got upgraded under FDP. The assessment team found the quality of infrastructure support to be good. The support was timely and necessary. However, there is room for improvement in the support for labs, libraries, and sports items. More books and reference materials are desired for the libraries, while the labs need more models, equipment, and charts. Additionally, better quality sports materials are required. Overall, the target schools received better infrastructure, but there is a need for more academic benefits for the students. **The FDP was identified as moderately efficient for the students as well as teachers.**	4

Effectiveness

The smart class support in terms of interactive LED panel helped all the students and teachers are using it as per the needs. All the smart class support was found functional. All schools should have been provided with the smart class support. The infrastructural support for science and mathematics labs and libraries, such as repairing floors and renovating doors, has been helpful. However, students did not directly benefit from these improvements. There was a missed opportunity to supply STEM lab resources and academic and storybooks for the libraries. Teachers were expecting more support for STEM labs and the library. Overall, the upgrade of infrastructure has benefited schools with developmental work. Schools have gained popularity, and students and teachers have benefited from non-academic aspects such as improved access to toilets, drinking water, cycle sheds, and fabricated gates. **Under this component, HDFC Bank-supported FDP has been found somewhat EFFECTIVE. Infrastructure support was beneficial and did not directly affect students' progress and achievements.**	3

Impact

The FDP has enhanced the visibility and accessibility of resources for schools and students. The introduction of digital classrooms or smart classes has had a significant impact, providing necessary support to students and leading to improved learning outcomes and increased knowledge as shared by teachers. Both principals and teachers have acknowledged the support provided by smart classes. The infrastructure support has provided equal access to school resources for both students and teachers. Effective infrastructure has increased the popularity of schools among students' families and community.	2.5

The support provided by HDFC Bank has been found to have less IMPACT on students. Teachers and principals have acknowledged that the only support that has improved student learning outcomes is the smart class initiative. Other forms of support have not had an impact on students' academic performance.	

Sustainability

All schools have received support to upgrade their infrastructure. However, in order to keep the resources for a longer period, the schools need to ensure they are properly maintained. If not, they will require support for maintenance, repairs, or replacements. Currently, schools only have a limited untied fund and no dedicated fund for the upkeep of the resources provided under the project.	2.5

Overall Average Score – 3.7 out of 5

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