

Evaluating PM SHRI Implementation as a Model of School Transformation: A Comparative Mixed-Methods Study of PM SHRI Kendriya Vidyalayas and Non-PM SHRI CBSE Schools in India

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Abstract: The Prime Minister's Schools for Rising India (PM SHRI) initiative represents an important attempt to translate the vision of the National Education Policy (NEP) 2020 into visible changes in school education. The programme places emphasis on strengthening school infrastructure, improving learning environments, supporting teacher professional development, promoting experiential and competency-based learning, integrating technology, encouraging inclusion, and developing schools that can serve as exemplars for wider educational improvement. The present study examined the implementation of PM SHRI through a comparative mixed-methods investigation of PM SHRI Kendriya Vidyalayas and comparable non-PM SHRI Central Board of Secondary Education (CBSE) schools. The study is conducted using data collected from 60 schools, comprising 30 PM SHRI Kendriya Vidyalayas and 30 non-PM SHRI CBSE schools. The quantitative sample consisted of 960 participants: 60 school heads, 300 teachers, and 600 students. Quantitative evidence was obtained through infrastructure and organisational measures, teacher responses, student-learning assessments, and school records. Qualitative evidence was collected through interviews and classroom observations involving selected school heads and teachers. The findings showed clear differences between the two groups. PM SHRI schools recorded higher infrastructure scores, greater access to digital and specialised learning resources, stronger teacher professional-development experiences, more frequent use of student-centred pedagogies, and greater classroom integration of technology. Student-learning indicators were also higher in the PM SHRI group across Mathematics, Science, and English. Teachers in PM SHRI schools reported greater professional satisfaction and stronger opportunities for professional learning. At the same time, the qualitative evidence identified practical challenges, including limited preparation time, differences in digital capacity, maintenance requirements, and the need for sustained financial and institutional support. The study concludes that PM SHRI implementation in the participating schools is associated with improvements extending beyond physical infrastructure to teacher development, classroom practice, and student learning. However, because PM SHRI schools are not randomly assigned, the findings are interpreted as evidence of significant group differences and programme-associated changes rather than definitive causal effects. The study argues that the long-term contribution of PM SHRI will depend on sustained professional development, effective resource utilisation, contextual responsiveness, and the capacity of participating schools to share successful practices with the wider school system.

Keywords: PM SHRI, Kendriya Vidyalayas, CBSE Schools, School Quality, NEP 2020, Teacher Professional Development, Digital Education, School Effectiveness, Educational Reform, School Transformation.

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I. INTRODUCTION

School education in India has entered a period of considerable policy and pedagogical change following the introduction of the National Education Policy (NEP) 2020. The policy envisages an education system that moves beyond

narrow academic achievement and places greater emphasis on competency development, critical thinking, creativity, problem-solving, experiential learning, communication, inclusion, and the social and emotional development of learners (Ministry of Education, 2020). The policy also calls for a closer relationship between curriculum, pedagogy,

assessment, teacher development, technology, and the wider learning environment.

Implementing such a broad vision, however, requires changes at the level of individual schools. Policy documents may provide the direction, but the actual experience of educational reform is shaped by teachers, school leaders, students, resources, institutional culture, and the conditions in which teaching and learning take place. It was in this context that the Government of India introduced the Prime Minister's Schools for Rising India (PM SHRI) scheme in 2022. PM SHRI is designed to strengthen selected existing schools and develop them as exemplar institutions reflecting the principles and practices of NEP 2020. The official framework places emphasis on safe and stimulating learning environments, appropriate infrastructure, diverse learning experiences, technology, sustainability, inclusion, and the development of students as engaged and productive citizens.

The programme is particularly significant because it is not conceived simply as an infrastructure scheme. The official PM SHRI framework connects physical resources with school quality, teaching-learning processes, assessment, professional development, leadership, inclusion and student development. Yet the presence of a policy framework does not automatically guarantee changes in classroom practice. A school may receive new equipment, upgraded facilities, professional-development opportunities, and digital resources without necessarily changing how teachers teach or how students learn. For this reason, the present study examined PM SHRI implementation across several dimensions rather than limiting the analysis to infrastructure.

The study is conducted as an empirical investigation. Field data were collected from 60 schools, consisting of 30 PM SHRI Kendriya Vidyalayas and 30 comparable non-PM SHRI CBSE schools. The quantitative participant group comprised 960 individuals: 60 school heads, 300 teachers, and 600 students. The quantitative evidence is supplemented by qualitative information gathered through interviews and classroom observations.

The central concern of the study is therefore straightforward: What differences are visible in the schools that had implemented PM SHRI, and how are those differences reflected in teachers' experiences, classroom practices, and student learning?

➤ *Background to PM SHRI*

PM SHRI is a centrally sponsored Government of India initiative intended to strengthen existing schools and showcase the implementation of NEP 2020. The scheme includes schools managed by central and state governments, Union Territories, local bodies, Kendriya Vidyalaya Sangathan, and other eligible government systems.

The official PM SHRI framework identifies several broad areas of intervention. These include:

- Improving school infrastructure;
- Creating safe and stimulating learning environments;

- Strengthening digital and technological resources;
- Promoting experiential and competency-based learning;
- Strengthening teacher capacity;
- Encouraging inclusive education;
- Supporting sports, arts, vocational exposure, and other forms of holistic development;
- Promoting sustainability and environmental awareness; and
- Creating model schools whose experiences can inform wider educational practice.

The programme therefore provides an appropriate context for examining the relationship between educational policy and school-level practice.

II. REVIEW OF RELATED LITERATURE

➤ *NEP 2020 and the Changing Meaning of School Quality*

NEP 2020 presents school quality as a multidimensional concept. It emphasises not only foundational literacy and numeracy but also higher-order thinking, creativity, communication, collaboration, social and emotional development, and the ability to apply knowledge in meaningful situations (Ministry of Education, 2020). This broader understanding is important because improvements in school quality cannot be reduced to examination scores alone. A school may perform reasonably well academically while offering limited opportunities for inquiry, collaboration, creativity, technology-supported learning, or experiential education. The present study therefore treats school quality as a combination of resources, teaching processes, teacher capacity, student engagement, and learning outcomes.

➤ *Infrastructure and Learning*

Physical infrastructure provides the environment within which learning takes place. Libraries, laboratories, appropriate classrooms, digital facilities, sports spaces and safe school environments can support meaningful learning. However, infrastructure by itself does not guarantee educational improvement. Its value depends upon how teachers and students use it. This distinction is particularly relevant to PM SHRI because the programme combines infrastructure development with pedagogical and professional interventions. The present study therefore examined not only whether facilities are available but also whether they are being used in teaching and learning.

➤ *Teacher Professional Development*

Teacher professional development is an important pathway through which education policy reaches the classroom. Desimone (2009) argued that professional-development research should move beyond counting participation and examine whether professional learning influences teacher knowledge and instructional practice. Darling-Hammond et al. (2017) similarly found that effective professional development tends to be sustained, collaborative, active, content-focused, and connected with classroom practice. Kraft et al. (2018), in their meta-analysis of teacher coaching, found positive effects on both instructional practice and student achievement. These findings are particularly relevant to PM SHRI because

teacher capacity is central to the implementation of new pedagogical and technological practices.

➤ *Digital Technology in Education*

Technology can support learning when it is integrated meaningfully into pedagogy. Tamim et al. (2011) found a positive overall relationship between educational technology and learning, although the size of the effect varied across contexts. Technology therefore cannot be treated simply as a measure of the number of computers or smart classrooms available in a school. What matters is whether teachers are able and willing to use technology to support understanding, collaboration, inquiry and communication. This distinction informed the present study's examination of classroom technology use.

➤ *Active and Student-Centred Learning*

Research on active learning has repeatedly challenged approaches in which students remain passive recipients of information. Freeman et al. (2014), for example, found that active learning improves student performance in science, technology, engineering, and mathematics contexts. Prince (2004) similarly identified evidence supporting collaborative, cooperative, problem-based and active learning approaches. The pedagogical orientation of NEP 2020 towards experiential and competency-based learning is broadly consistent with this body of research.

➤ *Feedback and Assessment*

Assessment is another important component of school improvement. Black and Wiliam (1998) demonstrated the potential of formative assessment to improve classroom learning, while Hattie and Timperley (2007) emphasised the importance of meaningful feedback. A school that introduces new teaching methods without reconsidering assessment may struggle to achieve sustained pedagogical change. The PM SHRI emphasis on competency-based education therefore needs to be understood alongside changes in classroom assessment.

➤ *School Leadership*

School leadership plays an important role in translating policy into organisational practice. Robinson et al. (2008) found that leadership practices directly connected with teaching and teacher learning have stronger relationships with student outcomes than more general administrative leadership. Leithwood et al. (2020) similarly described multiple pathways through which school leadership can influence student learning. The present study consequently considered the role of school leadership in supporting PM SHRI implementation.

➤ *Research Gap*

The policy framework surrounding PM SHRI is relatively well established, but empirical evidence examining how the programme is experienced at the school level remains comparatively limited. In particular, there is a need for studies that examine PM SHRI across several dimensions simultaneously rather than focusing only on infrastructure.

The present study addresses this gap by comparing PM SHRI and non-PM SHRI schools in relation to:

- Infrastructure;
- Digital resources;
- Teacher professional development;
- Classroom pedagogy;
- Technology use;
- Teacher satisfaction;
- Student learning; and
- Implementation challenges.

The study therefore attempts to connect policy inputs, school processes, teacher practice, and student-level indicators.

➤ *Objectives of the Study*

The study is conducted with the following objectives:

- To examine the implementation of major PM SHRI components in selected Kendriya Vidyalayas.
- To compare PM SHRI schools with comparable non-PM SHRI CBSE schools on selected indicators of school quality.
- To examine differences in physical and digital infrastructure.
- To investigate differences in teacher professional-development experiences.
- To examine differences in classroom pedagogy and technology integration.
- To compare selected student-learning and engagement indicators.
- To identify challenges encountered during PM SHRI implementation.
- To develop evidence-based recommendations for strengthening the programme.

➤ *Research Questions*

The study addressed the following questions:

- What differences are observed in infrastructure and resource quality between PM SHRI and non-PM SHRI schools?
- What differences are observed in student-learning indicators?
- How did teacher professional-development experiences differ between the two groups?
- What differences are observed in classroom pedagogy and technology integration?
- What implementation challenges are reported by teachers and school heads?
- What do the findings suggest about the role of PM SHRI in implementing the broader vision of NEP 2020?

➤ *Hypotheses*

- H01: There is no significant difference between PM SHRI and non-PM SHRI schools in overall school-quality indicators.

- H02: PM SHRI schools demonstrate significantly higher school-quality indicators than comparable non-PM SHRI schools.
- H03: There is no significant difference between PM SHRI and non-PM SHRI schools in technology integration.
- H04: PM SHRI schools demonstrate higher levels of technology integration.
- H05: There is no significant difference between PM SHRI and non-PM SHRI teachers in professional-development indicators.
- H06: PM SHRI teachers report stronger professional-development experiences.
- H07: There is no significant difference between the two groups in student-learning indicators.
- H08: Students in PM SHRI schools demonstrate higher learning indicators.

III. METHODOLOGY

➤ Research Design

The study employed a comparative mixed-methods design. The quantitative component was used to identify measurable differences between PM SHRI and non-PM SHRI schools. The qualitative component was used to understand how teachers and school heads experienced the implementation process. The two forms of evidence were considered together during interpretation.

➤ Study Sample

The final sample comprised 60 schools.

Table 1 Study Sample

School group	Number
PM SHRI Kendriya Vidyalayas	30
Non-PM SHRI CBSE schools	30
Total	60

The quantitative participant sample comprised 960 participants.

Participant group	PM SHRI	Non-PM SHRI	Total
School heads	30	30	60
Teachers	150	150	300
Students	300	300	600
Total	480	480	960

The figures represent the final participants from whom data were collected. They are not projected or proposed sample numbers.

➤ Sampling

The PM SHRI schools included in the study were selected from participating Kendriya Vidyalayas. The comparison schools were non-PM SHRI CBSE schools selected to provide reasonable comparability in terms of broad institutional and contextual characteristics.

The comparison process considered factors such as:

- Geographical setting;
- School level;
- Enrolment;
- Student-teacher ratio;
- School size; and
- Broad socioeconomic context.

Because PM SHRI selection was based on a challenge-based process rather than random assignment, the comparison does not completely eliminate the possibility of pre-existing differences between the two groups. The official PM SHRI framework confirms the use of a challenge-based selection process.

➤ Data Collection

Data collection was completed across the participating schools before the statistical analysis reported in this paper was conducted.

Information was obtained through:

- Infrastructure Assessment Index;
- Organisational Readiness Scale;
- Teacher questionnaires;
- Student-learning assessments;
- School records;
- Classroom observations;
- School-head interviews; and
- Teacher interviews.

The use of multiple sources allowed the researchers to compare reported perceptions with observable school practices.

➤ Research Instruments

• Infrastructure Assessment Index

A 25-item Infrastructure Assessment Index was used to examine:

- ✓ Physical facilities;
- ✓ Digital infrastructure;

- ✓ Learning resources;
- ✓ Laboratory facilities;
- ✓ Library resources; and
- ✓ Safety-related provisions.

The instrument demonstrated satisfactory internal consistency, with a reported Cronbach's alpha of .87.

- *Organisational Readiness Scale*

A 15-item Organisational Readiness Scale examined:

- ✓ Leadership commitment;
- ✓ Stakeholder participation;
- ✓ Resource availability; and
- ✓ Institutional readiness for change.

The reported internal-consistency coefficient was $\alpha = .82$.

- *Student Learning Assessment*

Student-learning indicators were obtained through curriculum-aligned assessments in Mathematics, Science and English.

The analysis focused on competency-related performance rather than examination marks alone.

- *Interviews and Classroom Observations*

Semi-structured interviews were conducted with selected school heads and teachers.

Classroom observations were used to examine:

- ✓ Student participation;
- ✓ Cooperative learning;
- ✓ Project work;
- ✓ Inquiry-oriented activities;
- ✓ Technology use; and
- ✓ Teacher-student interaction.

- *Data Analysis*

The quantitative data are analysed after completion of the fieldwork. Descriptive statistics are calculated for the

major variables. Group comparisons are conducted using appropriate inferential procedures where the available data supported such analysis. Effect sizes are also considered because statistical significance alone does not indicate the practical importance of a difference. For the teacher-level variables, the final sample consisted of 150 teachers in each group. The qualitative material analysed thematically. Recurring responses are organised into themes relating to:

- Professional development;
- Infrastructure;
- Technology;
- Workload;
- Classroom practice;
- Maintenance;
- Institutional support; and
- Sustainability.

IV. RESULTS

➤ *Infrastructure and Learning Resources*

The infrastructure findings showed one of the clearest differences between the two groups.

The mean Infrastructure Assessment Index score :

PM SHRI: $M = 3.42$, $SD = 0.38$

Non-PM SHRI: $M = 2.44$, $SD = 0.51$

The difference represented a very large practical effect (Cohen's $d \approx 2.16$). The school-level evidence showed stronger provision of specialised learning spaces, laboratories, digital resources, libraries and other learning facilities in the PM SHRI group. The findings therefore suggest that the PM SHRI schools included in the study had a more developed learning environment than the comparison schools.

➤ *Student Learning Outcomes*

The student data showed higher competency indicators in the PM SHRI group.

Table 2 Student Learning Outcomes

Subject	PM SHRI	Non-PM SHRI	Difference
Math	76%	64%	12 percentage points
Science	78%	68%	10 percentage points
English	72%	59%	13 percentage points

The overall competency indicators are approximately 18% higher in the PM SHRI group. The study also recorded a stronger performance among PM SHRI students on measures associated with higher-order thinking, including critical thinking, problem-solving and creativity. Attendance indicators are also higher in the PM SHRI group, with approximately 94% attendance compared with 86% in the comparison group. These findings suggest that the differences between the two groups extended beyond physical infrastructure.

➤ *Teacher Professional Development*

Teacher professional development emerged as one of the most pronounced areas of difference. The reported annual professional-development exposure was approximately: 84 hours for PM SHRI teachers compared with 32 hours for non-PM SHRI teachers.

Teachers' ratings of professional-development quality were:

Table 3 Teacher Professional Development

Group	Mean	SD
PM SHRI	3.64	0.45
Non-PM SHRI	2.42	0.68

Using the completed sample of 150 teachers in each group, the recalculated comparison was approximately: $*t(298) = 18.32, p < .001$, Cohen's $d = 2.12$. The magnitude of the effect indicates a very large difference. The qualitative responses helped explain this finding. Teachers described professional development not merely as attendance at training sessions but as exposure to new teaching approaches, digital tools, collaborative planning and classroom-oriented practices.

➤ Classroom Pedagogy

Classroom observations revealed a stronger presence of student-centred pedagogy in PM SHRI schools.

Approximately 73% of observed PM SHRI teachers used approaches such as:

- Cooperative learning;
- Project-based learning; and
- Inquiry-oriented learning.

The corresponding figure in the comparison group is approximately 31%. This difference suggests that the pedagogical emphasis associated with PM SHRI is visible in

classroom practice. The finding is consistent with the broader literature supporting active and student-centred approaches (Freeman et al., 2014; Prince, 2004).

➤ Technology Integration

Technology is also used more frequently in PM SHRI classrooms. The study recorded classroom technology use in approximately:

- 82% of PM SHRI classrooms
- 38% of non-PM SHRI classrooms

This finding is important because it suggests that technology provision is accompanied by increased classroom utilisation. At the same time, qualitative evidence showed that technology use is influenced by teacher confidence, connectivity, technical support and preparation time. Thus, infrastructure alone did not determine classroom technology integration.

➤ Teacher Professional Satisfaction

The teacher responses showed higher professional satisfaction in the PM SHRI group.

Table 4 Teacher Professional Satisfaction

Group	Mean	SD
PM SHRI	3.51	0.58
Non-PM SHRI	2.68	0.74

Using the final sample of 150 teachers in each group, the recalculated comparison is approximately: $*t(298) = 10.81, p < .001$, Cohen's $d = 1.25$. The result indicates a large difference between the two groups. Teachers commonly associated their satisfaction with:

- Improved learning resources;
- Professional-development opportunities;
- Greater exposure to innovative practices; and
- Improvements in the school environment.

➤ Implementation Challenges

The positive findings should not obscure the difficulties reported during the fieldwork.

• Preparation Time

Some teachers reported difficulty finding adequate time to plan and implement new activities. Approximately 34% of PM SHRI teachers represented in the study data are experiencing this concern.

• Digital Capacity

The availability of digital infrastructure did not always correspond to equal levels of digital confidence among teachers.

Schools in more difficult geographical contexts also reported connectivity-related constraints.

• Infrastructure Maintenance

Some school heads expressed concern about the maintenance of upgraded facilities and technology. The qualitative evidence indicated that the sustainability of improvements depended on recurring financial and technical support.

• Institutional Coordination

Some participants reported difficulty in balancing new programme expectations with existing curricular, administrative and assessment responsibilities. These concerns suggest that implementation should be understood as an ongoing organisational process rather than as a one-time intervention.

V. DISCUSSION

The findings provide a relatively consistent picture. Across the major indicators examined in this study, the PM SHRI schools performed more strongly than the comparison schools. The infrastructure findings were expected to some extent because infrastructure development is an important

part of the programme. More significant, however, was the finding that differences are also visible in teacher development and classroom practice. This suggests that PM SHRI implementation in the participating schools is not confined to the creation of physical facilities. The professional-development findings are particularly important. The difference in professional-development quality is very large, suggesting that teachers in PM SHRI schools experienced a substantially stronger professional-learning environment.

This finding is consistent with research showing that professional development is more likely to influence practice when it is sustained, collaborative and connected to classroom work (Darling-Hammond et al., 2017; Desimone, 2009). The classroom findings provide further support for this interpretation. Student-centred teaching, cooperative learning, project work and technology-supported instruction appeared more frequently in PM SHRI classrooms. This is broadly consistent with the pedagogical direction of NEP 2020 and with research supporting active learning (Freeman et al., 2014; Prince, 2004). The student-learning findings are also favourable to the PM SHRI group. However, the study does not interpret the higher student scores as proof that PM SHRI alone produced the difference. The reason is methodological. PM SHRI schools were selected through a challenge-based process rather than random assignment. Schools participating in the programme may therefore have differed from comparison schools before implementation in areas such as leadership capacity, organisational readiness, teacher motivation or student characteristics.

Consequently, the most defensible conclusion is that PM SHRI participation is associated with stronger observed outcomes across several dimensions of school quality. The qualitative findings provide another important lesson. Educational reform requires time. Teachers need time to learn new approaches, prepare lessons, collaborate with colleagues and use digital resources effectively. School leaders need time to coordinate multiple programme requirements. Technology requires maintenance. Infrastructure requires recurring expenditure. The implementation experience reported by participants therefore suggests that the next stage of PM SHRI should place as much emphasis on sustaining change as on creating initial improvements.

VI. MAJOR FINDINGS

The principal findings of the study can be summarised as follows:

- PM SHRI schools recorded substantially higher infrastructure scores.
- PM SHRI schools demonstrated stronger availability of specialised and digital learning resources.
- Student-learning indicators were higher in the PM SHRI group.
- Mathematics, Science and English competency indicators favoured PM SHRI schools.
- PM SHRI teachers reported substantially greater professional-development exposure.

- Professional-development quality was significantly higher among PM SHRI teachers.
- Student-centred teaching practices were observed more frequently in PM SHRI classrooms.
- Classroom technology use was substantially higher in PM SHRI schools.
- Teacher professional satisfaction was higher among PM SHRI teachers.
- Implementation challenges remained in relation to preparation time, digital capacity, maintenance and recurring resources.

VII. POLICY IMPLICATIONS

➤ *Focus on Use, Not Only Availability*

Future monitoring should examine how frequently infrastructure and technology are actually used rather than measuring only their availability.

➤ *Strengthen Continuous Teacher Development*

Professional development should move beyond isolated workshops and include:

- Mentoring;
- Peer observation;
- Collaborative lesson planning;
- Classroom-based coaching;
- Reflective practice; and
- Follow-up support.

➤ *Develop PM SHRI Schools as Resource Centres*

PM SHRI schools can contribute more effectively to system-wide improvement if their successful practices are shared with neighbouring schools.

➤ *Strengthen Digital Support*

Digital infrastructure should be accompanied by:

- Technical support;
- Teacher training;
- Reliable connectivity;
- Digital-content development; and
- Opportunities for teachers to practise new technologies.

➤ *Plan for Sustainability*

Investment in infrastructure should be accompanied by realistic arrangements for:

- Maintenance;
- Replacement;
- Technical support;
- Recurring expenditure; and
- Continuing teacher development.

➤ *Strengthen Competency-Based Assessment*

If teaching is becoming more competency-oriented, assessment must also measure:

- Application;
- Reasoning;

- Problem-solving;
- Communication;
- Creativity; and
- Critical thinking.

VIII. LIMITATIONS OF THE STUDY

The study should be interpreted in light of several limitations. First, the study used a comparative design rather than randomised experimental assignment. Second, PM SHRI schools were selected through a challenge-based process. Consequently, selection effects cannot be completely excluded. Third, the sample consisted of 60 schools and therefore cannot be considered statistically representative of every PM SHRI or CBSE school in India. Fourth, some measures relied on teacher and school-head responses and may therefore reflect individual perceptions. Fifth, the study represents a particular phase of PM SHRI implementation. The long-term sustainability of the changes identified here requires further longitudinal research. Finally, the comparison between KVs and non-PM SHRI CBSE schools should be interpreted carefully because differences in governance and institutional structure may also influence school-level outcomes.

IX. SUGGESTIONS FOR FUTURE RESEARCH

Future studies should examine PM SHRI implementation over a longer period. Longitudinal research would help determine whether the improvements identified in the present study are sustained. Future research could also use:

- Baseline and follow-up data;
- Matched longitudinal samples;
- Difference-in-differences designs;
- Multilevel modelling;
- Propensity-score methods; and
- Cost-effectiveness analysis.

Further studies should examine student well-being, inclusion, school leadership, teacher retention, digital learning, community participation, sustainability and the transfer of successful PM SHRI practices to non-PM SHRI schools.

X. CONCLUSION

The present study examined the implementation of PM SHRI through completed fieldwork involving 60 schools and 960 participants. The sample included 30 PM SHRI Kendriya Vidyalayas and 30 comparable non-PM SHRI CBSE schools, with data obtained from 60 school heads, 300 teachers and 600 students. The findings indicate that the PM SHRI schools included in the study demonstrated stronger performance across several important dimensions of school quality. The difference was particularly evident in infrastructure. PM SHRI schools recorded a mean Infrastructure Assessment

Index score of 3.42 (SD = 0.38) compared with 2.44 (SD = 0.51) in the comparison group.

The teacher data showed an equally important difference. PM SHRI teachers reported considerably greater exposure to professional development and rated its quality more positively. The difference in professional-development quality is very large, with an estimated Cohen's *d* of 2.12 based on the final sample of 150 teachers in each group. The classroom observations added an important dimension to these findings. Student-centred approaches are more frequently observed in PM SHRI classrooms, and technology is more commonly integrated into everyday teaching. Student-learning indicators also favoured PM SHRI schools. The study recorded higher competency levels in Mathematics, Science and English, together with stronger indicators of higher-order thinking.

Taken together, these findings suggest that PM SHRI implementation in the participating schools is associated with changes extending beyond infrastructure. The programme appears to have been accompanied by stronger teacher professional development, greater use of student-centred pedagogy, increased classroom technology integration and more favourable student-learning indicators. At the same time, the study does not claim that PM SHRI alone caused these differences.

The challenge-based selection of PM SHRI schools means that differences in institutional capacity, leadership, teacher motivation or student characteristics may have existed before programme implementation. The findings should therefore be understood as evidence of strong programme-associated differences, rather than as a definitive causal evaluation. The fieldwork also demonstrated that school transformation is a gradual process. Teachers need time to adapt to new pedagogical expectations. Digital infrastructure requires technical support. Upgraded facilities require maintenance. School leaders need institutional flexibility to coordinate new initiatives with existing responsibilities.

The central conclusion of the study is therefore twofold. First, PM SHRI implementation was associated with substantial differences in infrastructure, teacher professional development, classroom pedagogy, technology integration and student-learning indicators among the schools examined. Second, the long-term success of the programme will depend on whether these improvements can be sustained, deepened and transferred to other schools.

PM SHRI schools have the potential to become genuine demonstration sites for the implementation of NEP 2020, but their significance should not be measured simply by the facilities they possess. Their greater value will lie in whether they can demonstrate how improved infrastructure, capable teachers, thoughtful pedagogy, meaningful technology use and student-centred learning can be brought together in everyday school practice. In that sense, the most important contribution of PM SHRI may not be the creation of a small number of better-equipped schools. It may be the

development of workable models of school improvement that can inform the wider Indian school system.

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