

GOVERNING THE GAP: SCHOOL-LEVEL IMPLEMENTATION PLANS, ADMINISTRATIVE SUPPORT, AND STRUCTURAL MEDIATION OF CONTINUOUS PROFESSIONAL DEVELOPMENT MANDATE OF NEP 2020 IN CBSE SCHOOLS OF WEST TRIPURA

Bina Debi Harijan

Research Scholar

Department of Education, School of Social Sciences & Humanities, Om Sterling Global University, Hisar, Haryana (India)

ORC ID: 0009-0002-1264-261X

Jai Devi

Assistant Professor

Department of Education, School of Social Sciences & Humanities, Om Sterling Global University, Hisar, Haryana (India)

ABSTRACT

India's National Education Policy 2020 has introduced a fifty-hour annual Continuous Professional Development mandate as a cornerstone of its teacher reform agenda. Although the policy has received significant academic interest on the macro-level, little is known about the processes by which school administration converts this mandate into institutional practice, especially in semi-urban North-Eastern settings. Based on a cross-sectional survey of 276 elementary teachers in five block clusters of West Tripura, this study employs AMOS-based Structural Equation Modeling to determine whether School-Level Implementation Plans and administrative support predict pedagogical outcomes and professional needs of teachers. Findings affirm the existence of a strong positive correlation, and active administrative support, open tracking, and Professional Learning Communities are the most effective governance levers. The lack of digital infrastructure still compromises policy fidelity.

Keywords: NEP 2020 implementation; Continuous Professional Development; School Leadership; Educational Governance; Structural Equation Modeling.

I. INTRODUCTION

The National Education Policy 2020 is the most extensive restructuring of the Indian educational governance framework in over 30 years. One of the most operationally important of the many structural and pedagogical changes it suggests is the compulsory provision that all practising teachers, school heads, and teacher educators should complete at least fifty hours of Continuous Professional Development each year. This is not just a quantitative prescription; the NEP 2020 document frames this need within a wider philosophical reorientation - compliance-based, episodic in-service training to a model of sustained, self-directed, and institutionally embedded professional learning in line with the National Professional Standards for Teachers (Aithal, 2020; Patil, 2022). The dream is big. The policy imagines a teaching force that is not merely trained but constantly transformed, one that can mediate the transition between the rote-centered knowledge delivery model to the competency-based, experiential, and inclusive models of pedagogy that the 5+3+3+4 curricular framework requires (Aktar, 2021; Gaur, 2022).

What the policy fails to state with equal clarity, however, is the institutional channel by which this change is to take place. The fifty-hour requirement can be proclaimed in a policy document, but whether it will be a lived reality in any particular school is determined by a set of governance conditions that are not automatic and are not uniformly found across the varied educational environment of India. Practically, the mediation of centrally legislated CPD requirements into school-level professional practice is mediated by a stratified set of institutional variables - the orientation of school leadership, the presence of formal planning mechanisms, the quality of collaborative structures, the availability of infrastructure, and the extent to which professional development is actually institutionalized in institutional culture as opposed to being a logistical compliance exercise (Desimone, 2009; Garet et al., 2001).

This gap in implementation, between the letter of the policy and the reality of its implementation, is particularly acute in semi-urban and geographically peripheral educational institutions. The West Tripura district, located in the North-Eastern part of India, provides a rather educative case study in this respect. The district includes nine administrative blocks, including the comparatively well-endowed state capital of Agartala to the more resource-limited peripheral blocks of Hezamara, Jirania, Belbari, and Mandai. Schools in this district that are affiliated with CBSE are subject to a nationally standardised regulatory framework, but they exist within a context of linguistic heterogeneity, such as the presence of Kokborok, Bengali, and Hindi as community languages, limited and inconsistent digital infrastructure, uneven institutional capacities, and a teaching workforce with diverse professional preparation backgrounds (Chowdhury, 2017; Debbarma, 2023; Bhan and Panshikar, 2024). These contextual peculiarities imply that a policy formulated at the national level cannot be expected to operate in the same manner in all the schools that it is supposed to cover.

This gap is the main object of investigation. The research question is as follows: Does the construct of School Implementation Plans and Support, which the study operationalises in the form of twelve survey items in Section E of the data collection instrument, including active administrative encouragement, formal SLIP development, digital infrastructure provision, workshop support, structured monitoring, PLC organisation, collegial knowledge-sharing, leadership feedback, NEP 2020 alignment, CPD tracking, School Complex collaboration, and perception of infrastructure barriers, significantly predict what the study refers to as Teachers Practical Pedagogical Outcomes and Needs, based on Sections C and D of the survey. By analyzing this relationship with AMOS-based Structural Equation Modeling, based on data collected in a cross-sectional survey of N = 276 elementary teachers in five block clusters of West Tripura, the study will generate empirically based evidence regarding whether and how school-level governance mechanisms are determinants of the on-the-ground experience of professional development among teachers.

The Government of India has invested heavily in NISHTHA, DIKSHA, and SWAYAM as the main platforms of CPD delivery at scale. Training cycles on a national level have been undertaken, completion data have been monitored and administrative compliance sought. However, the disconnect between CPD attendance and CPD impact - between hours spent and pedagogical change realised - is a long-standing issue in the literature and in the lived experience of the teachers that studies such as this one attempt to give voice to (GV, 2018; Kalyani, L.K., 2024; Rahman, 2023). The thesis that this paper will develop is that this gap is not a major issue of training design or functionality of digital platforms. It is, in its essence, a governance issue - one that demands school leaders to shift their passive management of a mandate to active orchestration of a professional learning environment. The contribution that this study aims to make is to understand the particular dimensions of that governance challenge, and the particular mechanisms by which it can be addressed.

II. LITERATURE REVIEW

The Changing Paradigm of Teacher Professional Development

Any CPD governance discussion in the Indian context should be placed in the context of the wider international development of the understanding of professional development of teachers. The prevailing model of in-service training in India, as in most other national systems, during the 1980s and into the 1990s was what could be termed the training event model: periodic workshops, typically organised externally and centrally designed, in which teachers were supposed to take in and learn new knowledge and then go back to their classrooms to put it into practice. One of the first to explicitly question the assumption that teacher change starts with training was Guskey (1986); his model inverted the traditional sequence, claiming that teachers change their beliefs and attitudes when they see positive changes in student outcomes that are a consequence of changed practice - and that changed practice, in turn, can only occur in an enabling institutional environment. The training event is an isolated event without the enabling conditions and has little impact on classroom activities.

A large body of subsequent research has developed and extended this reconceptualisation. In a widely-read review, Borko (2004) mapped the landscape of research on professional development and suggested a systemic conception of teacher learning - one that does not view the individual teacher as the unit of analysis but as a member of a complex professional community within a school organisation. Avalos (2011) followed the history of thinking about professional development over a decade and came to the same conclusion: that teacher agency and organisational support are not independent variables, but are mutually dependent, and that institutional structures either facilitate or inhibit the exercise of individual professional agency. Clarke and Hollingsworth (2002) added the Interconnected Model of Professional Growth, which highlighted the external domain - the institutional context of resources, leadership, and collegial culture - as the main setting that either triggers or hinders personal professional learning.

GV (2018) has critically reviewed CPD policy documents and scholarly literature in the Indian context, and discovered that the prevailing paradigm of teacher professional development in India has been clinging to the episodic, compliance-based model despite the international research community shifting decisively to sustained, collaborative, and job-based models. The policy goal of institutionalising fifty hours of annually structured, self-directed professional learning is a truly radical paradigmatic change in what has traditionally been anticipated of Indian teachers and their schools. However, as GV (2018) claimed, this change cannot be implemented by mere power of a policy statement; it must be accompanied by a change in the culture of governance of individual schools.

Professional Learning Communities and Governance of Collaborative Practice

The Professional Learning Community is one of the most widely researched tools to incorporate sustainable professional development in school organisations. The concept of PLC as elaborated in the educational literature is a systematic and continuous type of collective professional inquiry where teachers in a school or a group of schools collaborate to investigate their own practice, analyse student learning data, and come up with solutions to instructional problems. This model has a strong evidence base. In a national survey study in the United States, Garet et al. (2001) found collective participation to be one of five structural characteristics of effective professional development versus ineffective forms, and contend that shared professional learning in institutional communities brings about more lasting changes in instruction than individualised training. Based on this work, Desimone (2009)

further developed the conceptual framework of studying CPD effectiveness and concluded that the dimensions of coherence, active learning, duration, and collective participation of professional development are the most important predictors of teacher-level change.

Kennedy (2016) synthesised a large amount of experimental and quasi-experimental studies on professional development and found that the programmes that had the most consistent relationship with observable changes in teaching practice were those that involved teachers as active participants in job-based learning within collegial cultures, and not as passive consumers of externally provided training content. Bautista and Ortega-Ruiz (2015) based on international comparative evidence also discovered that professional development systems structured around sustained collegial inquiry, as opposed to individual training events, were most apt to generate instructional improvement in a variety of national settings.

To its credit, the NEP 2020 framework has directly included a variant of this model in the form of the School Complex provision, which promotes clusters of neighbouring schools to share resources, exchange expertise, and undertake joint CPD activities. On paper, this represents an important structural recognition of the need for collaborative professional governance. In reality, though, the process of operationalisation of School Complex collaboration has been uneven nationwide and, as the current study will demonstrate, especially so within the blocks of West Tripura. In their study of CPD in the context of curriculum reform in Ireland, Porcenaluk et al. (2023) discovered that the existence of a collaborative framework in policy does not necessarily lead to collaborative practice in schools; it must be actively invested in by the leadership to establish the trust, time, and purpose of shared functioning that authentic PLC functioning requires. In their research on the topic of administrator-teacher interactions in the context of professional development feedback, Poulou et al. (2023) came to rather similar conclusions, as the quality of leadership engagement turned out to be the most consistent variable that defines whether collaborative frameworks can be translated into an improvement in instruction.

Instructional Leadership and its role in closing the policy-practice gap

It has long been recognised in the educational leadership literature that the policy intention-classroom reality gap is most frequently filled in or left unfilled by school-level administrators. In an empirical study, which was carried out in the Indian context, Dutta and Sahney (2016) discovered that school leadership has a statistically significant indirect influence on student achievement, mediated by the quality of school climate and job satisfaction. These mediating variables are not accidental to CPD governance; they are the motivational and attitudinal climate in which teachers will either be meaningfully involved in professional development or will view it as an unwelcome administrative imposition.

Guskey (2002) built on his previous model of teacher change to suggest that effective professional development involves school leaders playing a dual role in that they must provide the enabling structural conditions in which learning can take place, and at the same time, they must also address the attitudinal and motivational aspects of teacher engagement. When such functions are overlooked, when administrators merely monitor hours of CPD completion without considering the quality of professional learning or how new knowledge is applied to classroom practice, the mandate turns into a procedural compliance exercise with no real pedagogical effect. Abakah (2023) put this dynamic into the context of motivational theory, suggesting that the investment of teachers in CPD is significantly a product of whether their institutional context indicates that professional development is actually appreciated and funded. In the case of the institutional signal of indifference, i.e. when CPD

is on a school plan but not actively encouraged, observed and debated, teachers will rationally choose a compliance-minimising orientation instead of an investment orientation.

Kumari and Prabha Pandey (2020) discussed the capacity-building ambitions of NEP 2020 in particular and suggested that without a paradigm shift in the way school administrators perceive their professional role, i.e. the shift towards compliance management rather than instructional leadership, the goals of the policy would not be achieved. In a study of the effects of NEP 2020 on professional development institutions, Bari and Goswamee (2024) discovered that the responsiveness of the institution to the demands of the policy was closely linked to the extent to which the leadership had internalised the philosophical commitments of the new framework, rather than merely its procedural requirements. Jen Renita binti Mappah (2024) contributed to this image by pointing out that even self-directed, reflective professional learning, which NEP 2020 explicitly encourages, requires an enabling structural environment that can only be maintained by engaged and responsive school leadership.

Digital Infrastructure Limits and the Architectural Situation of CPD Access

The question of digital infrastructure cannot be discussed outside of the context of governance of CPD in the Indian context. The DIKSHA and SWAYAM platforms, the core of the national model of scalable CPD delivery, assume a degree of consistent internet connectivity, device access, and digital literacy among teachers and administrators that cannot be assumed in all regions of the country, and definitely not in all blocks of West Tripura. In a dedicated research on e-governance in education management in Tripura, Debbarma (2023) reported that there are major gaps in digital infrastructure that restrict the successful execution of ICT-based educational programmes in the state. Debbarma and Momin (2025) also expanded on the governance aspects of elementary education in Tripura, where the local self-government structures and state administration have failed to offer the infrastructural conditions that digital ambitions at the policy level demand.

Ertmer and Ottenbreit-Leftwich (2010) investigated the obstacles to teacher technology adoption and discovered that institutional contextual factors such as the availability and reliability of technological infrastructure are some of the strongest predictors of whether individual teachers will develop the capacity and confidence to use technology in their professional practice. Bauwens et al. (2020) introduced a work-life aspect to this analysis, revealing that the readiness of teachers to participate in digital learning environments after school hours, which is implicitly dictated by the DIKSHA model of CPD completion, is largely determined by the institutional support mechanisms such as providing devices and managing expectations by school leadership.

In their creation of the TPACK framework, Mishra and Koehler (2006) offered a conceptual framework of why the provision of digital infrastructure is truly a governance activity and not a technical one. Technological Pedagogical Content Knowledge - the combination of technological competence and subject-matter knowledge and pedagogical skill - cannot be developed without more than access to devices or platforms. School administrators who offer infrastructure without offering concomitant pedagogical support, practice time, and collegial structures to support technology-integrated teaching are only skimming the surface of the issue. The role of governance is not to simply tie schools to the internet but to establish the institutional environment in which technological competence can be created and maintained.

The qualitative data collected in this study using Section F of the survey instrument in the particular context of West Tripura indicates that the limitations of digital infrastructure are not perceived as an abstract policy gap but as tangible daily frustrations. In all five block clusters, teachers have mentioned the unavailability of smart televisions, poor internet

connectivity, and unavailability of subject-specific digital teaching-learning resources as some of the most notable practical challenges they encounter when implementing CPD learnings in their classrooms. These are not issues that can be addressed by national platform design, but they need local governance solutions by school administrators who are serious about their role in offering functional professional learning environments.

Dyer et al. (2004) provided a valuable further insight by highlighting the role of local knowledge in effective in-service teacher development in India. They argued that the standardised, centrally-designed training modules which typify large-scale national CPD programmes, NISHTHA being a modern example, systematically underestimate the contextual expertise that experienced teachers acquire in reaction to their particular regional, linguistic and socio-cultural contexts. The CPD content most relevant to the professional issues faced by teachers in West Tripura, where first-generation learners with a wide range of linguistic backgrounds, including Kokborok-speaking tribal communities, are employed, might not be sufficiently addressed by generic national training programmes. School administrators who identify this gap and strive to create locally responsive CPD supplementation, be it in the form of school-based workshops, School Complex collaboration, or peer-learning structures, are undertaking a governance role of direct and substantial educational value. Kaushal (2024) reported the same issues in the context of mother-tongue medium instruction, and similar questions of the promotion of indigenous knowledge in the schools of Tripura have been discussed by Mondal and Bhattacharjee (2025), which supports the argument that contextual responsiveness in CPD is not a refinement but a real pedagogical need.

Opfer and Pedder (2010, 2011) offered, perhaps, the most detailed theoretical framework of the CPD effectiveness as a systemic and not an individual property. They contended in a series of influential reviews that the advantages of professional development are not due to any single attribute of training design but to the interplay between teacher learning orientations, school learning cultures, and the structural features of development activities. The construct of School Implementation Plans and Support is not a single administrative mechanism but the organisational ecosystem - the culture of leadership, structural planning, collaborative structures, monitoring systems, and infrastructural provision - within which the professional learning of the individual teacher is either developed or stagnated.

III. MATERIALS AND METHODS

Research Design and Theoretical Framing

The current research design is a descriptive cross-sectional survey, which was chosen based on the fact that it is suitable in recording the current state of attitudes, practices, and structural conditions of a specific population at a particular time, as well as allowing the researcher to examine relationships between constructs using multivariate statistical analysis (Creswell, 2011). The primary strand of the study is quantitative, and Structural Equation Modeling will be used to analyse the hypothesised relationship between the governance construct and pedagogical outcomes. One of the qualitative strands, based on the open-ended questions in Section F of the survey instrument, offers contextual texture and triangulatory support to the quantitative results.

The theoretical framework of the study brings together three related bodies of thought: the process model of teacher change developed by Guskey (1986, 2002) which places institutional enabling conditions as the precondition of professional growth; the conceptual framework of studying CPD effectiveness developed by Desimone (2009) which identifies the structural features of professional development that are most consistently related to

teacher-level change; and the systemic model of professional learning developed by Opfer and Pedder (2011) which treats CPD effectiveness as an emergent property of the interaction between institutional culture, structural design, and individual teacher orientation. Collectively, these frameworks underpin the main hypothesis of the study that school-level governance structures, operationalised as the SIPS construct, are an important predictor of the way teachers experience and gain out of CPD engagement.

Setting and Geographical Location of the study

The research is carried out in West Tripura district, which is one of the eight districts of Tripura state in North-Eastern India. The district has nine administrative blocks, which include Agartala, Dukli, Old Agartala, Mohanpur, Bamutia, Lefunga, Jirania, Belbari, Mandai and Hezamara. To conduct the survey and analysis, these blocks are divided into five geographic clusters, namely, Agartala; Dukli/Old Agartala; Mohanpur/Bamutia/Lefunga; Jirania/Belbari/Mandai; and Hezamara. The district has a unique educational geography, where the concentration of CBSE-affiliated schools is relatively high in and around the state capital of Agartala and more scattered, resource-constrained schools in the peripheral blocks. This internal heterogeneity renders West Tripura a rather suitable location to study the governance aspects of CPD implementation, as it will be possible to investigate how contextual variables mediate the connection between institutional support systems and the results of professional development.

The educational environment of the district is conditioned by a number of characteristics that make it different in comparison to more urbanised or better-equipped areas of India. The linguistic diversity, where Kokborok, Bengali, and Hindi are all used as community languages in various regions of the district, poses instructional challenges not always met by nationally standardised CPD content. Digital connectivity is still unequal, with the more peripheral blocks having frequent disruptions to internet connectivity and reduced institutional ICT infrastructure. Government and government-aided schools are more concentrated in the peripheral blocks whereas the private unaided schools are more concentrated in and around Agartala. These structural characteristics relate directly to the questions of governance that the study is concerned with.

Population and Sample

The study population will include all elementary teachers (Classes I to VIII) and school-level stakeholders, such as Directors, Principals, Elementary Wing Coordinators, Head Teachers, and Senior Teachers, who are currently working in CBSE-affiliated schools in the nine blocks of West Tripura district. The total population is estimated to be about 2,000 people in all the eligible schools. The minimum sample size calculated using the simplified formula of Yamane to calculate the sample size at a 95% confidence level with a 5% margin of error was 340 respondents; the study was validated at 380 to 400 responses, and about 600 to 650 questionnaires were distributed using online and offline methods to cover non-responses and incomplete responses.

The current dataset is analyzed on the existing dataset of $N = 276$ valid responses, which were collected on 7th May 2026 to 15th July 2026. The data collection is still in progress and the existing dataset is a substantive and analytically viable interim sample. Sampling was stratified random sampling by school type, gender, block cluster, and years of experience, with snowball sampling to enhance the representation of geographically peripheral blocks. Table 1 below shows the entire demographic profile of the $N = 276$ sample.

Table 1: Demographic Characteristics of Survey Respondents (N = 276)

Variable	Category	Frequency	Percentage (%)
Gender	Female	190	68.80
	Male	86	31.20
Age	20–30 Years	61	22.10
	31–40 Years	91	33.00
	41–50 Years	83	30.10
	Above 50 Years	41	14.90
Teaching Experience	Less than 3 Years	33	12.00
	3 to 5 Years	50	18.10
	6 to 10 Years	69	25.00
	More than 10 Years	124	44.90
Highest Qualification	D.El.Ed. / JBT / PTET	52	18.80
	B.Ed.	161	58.30
	M.Ed.	29	10.50
	Other	34	12.30
School Type	Private Unaided	131	47.50
	Government / Aided	145	52.50
Block Cluster	Agartala	147	53.30
	Dukli / Old Agartala	12	4.30
	Mohanpur / Bamutia / Lefunga	67	24.30
	Jirania / Belbari / Mandai	39	14.10
	Hezamara	11	4.00
CPD Mode	Fully Offline (In-person Workshops)	124	44.90
	Hybrid (Online + Offline)	105	38.00
	Fully Online (SWAYAM/DIKSHA)	47	17.00
NEP 50-Hr Mandate Awareness	Yes, fully aware	153	55.40
	Somewhat aware	99	35.90
	No, not aware at all	24	8.70

Source: Primary survey data, N = 276.

Survey Instrument

Primary data were gathered using a purpose-designed structured questionnaire that had 64 items that were divided into six sections. The researcher developed the instrument to fit this study based on the theoretical constructs that were found in the literature review and in accordance with the research objectives.

Section A gathers demographic and professional background data in eight questions (Q1 to Q10) such as age, gender, highest professional teaching qualification, years of teaching experience, block location, current designation, school type, number of CPD programmes attended in the last academic year, primary mode of CPD attendance, and knowledge of the NEP 2020 fifty-hour requirement.

Section B (Q11 to Q24) assesses NEP 2020 Vision Awareness on fourteen items on a four-point scale with the options of Not Aware and Fully Aware. Articles address the main goals of NEP 2020 in elementary education, the 50-hour CPD requirement, the transition to competency-based learning, familiarity with NPST, awareness of DIKSHA and SWAYAM, Foundational Literacy and Numeracy, inclusive education, mother-tongue instruction, assessment reforms, School Complex roles, cross-curricular pedagogy, the continuous and self-directed nature of CPD, CBSE circulars, and the 5+3+3+4 structure.

Section C (Q25 to Q38) is the Teachers Perception of the Fifty-Hour CPD mandate measured on fourteen items on a five-point Likert scale of Strongly Disagree to Strongly Agree. Items measure whether teachers believe the mandate to be a professional requirement, whether current CPD is relevant to their classroom needs, whether it has developed confidence in implementing new strategies, whether it is experienced as an administrative burden, whether it has assisted in the design of assessments, whether workshops are subject-specific, whether online platforms are perceived to be effective, whether CPD has enhanced technology integration skills, whether time management is a challenge, and whether training sessions are practically oriented or more theoretical.

Section D (Q39 to Q50) includes Teachers Suggestions and Needs of CPD quality improvement in twelve items on the same five-point Likert scale. Items address the need for digital technology and AI integration training, school-premises-based training, hands-on Foundational Literacy and Numeracy training, subject-specific pedagogical training, post-training follow-up and mentoring, the value of trainer experience, scheduling during non-instructional periods, provision of self-learning materials, specialised competency-based assessment training, peer-to-peer learning, socio-culturally contextualised content, and incentive or recognition structures.

The main independent variable block (Q51 to Q62) includes School Implementation Plans and Support, which are measured on twelve items on the five-point Likert scale. Q51 inquiries about the presence of active encouragement of CPD participation by school management; Q52 whether there is a formal SLIP with a CPD roadmap; Q53 whether sufficient digital or physical infrastructure is available; Q54 whether external workshops are supported by administrative means, e.g. duty leave or fee reimbursement; Q55 whether there is a structured mechanism to monitor the application of CPD learnings in the classroom; Q56 whether PLCs are regularly organised within the school; Q57 whether teachers share CPD insights with their colleagues; Q58 whether school leaders actively seek feedback on the quality of CPD; Q59 whether institutional CPD targets are aligned with NEP 2020; Q60 whether a transparent process is in place to track the implementation of CPD learnings in the classroom; Q61 whether the school operates under the School Complex model; and Q62,

which asks whether the absence of physical or digital infrastructure is a significant impediment, and which is reverse-coded in the analysis.

Section F (Q63 and Q64) includes two open-ended questions: Q63 requires teachers to explain the greatest practical difficulty they encounter when implementing CPD knowledge in their classrooms, and Q64 asks them to suggest one particular topic or area of skills that they are most in need of training under NEP 2020.

Procedural remedies suggested by Podsakoff et al. (2003) to overcome the risk of common method bias in self-report data were implemented in the design of the instruments, such as the use of various scale anchors to predictor and criterion items and the positioning of governance support items (Section E) after all perception and suggestion items (Sections C and D) in the questionnaire.

Analytical Framework: Structural Equation Modeling

Structural Equation Modeling with IBM AMOS was used to test the hypothesised structural relationship between the exogenous latent construct School Implementation Plans and Support (SIPS, operationalised by Q51 to Q62) and the endogenous latent construct Teachers Practical Pedagogical Outcomes and Needs (TPON, operationalised by Sections C and D items). SEM was chosen instead of simpler multivariate methods since it estimates the measurement model, which measures the reliability and validity of the latent construct operationalisation, and the structural model, which measures the directional path relationship between constructs, in one integrated analytical framework (Hair et al., 2019).

Composite Reliability (CR, threshold 0.70) and Average Variance Extracted (AVE, threshold 0.50) were used to evaluate the measurement model based on the criteria of Fornell and Larcker (1981). The Heterotrait-Monotrait (HTMT) ratio was used to measure discriminant validity, and the threshold of 0.85 was taken as suggested by Henseler et al. (2015). The overall model fit was compared to the following traditional indices: Comparative Fit Index ($CFI \geq 0.95$), Tucker-Lewis Index ($TLI \geq 0.95$), Root Mean Square Error of Approximation ($RMSEA \leq 0.08$), and Standardised Root Mean Square Residual ($SRMR \leq 0.08$), as defined by Hu and Bentler (1999).

IV. RESULTS

Overview of Sample Characteristics

The N = 276 sample represents a demographic representation that is generally representative of the features of CBSE elementary teaching workforces in semi-urban North-Eastern India. The majority of the respondents are female (68.8%), which is in line with the feminisation of elementary teaching in India and especially in Tripura. The age group of 31 to 40 years (33.0%), and 41 to 50 years (30.1) are the two largest age groups, indicating a relatively experienced and middle-aged sample. The experience distribution supports this impression: 44.9% of the respondents have over ten years of teaching experience, and another 25.0% have between six and ten years of experience, which implies that almost seven out of ten respondents have at least six years of professional experience. The modal qualification is B.Ed. (58.3%), which aligns with the current trend of pre-service preparation of elementary teachers in the area.

A small majority of the respondents (52.5) are in government and government-aided schools, and the remaining 47.5 are in private unaided schools. Agartala block cluster is the most overrepresented (53.3%), which is due to the higher concentration of CBSE schools in the state capital and the increased accessibility of respondents in the same place. The

Mohanpur/Bamutia/Lefunga cluster has the next highest share (24.3%), and the peripheral clusters of Jirania/Belbari/Mandai (14.1%), Dukli/Old Agartala (4.3%), and Hezamara (4.0%) all have slightly less than a quarter of the sample, indicating the logistical difficulty of collecting data in more geographically dispersed areas.

One of the findings of immediate governance relevance is the CPD mode distribution. Just 17.0% of the respondents use fully online CPD as their main training method, although DIKSHA and SWAYAM are the flagship delivery platforms of the national CPD framework. The vast majority are using CPD in fully offline (44.9%) or hybrid (38.0%) formats. This distribution is not merely a product of personal choice; it records the practical fact that digital infrastructure limitations in much of West Tripura render full online CPD inaccessible or unreliable to a significant part of the teaching population. The awareness image of the NEP mandate is also quite ambivalent: 55.4% indicate that they are fully aware of the fifty-hour requirement, but 35.9% are only partially aware and 8.7% indicate that they are not aware at all, which begs the question of how far the official communication channels reach even in the case of a legislated, time-bound professional requirement.

Measurement Model Results

The measurement properties of the two latent constructs were evaluated before moving to the structural path analysis. SIPS construct, which was operationalised by using Q51 to Q62 (Q62 reverse-coded) had a Composite Reliability of CR = 0.87 and an Average Variance Extracted of AVE = 0.51, both of which met the traditional minimum requirements (Fornell and Larcker, 1981). SIPS indicators had standardised factor loadings of 0.45 (Q53, digital infrastructure) to 0.72 (Q51, active administrative encouragement), all of which were statistically significant at $p < 0.001$. The TPON construct, operationalised by the Section C and D items, had CR = 0.85 and AVE = 0.50, which is once again within minimum requirements. TPON indicators had a factor loading of between 0.57 and 0.75, all significant at $p < 0.001$. The SIPS and TPON had a HTMT ratio of 0.62, which is significantly lower than the conservative 0.85, and this indicates that there is discriminant validity between the two constructs (Henseler et al., 2015).

The overall model fit indices for the final structural solution were as follows: CFI = 0.95, TLI = 0.94, RMSEA = 0.065 (90% CI: 0.05–0.08), and SRMR = 0.072. These values show that the model fits well and meets the criteria suggested by Hu and Bentler (1999), which gives a good psychometric foundation to the interpretation of structural path estimates.

Structural Path Results

The structural equation between SIPS and TPON produced a standardised path coefficient of 0.58 ($p < 0.001$) that explained $R^2 = 0.34$ of the variance in the dependent construct. Put in another way, about a third of the difference in the way teachers perceive, use, and describe needs in relation to their professional development is explained by the governance structures their schools have or have not implemented. It is a result of a significant practical significance - it shows that the institutional governance climate, which can be directly manipulated by school leaders, is a material predictor of teacher-level CPD experience, regardless of individual teacher attributes.

The indicator-level factor loadings in the SIPS construct provide a differentiated image of which governance mechanisms are the most weighty. Active administrative encouragement (Q51, $\beta = 0.72$) and transparent CPD progress tracking (Q60, $\beta = 0.70$) are the two strongest governance indicators, followed by structured PLC organisation (Q56, $\beta = 0.66$), formal SLIP development (Q52, $\beta = 0.63$), and School Complex collaboration (Q61, $\beta = 0.61$). The middle

level of governance significance is comprised of leadership feedback collection (Q58, $\beta = 0.60$), structured monitoring mechanisms (Q55, $\beta = 0.59$), and administrative workshop support (Q54, $\beta = 0.56$). The alignment of CPD targets (Q59, $\beta = 0.54$) and collegial knowledge-sharing (Q57, $\beta = 0.51$) are positive but less strong contributors to NEP 2020 alignment. The indicator of digital infrastructure provision (Q53, 0.45) has the lowest positive loading in the construct, and the reverse-scored infrastructure barrier item (Q62) loads at 0.69, which means that the obstacles related to infrastructure are highly experienced in the sample. The complete factor loading structure is presented in Table 2.

Table 2: SIPS Construct - Standardised Factor Loadings (N = 276)

Item	Description	Std. β	p-value
Q51	Active admin encouragement of CPD	0.72	<0.001
Q60	Transparent CPD progress tracking	0.7	<0.001
Q62(R)	Infrastructure barrier perception	0.69	<0.001
Q56	PLC organisation within school	0.66	<0.001
Q52	Formal SLIP with CPD roadmap	0.63	<0.001
Q61	School Complex collaboration	0.61	<0.001
Q58	Leadership feedback on CPD quality	0.6	<0.001
Q55	Structured CPD monitoring	0.59	<0.001
Q54	Admin support for external workshops	0.56	<0.001
Q59	NEP 2020 alignment of CPD targets	0.54	<0.001
Q57	Collegial CPD knowledge-sharing	0.51	<0.001
Q53	Digital infrastructure provision	0.45	<0.001

Note: (R) = reverse-coded item. All loadings that are significant at $p < 0.001$.

Table 3: Structural Model Summary (N = 276)

Parameter	Estimate
Structural path: SIPS $\rightarrow$ TPON (β)	0.58
Variance explained (R^2)	0.34
Composite Reliability — SIPS	0.87
Composite Reliability — TPON	0.85
AVE — SIPS	0.51
AVE — TPON	0.5
HTMT Ratio (SIPS, TPON)	0.62
CFI	0.95
TLI	0.94
RMSEA	0.065

SRMR	0.072
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Note: All estimates are N = 276; structural path significant at $p < 0.001$.

Section C and D Descriptive Patterns

Although not the main analytical focus of the SEM analysis, the descriptive results of Sections C and D are important contexts in the interpretation of the structural results. Among the 276 respondents, a significant majority of them agreed or strongly agreed that the fifty-hour CPD requirement is a positive and necessary measure towards professional development (Q25) and that they have become more confident in their ability to use new teaching strategies as a result of attending CPD programmes (Q27). These reactions suggest that the mandate is not inherently opposed; teachers generally embrace its professional justification. Simultaneously, the time-challenge item (Q33 — that it is hard to manage fifty hours and regular duties) and the subject-relevance gap item (Q30 — that existing CBSE or school workshops do not sufficiently meet subject-specific needs) also received a significant amount of agreement. The broad normative acceptance and practical dissatisfaction with the quality of current delivery is a significant result: it indicates that the governance issue is not the resistance of teachers to CPD, but the enhancement of the quality, relevance, and institutionalization of CPD that teachers already desire.

Section D answers demonstrate a coherent pattern of teacher-articulated governance preferences. There was a high level of agreement throughout the sample on training on school premises during non-instructional times (Q40, Q45), on subject-specific pedagogical content as opposed to generic theory (Q42), on post-training follow-up and mentoring (Q43), on practising teachers as CPD trainers as opposed to external academics (Q44), on the provision of self-learning materials (Q46), on peer-to-peer learning structures (Q48), and on CPD content that embraces the socio-cultural realities and local languages of Tripura (Q49). The trend in responses in Sections C and D combined indicates that teachers in West Tripura are not requesting more CPD; they are requesting more contextually relevant, better governed, and institutionally embedded CPD - a difference that has significant implications to the interpretation of the governance mandate of school administrators.

This picture is supported and elaborated by the qualitative answers in Section F (Q63). Three common challenges were identified by teachers in all five block clusters: the disconnect between what they are taught in training sessions and what they can practically do in their classroom situations (one respondent described it as the theory to practice gap); the lack of digital infrastructure such as smart televisions, reliable internet, and subject-specific PPTs; and time constraints due to syllabus pressure, large classes, and insufficient non-instructional time to complete CPD and practice. A number of the respondents in the peripheral blocks specifically mentioned that there is no proper monitoring after training and that there is no institutional mechanism to facilitate the transfer of newly acquired strategies into classroom practice. These qualitative observations are consistent with the SEM results on the significance of monitoring (Q55) and transparent tracking (Q60) in the governance framework.

V. DISCUSSION

How the Governance Gap Works in Practice

The main conclusion of this research, that the School Implementation Plans and Support construct explains 34% of the variation in the practical pedagogical outcomes and professional needs of teachers, must be interpreted not as an abstract statistical finding but as

an empirical validation of a governance issue that the qualitative responses in this data set render visible and particular. When a teacher in a peripheral block writes that the most important obstacle to implementing CPD learnings is the lack of smart TV and PPT use, she is writing about a failure of administrative governance, namely, the failure of school leadership to make the physical conditions to implement newly learned digital pedagogy available. When the other teacher cites theory to practice gap as her main problem, she is referring to the lack of the monitoring, mentoring, and follow-up processes that the governance construct embodies in Q55 and Q58. When a third respondent writes that her most important constraint is the lack of continuous peer support, she is recording the ineffectiveness of PLC structures that were recorded in Q56 and Q57. These individual voices are provided with a structural meaning by the SEM findings: these are not individual grievances but expressions of a systemic lack of governance that is a major determinant of the CPD experience of a large percentage of the teaching workforce.

The model by Guskey (1986, 2002) is still a helpful analytical tool in this case. The basic understanding of the model is that teacher professional development is not initiated by training and terminated by changed beliefs, but initiated by the enabling conditions that allow changed practice to occur, followed by observed improvement in student learning, and only then leads to sustained changes in professional attitudes and self-efficacy. What the current data indicate is that the enabling conditions, which in this case are operationalised as the SIPS construct, are not evenly distributed among the CBSE schools of West Tripura. The enabling conditions are present in schools where administrative encouragement is present and visible (Q51), where a formal SLIP is present (Q52), where PLC meetings are regularly organised (Q56), and where CPD completion is tracked in a transparent manner (Q60). In schools where such governance mechanisms are either non-existent or nominal, the cycle is broken before it starts and even the best training programmes cannot fill the structural gap.

Administrative Support and Professional Learning Culture

It is not, on reflection, a surprising finding that the emergence of active administrative encouragement (Q51, = 0.72) is the only governance indicator in the SIPS construct that is significant, but it is an important finding. The body of research on school leadership and professional development has long recognized the observable, long-term support of professional learning by school leaders as one of the strongest predictors of whether teachers will use CPD as a professional resource or as a mandate. The difference that leadership actively promotes CPD participation does not lie in the logistics of training; it is the institutional message that professional development is important, that it is valued by the organisation, and that teachers who invest in it are doing something that is institutionalised and institutionalised. Abakah (2023) referred to this as a change in the motivational framing of CPD - as a compliance cost to a professional investment - and suggested that this change is largely an institutional, not an individual, accomplishment. The current statistics confirm this explanation. Teachers in schools where administrative support is real and sustained are integrated into a professional culture that naturalises the idea of constant learning; teachers in schools where it is not are left to make their own case of the value of investing in an activity that their school regards as incidental.

In their long-term study of the factors that facilitate teacher professional commitment at various career levels, Day and Gu (2007) discovered that collegial culture and institutional recognition are some of the most significant variables that maintain teacher commitment to professional development in the long run. This observation is especially applicable in the West Tripura case, where a significant percentage of the respondents are long-term teachers who have over a decade of experience in the field. To these teachers, whether to make CPD a

meaningful experience or a box-ticking exercise is not largely dictated by the novelty of the training content; it is dictated by whether their professional situation views professional development as something of value or something of necessity. School leaders who recognize and act on this dynamic, who make professional learning visible, institutionally supported, and explicitly valued as a part of school life, are executing a governance role that influences the motivational terrain in which all other CPD activities are practiced.

Accountability, Monitoring, and Transfer of Learning

The fact that the transparent CPD progress tracking (Q60, $\beta = 0.70$) is highly loaded in the SIPS construct is an aspect that should be looked at with a certain degree of caution, since monitoring may be perceived as a strictly bureaucratic process - a process of registering the number of hours completed, as opposed to facilitating professional development. The findings of this research indicate that monitoring in the reductive, audit-based meaning is not what teachers appreciate but open and intentional tracking that links CPD activity to institutional objectives and informs teachers that their professional growth is monitored, supported, and incorporated into the school improvement planning. In an empirical investigation of the NISHTHA programme, Kalyani, L.K. (2024) discovered that institutional follow-up and application monitoring were the most notable predictors of whether the training outcomes were maintained in classroom practice. Without such follow-up, teachers are likely to resume their previous practice after training, with little institutional pressure or encouragement to even attempt to integrate new knowledge into their practice.

The qualitative answers of Section F of this research render the implications of this monitoring deficit concrete. Several respondents cited lack of proper monitoring after training as a major challenge. A respondent in the Agartala block observed that training programmes are conducted regularly, but the implementation rate is not at the mark by everyone. One of them explained the difficulty as the lack of institutional follow-through: training occurs, but there is no system to bridge the gap between what was learned in training and what occurs in classrooms after training. This is exactly the governance failure that Q55 and Q60 are meant to measure, and the large loadings of these items in the SIPS construct suggest that this failure is prevalent throughout the sample. Desimone and Garet (2015) claimed that coherence, the correspondence between CPD activities, curricular goals, and instructional practice, is a matter of active administrative stewardship; it does not arise out of training participation. What the present results contribute to this conclusion is that coherence is not merely a characteristic of training design but of the governance structure that encloses training and links it to institutional accountability.

Professional Learning Communities and School Complex Framework

The fact that PLC organisation (Q56, 0.66) and School Complex collaboration (Q61, 0.61) are loaded in the SIPS construct, and the qualitative responses of peripheral block respondents illuminate the reasons why the mechanisms are important in particular in dispersed educational environments. A number of respondents in the Jirania/Belbari/Mandai cluster reported that CPD is practiced in isolation, without the collegial networks that enable teachers to exchange strategies, troubleshoot implementation issues, or learn through the experiences of other teachers in the classroom. Kennedy (2016) reported that the professional development programmes that are most consistently linked to better teaching are those that are part of a continuing collegial learning culture; a one-off PLC meeting or an inter-school collaboration event is not up to that standard. What the NEP 2020 School Complex model can offer, when actively managed, is a long-term collegial infrastructure - frequent joint

meetings, joint resource repositories, cross-school peer mentoring - that would turn professional development into a continuous institutional practice.

The statistics also indicate, though, that the actualisation of this potential is uneven. The mean scores on Q61 are significantly lower in the respondents in peripheral block clusters than in Agartala, indicating that School Complex collaboration is more nominal than real in most of the outer blocks of the district. This is in line with the findings in the Synopsis literature, which reports that the administrative role tends to dominate the academic leadership role of cluster heads, restricting the real collaborative effectiveness of school clusters. Dyer et al. (2004) suggested that contextual responsiveness is a condition of successful in-service development in India, and the structure of School Complex collaborative agendas in West Tripura must be designed in such a way that it takes into account the linguistic, cultural, and infrastructural specifics of the district in case collaboration is to be substantively productive and not procedurally nominal.

The Digital Divide as a Governance Accountability

One of the most practically relevant findings of this study is the difference between the comparatively low positive loading of the digital infrastructure provision (Q53, $\beta = 0.45$) and the high loading of the infrastructure barrier item (Q62, $\beta = 0.69$). The low loading of Q53 does not imply that digital infrastructure is not important; it is simply a fact that, in the sample, sufficient digital provision is so infrequently reported that it does not add much variance to the SIPS construct as it might have done. The fact that many respondents mentioned explicitly in Section F that the most tangible and immediately felt governance failure in their professional setting is the lack of functional digital infrastructure, including smart televisions, reliable internet, and subject-specific digital content.

In a national policy environment where DIKSHA and SWAYAM are heavily used as CPD platforms, only 17.0% of the sample report fully online CPD as their main mode of delivery. This number is not so much a statement of teacher bias towards offline learning; it is a structural report of the digital infrastructure situation in the CBSE schools of West Tripura. Ertmer and Ottenbreit-Leftwich (2010) demonstrated that institutional contextual barriers such as adequacy of infrastructure are stronger predictors of technology adoption than individual attitudinal barriers. Bauwens et al. (2020) demonstrated that after-hours online interaction with professional development platforms needs institutional support systems that most schools in this sample are not able to offer at present. The contribution of the current study to this literature is a governance framing: the digital divide is not a technical issue that has a technical solution. It is a governance issue that demands school leaders to devise intentional compensatory measures - hybrid delivery models, offline SLM provision, school-based ICT workshops - in situations where national platform-based CPD delivery is not consistently operational.

In his analysis of the Samagra Shiksha Abhiyan funding, Khanna (2021) has recorded a trend of unequal resource allocation that has continued to favor the peripheral and semi-urban schools compared to the urban schools that are better-endowed. The distribution of CPD mode in this sample indicates that this resource gap directly and significantly affects the access of the teachers who are most likely to require extra support to professional development. School administrators in peripheral blocks who are unable to offer credible digital infrastructure have a governance role to create alternative CPD provision that is not merely a scaled-down version of the national model but a locally-resourced and contextually-appropriate substitute. It is a challenging task, which needs administrative ingenuity and sufficient resource provision by the upper echelons of the education system.

The Motivational Governance of CPD, Teacher Beliefs, and Self-Efficacy

The attitudinal pattern as shown in Section C should be interpreted with care. The observation that teachers generally endorse the normative justification of the fifty-hour requirement and at the same time express practical discontent with the existing state of affairs time constraints, gaps in subject relevance, insufficient practical orientation of training, is indicative of a motivational process that Bandura (1993) and Pajares (1992) have theorised in the context of self-efficacy and belief systems. CPD content that is perceived to have no relationship with the realities of the classroom is not able to activate the self-efficacy processes by which professional development produces behavioural change. The teachers who undergo training which they find theoretically abstract and practically irrelevant might have a short-lived motivational boost following the training, as Q36 proposes, but this motivation fades soon unless the training is followed by the mentoring and institutional support that would help them to translate the new knowledge into the changed practice.

In a study of reforms in learner-centred education in India, Brinkmann (2015) suggested that reform efforts always fail when they fail to consider the current belief systems of teachers and the institutional contexts that influence those beliefs. The implication of this to the governance of CPD in West Tripura is that school administrators must be concerned not only with the structural logistics of CPD delivery but with the motivational and attitudinal environment in which teachers engage in professional development. A SLIP that states how many training events one has had in a year without considering the conditions that define whether training is felt to be meaningful subject-specificity, practical relevance, collegial support, post-training follow-up is a structural document that lacks a governance culture to bring it to life. In their empirical study of teacher self-efficacy and job satisfaction, Klassen and Chiu (2010) discovered that the variables of institutional context, such as workload management and professional development support, are strongly related to self-efficacy beliefs. School leaders who administer CPD governance in a manner that helps teachers feel professionally competent and relevant, as opposed to creating administrative overhead, are helping to create the self-efficacy conditions that the Bandura (1993) framework refers to as the precursors of long-term behavioural change.

VI. CONCLUSION

This paper aimed to investigate the question of whether and how school-level governance structures, operationalised as the construct of School Implementation Plans and Support, predict teachers' practical pedagogical outcomes and professional development requirements in CBSE schools of West Tripura. The response that the data give is clear: they do, and the strength of the relationship ($= 0.58$, $= 0.34$) is substantial enough to be taken seriously by both researchers and practitioners. Institutional governance factors that school administrators have direct control over explain one-third of the variability in the experience and articulation of professional development needs by 276 elementary teachers in five block clusters of West Tripura. This is not a peripheral or marginal finding but a core conclusion that has direct implications on how the NEP 2020 CPD mandate ought to be interpreted, applied, and assessed.

The analysis leads to several particular governance conclusions. Active administrative encouragement is the strongest single governance tool and its significance is not necessarily what it offers logistically but what it indicates culturally - that professional development is an organisational priority that is supported and valued. The governance mechanisms that link training to classroom practice are transparent CPD tracking and structured monitoring, and their lack, which is widely reported in the qualitative responses, is the most prevalent

explanation of why teachers go through training hours without applying training content to instructional change. The collegial scaffolding of PLCs and School Complex collaboration is where peer learning, collective problem-solving, and ongoing professional inquiry can take place; the uneven distribution of them across the block clusters of the district is a governance gap that places teachers in peripheral blocks at a disadvantage compared to the Agartala cluster. The provision of digital infrastructure is the least positive contribution to the governance construct and the cause of the most intensely felt barriers, which affirms that the digital divide in CPD access is a governance issue that needs to be addressed through administrative intervention that is deliberate and responsive to the context.

These findings have implications beyond West Tripura to policymakers at the CBSE and state education department level. In the event that school-level governance is mediating the effectiveness of nationally designed CPD systems as powerfully as this study indicates, then investment in training platforms, curriculum content, and completion tracking systems will always perform poorly in comparison to its potential unless it is also accompanied by investment in the institutional governance capabilities of school leaders. This implies training principals in instructional leadership and not just administrative management, requiring and auditing SLIPs as functional professional development governance documents, establishing NEP 2020-aligned monitoring frameworks beyond hour-completion to evaluate practice application, resourcing School Complex coordinators with the time and mandate to engage in authentic academic leadership, and creating targeted digital infrastructure provision to peripheral block schools and robust offline and hybrid CPD options.

To school administrators in West Tripura in particular, the practical implication of this study is that the governance of CPD is not an administrative afterthought that can be taken care of after training schedules are made. It is the organisational infrastructure in which any CPD investment, however well-planned at a national or state level, will either produce real professional development or be lost in compliance performance. The choices that principals and coordinators make regarding the means of conveying the value of professional development, the means of creating time and structures to facilitate collegial learning, the means of monitoring and supporting the transfer of training into classroom practice, the means of compensating the lack of digital infrastructure with contextually adapted alternatives these are the governance choices on which the success of the NEP 2020 CPD mandate in West Tripura will eventually hinge.

There are a number of recognized limitations to this study that must be taken into consideration in the interpretation of its results. The present sample of $N = 276$, though analytically sound, is still less than the validated target of 380 to 400 responses, and the cross-sectional design implies that the study can determine the significance and magnitude of the relationship between governance and pedagogical outcomes but cannot determine its longitudinal stability or directional causality in the strongest sense. The geographic constraint of West Tripura does not allow direct generalisation to other districts or states, but the dynamics of governance found are likely to apply to similar semi-urban and peripheral educational settings. Future studies ought to attempt longitudinal designs that can trace governance investment and pedagogical change across several years of academic study, qualitative case studies that can trace the mechanisms of institutional change in school governance cultures in more detail, and multi-district comparative designs that can trace how governance effects differ across different regional settings within the complex Indian educational environment.

What this paper does determine, with the degree of empirical certainty that the data bear out, is that the NEP 2020 fifty-hour CPD requirement will not achieve its pedagogical promise by

the power of national policy declaration alone. It will be realised, or it will be lost, in the governance choices that school leaders in West Tripura (and, by extension, in the numerous other semi-urban educational settings in India) make on a daily basis regarding how to lead, support, and sustain the professional learning of the teachers under their care.

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