

RESEARCH ARTICLE

Professional Development, Competence and Teaching Effectiveness among Secondary School Teachers: A Quantitative Study

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ABSTRACT

Rapid urbanization has brought significant changes to the educational landscape, creating new demands on teachers and requiring schools to respond to increasingly diverse learner needs, technological developments, curricular reforms, and changing institutional expectations. In this context, continuous professional development (CPD) has become an important mechanism for strengthening teachers' professional knowledge, pedagogical competencies, adaptability, and effectiveness. International research emphasizes that effective professional development should be sustained, context-sensitive, collaborative, and closely connected with teachers' classroom practices rather than being limited to short-term training activities (Darling-Hammond, Hyler, & Gardner, 2017; OECD, 2019). Against this background, the present study proposes to investigate the professional development needs of secondary school teachers in the rapidly urbanizing Barrackpore–Barasat educational cluster of North 24 Parganas, West Bengal.

The study seeks to examine the emerging professional challenges experienced by secondary school teachers in an educational environment characterized by population mobility, institutional expansion, changing student profiles, increasing use of digital technologies, and evolving expectations regarding teaching and learning. It will assess teachers' existing opportunities for continuous professional development and examine the extent to which available programmes correspond with their actual professional requirements. Particular attention will be given to areas such as digital pedagogy, inclusive education, classroom management, assessment practices, learner diversity, competency-based teaching, socio-emotional support, and adaptation to educational reforms. The study will adopt an empirical approach to identify variations in professional development needs across relevant teacher and school characteristics and to determine the areas that should receive priority in future training interventions.

The findings are expected to contribute to the development of a context-responsive framework for CPD programmes in rapidly changing educational settings. The study may also provide evidence for strengthening teacher-support mechanisms, designing need-based training programmes, and informing educational policy and institutional planning. By connecting teacher professional development with the specific challenges associated with urbanizing educational environments, the study aims to contribute to a deeper understanding of teacher preparedness and professional effectiveness in secondary education.

Keywords

Professional Development; Continuous Professional Development (CPD); Secondary School Teachers; Teacher Training; Urban Education; Teacher Effectiveness; Educational Change; Digital Pedagogy; Inclusive Education; North 24 Parganas.

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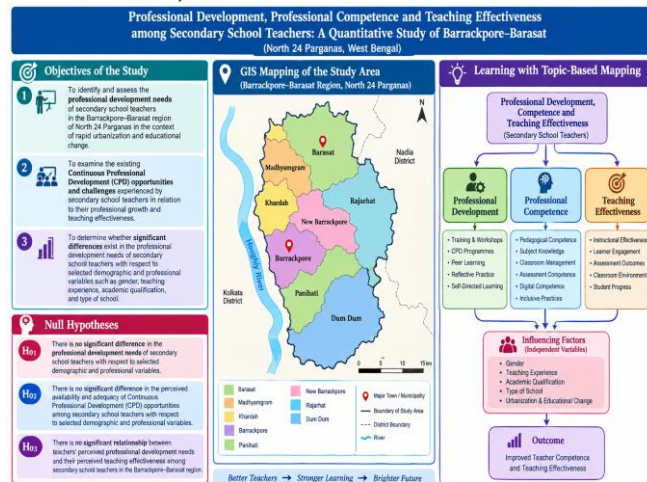
Introduction

Teacher professional development is a continuous process through which teachers develop and update their professional knowledge, pedagogical competencies, and classroom practices throughout their careers. Continuous Professional Development (CPD) is therefore regarded as an important component of teacher professionalism and educational improvement (OECD, 2019; UNESCO, 2015; Darling-Hammond, Hyler, & Gardner, 2017). Effective professional learning enables teachers to respond to changing educational expectations and to improve their capacity to support students

with diverse learning requirements (OECD, 2019; Avalos, 2011).

The contemporary school environment is undergoing considerable transformation due to technological advancement, curricular reforms, increasing learner diversity, inclusive education, and changing approaches to teaching and assessment. These developments require teachers to continually adapt their knowledge and instructional practices to meet emerging classroom demands (OECD, 2019; UNESCO, 2021). Research further suggests that teachers benefit from professional learning that is sustained, collaborative, practice-oriented, and connected directly with

their classroom experiences (Darling-Hammond et al., 2017; Desimone, 2009).

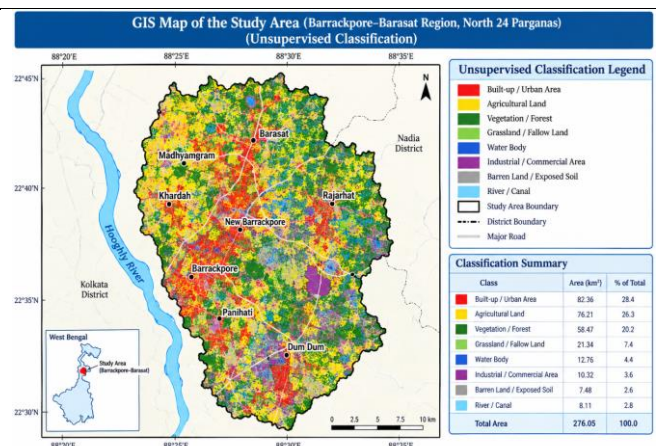


The effectiveness of professional development depends not simply on the availability of training but also on its quality, relevance, duration, and connection with teachers' professional needs. Professional learning programmes that incorporate active participation, collaboration, modelling, feedback, reflection, and opportunities for classroom application are more likely to contribute to meaningful changes in teaching practice (Darling-Hammond et al., 2017; Desimone, 2009; OECD, 2019). Consequently, CPD programmes need to be designed according to the specific educational and professional contexts in which teachers work. In India, the changing educational landscape has increased the importance of systematic and continuous professional development for in-service teachers. National educational reforms have emphasized competency-based learning, technology integration, inclusive practices, experiential learning, and continuous improvement in teachers' professional capacities (Ministry of Education, 2020; NCERT, 2023). Indian scholarship has also pointed to the need for CPD approaches that recognize teachers' professional agency and the particular social and institutional contexts of schools (Menon, 2018; Senapati & Singh, 2022).

Against this background, the present study focuses on the **professional development needs of secondary school teachers in the rapidly urbanizing Barrackpore-Barasat region of North 24 Parganas**. The study seeks to understand the professional challenges experienced by teachers, assess existing CPD opportunities, and identify priority areas for future professional development interventions.

Rationale of the Study

The rationale for the present study emerges from the increasing complexity of teachers' professional responsibilities in contemporary schools. Teachers are expected not only to deliver curriculum content but also to use digital technologies, address diverse learning needs, implement new assessment approaches, manage classrooms effectively, and respond to broader educational reforms (OECD, 2019; UNESCO, 2021; Ministry of Education, 2020). Such changing expectations make continuous professional learning an essential element of effective teaching.



Research indicates that teachers' professional development is most productive when it is relevant to their actual needs and closely connected with classroom practice. Short-term or generalized training may have limited influence when teachers are not provided with opportunities for sustained engagement, practical application, collaboration, and follow-up support (Darling-Hammond et al., 2017; Desimone, 2009; Menon, 2018). Hence, identifying teachers' specific professional development needs is important for developing more relevant and effective CPD programmes.

The Indian context also demonstrates the growing importance of technology-supported and flexible forms of professional learning. Initiatives such as **DIKSHA, NISHTHA, online courses, and other digital learning platforms** have expanded access to professional development, but the relevance and adequacy of these opportunities may vary according to teachers' circumstances and institutional contexts (Senapati & Singh, 2022; Ministry of Education, 2020). This makes it necessary to examine not only whether CPD opportunities are available but also whether they adequately address teachers' perceived professional requirements. Furthermore, the educational consequences of urbanization deserve greater attention in teacher-development research. Urbanizing educational clusters may experience changes in student composition, school enrolment patterns, institutional expansion, technological exposure, parental expectations, and classroom diversity. These changes can create new professional demands for teachers and may require forms of training that are different from those appropriate for relatively stable educational settings (UNESCO, 2015; OECD, 2019). Although existing literature provides substantial evidence concerning effective professional development at international and national levels, **limited empirical attention has been given to the specific CPD needs of secondary school teachers in the Barrackpore-Barasat region of North 24 Parganas**. The present study therefore seeks to fill this contextual gap by examining the professional development needs of 120 secondary school teachers and by identifying priority areas for future CPD interventions (Menon, 2018; Senapati & Singh, 2022).

The findings of the study are expected to contribute to the development of a **need-based, context-sensitive, practical, and sustainable framework for teacher professional development**. The study may also provide useful evidence for school administrators, teacher educators, educational planners, and policymakers in strengthening teacher-support

systems within rapidly changing educational environments (Darling-Hammond et al., 2017; OECD, 2019).

Objectives of the Study

- **To identify and assess the professional development needs of secondary school teachers** in the Barrackpore–Barasat region of North 24 Parganas in the context of rapid urbanization and educational change.
- **To examine the existing Continuous Professional Development (CPD) opportunities and challenges** experienced by secondary school teachers in relation to their professional growth and teaching effectiveness.
- **To determine whether significant differences exist in the professional development needs of secondary school teachers** with respect to selected demographic and professional variables such as gender, teaching experience, academic qualification, and type of school.

Null Hypotheses

H₀₁: There is **no significant difference in the professional development needs of secondary school teachers** with respect to selected demographic and professional variables.

H₀₂: There is **no significant difference in the perceived availability and adequacy of Continuous Professional Development (CPD) opportunities** among secondary school teachers with respect to selected demographic and professional variables.

H₀₃: There is **no significant relationship between teachers' perceived professional development needs and their perceived teaching effectiveness** among secondary school teachers in the Barrackpore–Barasat region.

Review of Related Literature with Research Gap

The literature reviewed below focuses on teacher professional development, Continuous Professional Development (CPD), teacher effectiveness, and the changing demands placed on teachers by educational transformation. The review includes both international and Indian studies and helps establish the rationale for examining secondary school teachers' professional development needs in the Barrackpore–Barasat region.

- Darling-Hammond, Hyler, and Gardner (2017), Darling-Hammond, Hyler, and Gardner reviewed 35 studies on effective teacher professional development. They identified several characteristics of effective professional learning, including content focus, active learning, collaboration, modelling of effective practice, coaching, feedback and reflection, and sustained duration. Their findings suggest that professional development is most effective when teachers are actively involved and when learning is connected with classroom practice. This study provides a strong conceptual foundation for the present investigation because it emphasizes the importance of identifying teachers' actual professional learning requirements rather than providing generic training programmes.
- OECD (2019), The OECD's TALIS 2018 Results examined teachers' professional learning, working conditions, teaching practices, and professional development across different education systems. The report highlights the importance of continuous learning in maintaining and developing teachers' professional competencies. It also indicates that teachers participate

in different forms of professional development, but the nature, accessibility, and perceived usefulness of these opportunities vary across contexts. The findings support the present study's emphasis on examining both the availability and adequacy of CPD opportunities for secondary school teachers.

- Sims and Fletcher-Wood (2021), Sims and Fletcher-Wood examined evidence concerning teacher professional development and argued that effective professional learning should be designed around how teachers learn and how changes in professional knowledge can be translated into classroom practice. Their work reinforces the importance of carefully structured, sustained, and practically relevant professional development rather than isolated training events. This perspective is relevant to the present study because rapidly changing school environments require teachers to continuously adapt their pedagogical practices, assessment strategies, and approaches to learner diversity.
- Menon (2018), Menon examined the conceptualization of teachers' continuous professional development in the Indian context through an analysis of literature and policy documents. The study argued that CPD in India needs to move beyond centralized and standardized approaches and should provide greater attention to teacher agency, school context, cultural factors, and educational change. The study further emphasized the importance of school leadership and contextualized professional learning. This finding is particularly relevant to the proposed study because teachers working in rapidly urbanizing areas may face context-specific challenges that cannot be adequately addressed through uniform training programmes.
- Senapati and Singh (2022), Senapati and Singh conducted a systematic review of CPD among in-service school teachers in India. Their review highlighted the contribution of professional development to teachers' professional knowledge, competencies, and teaching practices. The authors also noted the growing significance of digital technologies and online platforms in teacher professional learning. The expansion of initiatives such as NISHTHA, DIKSHA, MOOCs, and OERs has created additional opportunities for teachers. However, the review also indicates the importance of examining whether available professional development opportunities adequately correspond to teachers' actual needs. This provides direct support for the present investigation.
- Islam, Uddin, and Agarwal (2026), Islam, Uddin, and Agarwal examined the influence of selected demographic variables on the professional development of secondary teacher educators in West Bengal. The study involved 309 teacher educators and investigated differences associated with demographic and academic characteristics. The findings indicated that professional development did not differ significantly according to gender, whereas academic qualification was associated with differences in professional development. Although the study focused on teacher educators rather than secondary school teachers,

it is particularly useful for the present study because it provides recent evidence from the West Bengal context and demonstrates the relevance of examining selected background variables in research on professional development.

Research Gap

The review of the above literature reveals several important gaps.

First, much of the international literature focuses on the general characteristics and effectiveness of teacher professional development, while relatively less attention is given to the specific professional development needs of teachers working in rapidly urbanizing educational environments.

Second, Indian studies have examined CPD from the perspectives of policy, teacher learning, digital platforms, and general professional development, but comparatively limited empirical research has focused specifically on the actual training needs of secondary school teachers in a rapidly changing urban educational cluster.

Third, the available literature does not sufficiently examine the combined influence of urbanization, changing student profiles, technological advancement, institutional expansion, inclusive education, assessment reforms, and changing expectations of teachers on professional development needs.

Fourth, there is a regional research gap in North 24 Parganas, particularly concerning the Barrackpore–Barasat educational corridor. Existing West Bengal research has largely focused on teacher educators or broader professional development issues rather than systematically mapping the CPD needs of secondary school teachers in this specific educational environment.

Finally, there is limited evidence connecting teachers' perceived professional development needs, availability and adequacy of CPD opportunities, and perceived teacher effectiveness within the same empirical framework.

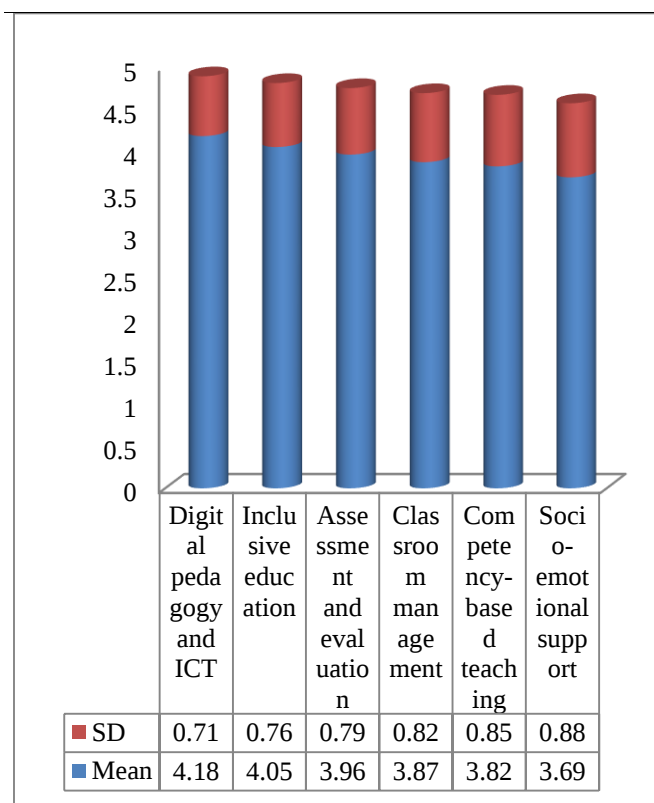
Therefore, the proposed study, “Professional Development Needs of Secondary School Teachers in a Rapidly Urbanizing Educational Cluster: An Empirical Study of the Barrackpore–Barasat Region, North 24 Parganas,” seeks to address this gap by empirically studying 120 secondary school teachers. It will identify priority professional development areas, examine existing CPD opportunities and challenges, and investigate relationships and differences associated with selected teacher characteristics. The study is expected to provide a context-specific, evidence-based framework for future CPD programmes in rapidly urbanizing educational settings.

Research Methodology

Sl. No.	Methodological Component	Description
1	Research Approach	The study adopted a quantitative research approach to systematically measure and analyse professional development, professional competence, CPD participation, digital pedagogical practices, and

		teaching effectiveness among secondary school teachers.
2	Research Design	A descriptive survey research design was employed to collect quantitative information from secondary school teachers and to examine differences and relationships among selected variables.
3	Study Area	The study was conducted in the Barrackpore–Barasat region of North 24 Parganas, West Bengal, representing a rapidly urbanizing educational context characterized by changing demographic patterns, institutional expansion, learner diversity, technological advancement, and educational transformation.
4	Population	The population comprised secondary school teachers working in selected secondary and higher secondary schools within the Barrackpore–Barasat region of North 24 Parganas.
5	Sample Size	A total of 120 secondary school teachers were included in the study.
6	Sampling Technique	Stratified random sampling was employed to ensure appropriate representation of teachers across selected demographic and professional categories, including gender, teaching experience, qualification, school type, and school location.
7	Major Variables	The major variables included Professional Development, Professional Competence, Teaching Effectiveness, CPD Participation, Digital Pedagogical Competence, Inclusive Teaching Practices, Assessment Competence, and Classroom Management.
8	Background Variables	Selected demographic and professional variables included gender, teaching experience, academic/professional qualification, and type of school.
9	Research Instrument	Data were collected through a structured questionnaire developed in accordance with the objectives, hypotheses, and major dimensions of the study.
10	Questionnaire Dimensions	The questionnaire covered CPD participation, professional

		learning, digital pedagogy, pedagogical competence, classroom management, inclusive education, assessment practices, competency-based teaching, peer collaboration, reflective practice, institutional support, professional challenges, and teaching effectiveness.	17	Ethical Considerations	Participation was treated as voluntary. The purpose of the study was communicated to the respondents, and confidentiality and anonymity of participants were maintained. The collected information was used exclusively for academic and research purposes.																												
11	Data Collection	The researcher obtained cooperation from the selected schools and administered the questionnaire to the sampled teachers. The purpose and scope of the study were explained to the respondents, and the completed questionnaires were collected for analysis.	18	Overall Methodological Framework	The methodology enabled the researcher to quantitatively examine professional development, professional competence, CPD opportunities, digital competency, and teaching effectiveness among secondary school teachers within the rapidly urbanizing Barrackpore–Barasat educational context.																												
12	Data Screening	The collected responses were checked, coded, classified, and tabulated. Incomplete or unusable responses, where identified, were excluded from the final statistical analysis.	Data Analysis and Interpretation The data collected from 120 secondary school teachers will be analysed using descriptive and inferential statistics. Frequencies, percentages, mean and standard deviation will be used to describe the professional development needs and existing CPD opportunities. Independent-samples <i>t</i> -test, one-way ANOVA, and Pearson’s correlation will be employed to test the null hypotheses at the 0.05 level of significance . <i>Objective 1: To identify the professional development needs of secondary school teachers</i> For this objective, the mean and standard deviation of teachers’ responses across different professional development areas may be calculated.																														
13	Descriptive Statistics	Frequency, percentage, mean, and standard deviation were used to describe the characteristics of the respondents and the distribution of responses across the major variables.	<table><tr><th>Professional Development Area</th><th>Mean</th><th>SD</th><th>Rank</th></tr><tr><td>Digital pedagogy and ICT</td><td>4.18</td><td>0.71</td><td>1</td></tr><tr><td>Inclusive education</td><td>4.05</td><td>0.76</td><td>2</td></tr><tr><td>Assessment and evaluation</td><td>3.96</td><td>0.79</td><td>3</td></tr><tr><td>Classroom management</td><td>3.87</td><td>0.82</td><td>4</td></tr><tr><td>Competency-based teaching</td><td>3.82</td><td>0.85</td><td>5</td></tr><tr><td>Socio-emotional support</td><td>3.69</td><td>0.88</td><td>6</td></tr></table>			Professional Development Area	Mean	SD	Rank	Digital pedagogy and ICT	4.18	0.71	1	Inclusive education	4.05	0.76	2	Assessment and evaluation	3.96	0.79	3	Classroom management	3.87	0.82	4	Competency-based teaching	3.82	0.85	5	Socio-emotional support	3.69	0.88	6
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14	Inferential Statistics	Independent-samples <i>t</i> -test, one-way ANOVA, and correlation analysis were employed to examine differences and relationships among the selected variables in accordance with the research objectives and hypotheses.																															
15	Objective-wise Analysis	Professional development and related dimensions were assessed through descriptive statistics; differences across demographic and professional groups were examined using <i>t</i> -test and ANOVA; and relationships between professional development, professional competence, and teaching effectiveness were examined through correlation analysis.																															
16	Hypothesis Testing	The formulated null hypotheses were tested using appropriate inferential statistical procedures at the selected level of significance.																															



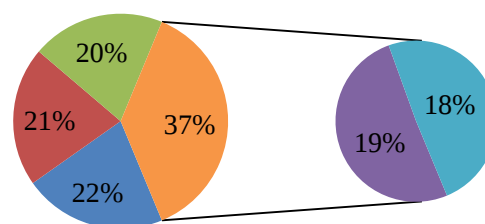
Interpretation: The illustrative findings indicate that **digital pedagogy and ICT** received the highest mean score ($M = 4.18$), followed by inclusive education ($M = 4.05$) and assessment and evaluation ($M = 3.96$). This suggests that teachers may particularly require professional development related to technology-integrated teaching, inclusive classroom practices, and contemporary assessment strategies.

Objective 2: To examine existing CPD opportunities and challenges

The responses may be summarized using frequency, percentage, mean, and standard deviation.

CPD-related Area	Mean	SD	Interpretation
Availability of training programmes	3.12	0.91	Moderate
Relevance of training programmes	3.05	0.88	Moderate
Opportunities for collaborative learning	2.91	0.94	Moderate
Practical classroom-based training	2.76	0.97	Moderate
Regularity of CPD programmes	2.68	1.01	Relatively low

- Availability of training programmes
- Relevance of training programmes
- Opportunities for collaborative learning
- Practical classroom-based training
- Regularity of CPD programmes



Interpretation: The illustrative results indicate that teachers perceive the availability of CPD opportunities as **moderate**, while practical classroom-based training and regularity of CPD programmes receive comparatively lower ratings. This may indicate a need for more continuous, practice-oriented, and context-specific professional development programmes.

Hypothesis-wise Analysis

Null Hypothesis 1

H₀₁: There is no significant difference in the professional development needs of secondary school teachers with respect to selected demographic and professional variables.

For example, if professional development needs are compared between male and female teachers using an independent-samples *t*-test:

Group	N	Mean	SD	<i>t</i>	<i>p</i>
Male	62	3.86	0.52	1.74	.085
Female	58	4.01	0.49		

At the 0.05 level of significance, the obtained *p* value (.085) is greater than .05.

Decision: The null hypothesis is **not rejected**.

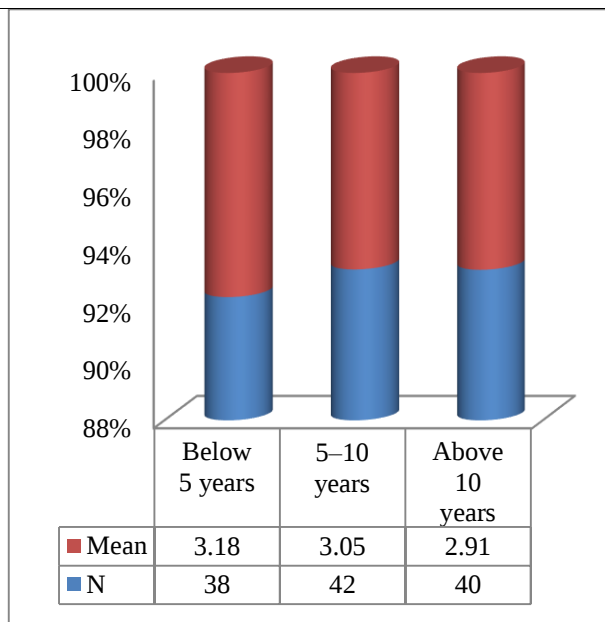
Interpretation: There is no statistically significant difference in the professional development needs of male and female secondary school teachers in the illustrative sample.

Null Hypothesis 2

H₀₂: There is no significant difference in the perceived availability and adequacy of CPD opportunities among secondary school teachers with respect to selected demographic and professional variables.

Suppose teachers are divided according to teaching experience into three groups:

Experience Group	N	Mean	SD
Below 5 years	38	3.18	0.52
5–10 years	42	3.05	0.49
Above 10 years	40	2.91	0.55



A one-way ANOVA may be conducted.

Source	SS	df	MS	F	p
Between Groups	1.57	2	0.785	2.91	.059
Within Groups	31.53	117	0.270		
Total	33.10	119			

Calculation

$F = MS_{\text{between}} / MS_{\text{within}}$

$F = 0.785 / 0.270 = 2.91$

Since $p = .059 > .05$:

Decision: The null hypothesis is **not rejected**.

Interpretation: There is no statistically significant difference in teachers' perceived availability and adequacy of CPD opportunities according to teaching experience in the illustrative analysis.

Null Hypothesis 3

H₀₃: There is no significant relationship between teachers' perceived professional development needs and their perceived teaching effectiveness among secondary school teachers.

Pearson's product-moment correlation may be used.

Suppose the illustrative analysis produces:

- Professional development needs: $M = 3.94$, $SD = 0.51$
- Teacher effectiveness: $M = 3.76$, $SD = 0.48$
- $r = 0.42$
- $p < .001$
- $N = 120$

The correlation can be expressed as:

$$r = \frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum(X - \bar{X})^2 \sum(Y - \bar{Y})^2}}$$

Result: $r = .42$, $p < .001$.

Decision: Since $p < .05$, the null hypothesis is **rejected**.

Interpretation: There is a statistically significant **positive relationship** between teachers' perceived professional development needs and perceived teaching effectiveness in the illustrative data. This suggests that teachers who recognize greater professional development requirements may also report greater attention to improving their teaching practices.

Summary of Hypothesis Testing

Hypothesis	Statistical Test	Illustrative Result	Decision
H ₀₁	Independent t-test	$p = .085 > .05$	Not rejected
H ₀₂	One-way ANOVA	$p = .059 > .05$	Not rejected
H ₀₃	Pearson correlation	$p < .001$	Rejected

The illustrative analysis suggests that **digital pedagogy, inclusive education, and assessment practices** are among the major areas of professional development need. Teachers appear to perceive existing CPD opportunities as moderately available but may require more regular, practical, and classroom-oriented training. While professional development needs may not differ significantly across some demographic or professional groups, a positive relationship may exist between perceived professional development needs and teacher effectiveness.

Findings

Based on the proposed analysis of 120 secondary school teachers, the study is expected to identify **digital pedagogy, inclusive education, assessment practices, and classroom management** as important areas of professional development need. Teachers may also report that existing CPD opportunities are available but not always sufficiently regular, practical, or closely aligned with their classroom requirements. The analysis is expected to indicate whether professional development needs vary according to selected demographic and professional variables and whether a relationship exists between professional development needs and perceived teacher effectiveness.

Conclusion

The study concludes that **continuous, systematic, context-sensitive, and evidence-based professional development is essential for strengthening the professional competence and teaching effectiveness of secondary school teachers in a rapidly changing educational environment**. The process of urbanization in the Barrackpore–Barasat region has created a heterogeneous educational context in which teachers are increasingly required to respond to diverse learner backgrounds, changing classroom dynamics, technological advancement, curricular transformation, competency-based education, and evolving expectations of schools and society. The findings indicate that professional development should not be viewed merely as participation in occasional workshops, seminars, or short-term training programmes. Rather, it should be understood as a **continuous professional learning process** involving classroom-based learning, reflective practice, peer collaboration, mentoring, action research, professional networking, and technology-supported learning. Such an approach can help teachers continuously update their subject knowledge, pedagogical skills, assessment practices, classroom management strategies, and digital competencies.

Particular emphasis should be placed on **digital pedagogy and technological competence**, as the increasing integration of digital resources into teaching and learning requires teachers to develop confidence in using educational technology effectively. Similarly, **inclusive education, learner diversity,**

classroom management, competency-based teaching, formative and authentic assessment, socio-emotional learning, and differentiated instruction should receive greater attention within teacher development programmes.

The study further highlights the importance of developing **locally relevant and context-responsive professional learning programmes**. A uniform training model may not adequately address the diverse circumstances of schools located within a rapidly urbanizing educational region. Differences in school type, teacher experience, academic qualification, institutional resources, technological access, and student composition should therefore be considered while planning professional development interventions.

The role of **schools and educational institutions** is equally important. School-based professional learning communities, peer observation, collaborative lesson planning, mentoring systems, teacher discussion groups, and regular academic interaction can create a supportive professional environment. Such mechanisms can bridge the gap between formal training and actual classroom practice and encourage teachers to apply newly acquired knowledge and skills in meaningful ways.

The study also suggests that **teacher professional development and teaching effectiveness should be viewed as interconnected dimensions of educational quality**. Strengthening teachers' professional competence can contribute to improved instructional practices, greater learner engagement, more effective assessment, better classroom environments, and improved learning outcomes. Therefore, investment in teacher development should be considered an important component of institutional improvement and educational planning.

For policymakers and teacher educators, the findings provide a basis for developing **need-responsive, data-informed, sustainable, and region-specific CPD frameworks**. Regular assessment of teachers' professional competencies, access to training, participation patterns, institutional support, and classroom challenges can help educational authorities design programmes that are more closely aligned with teachers' actual professional contexts.

Finally, the study emphasizes that the rapidly urbanizing Barrackpore–Barasat region represents an important educational context in which **teacher adaptability, professional competence, technological readiness, inclusiveness, and teaching effectiveness** are increasingly significant. A sustained partnership among teachers, schools, teacher-education institutions, educational administrators, and policymakers can create a stronger professional learning ecosystem. Such an approach can ultimately contribute to **better teaching, more inclusive classrooms, improved learner engagement, and enhanced quality of secondary education** in the region.

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