

A Study on The Training Needs of School Teachers and Their Impact on Teaching Effectiveness: A Case Study of A CBSE-Recognised Higher Secondary School in Bagalur

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Abstract—The National Education Policy (NEP) 2020 has significantly changed how education is delivered in India by focusing on skills-based learning, the use of technology, and providing ongoing support for teachers. However, even with these policies in place, there remains a significant gap between the emphasis on teacher development and the actual training provided in schools. This study examines the training needs of teachers and their impact on teaching effectiveness, using a CBSE-recognised Higher Secondary School in Bagalur as a case study. The study used both questionnaires and interviews with 45 teachers. It found a significant gap between the training teachers feel they need and the training offered in the school. Even though teachers are motivated to improve their skills, several issues such as lack of time (84.4%), not enough support from the school (64.4%), and not having training that matches their needs (71.1%) are stopping them from being more effective in their teaching. Analysis also shows that training needs are responsible for 38% of the variation in teaching effectiveness ($\beta = 0.62$, $p < 0.01$). This study adds to the available knowledge about teacher development by showing how important it is to provide training that meets teachers' specific needs in order to improve their teaching and student results. It also suggests ways to improve training at the institutional level, including better needs assessment, more relevant training content, and follow-up mechanisms to enhance classroom teaching.

Index Terms— Training Needs, Teaching Effectiveness, Teacher Professional Development, NEP 2020, CBSE Schools, Case Study

I. INTRODUCTION

The quality of education in any country is closely connected to the quality of its teachers.

Teachers are the main people who bring educational changes into reality by turning policy into practice and by helping students develop intellectually and socially (Darling-Hammond, 2017; Hattie, 2009). In India, where more than 250 million students are enrolled in over 1.5 million schools, the professional development of teachers has become a major priority (Ministry of Education, 2022).

The implementation of the National Education Policy (NEP) 2020 marks a significant change in the Indian education system, bringing about major reforms that require a complete change in the way teaching is done. The policy stresses the need for learning based on skills, practical teaching methods, digital knowledge, inclusive education, and continuous professional development (CPD) for teachers (Government of India, 2020). These reforms show that real educational progress depends on investing in the training and development of teachers.

Even though the policy has a clear vision, there is still a major gap between the focus on teacher development and how training is implemented in schools.

Although bodies like the Central Board of Secondary Education (CBSE) require CPD hours and offer structured programmes, there is not enough understanding of how teachers themselves see their training needs and how these needs affect their teaching effectiveness (Desimone, 2009; Guskey, 2002). This gap between policy and practice calls for detailed research to guide better teacher development strategies.

1.1 Research Problem

Despite widespread agreement on the importance of teacher professional development and major policy

efforts to support teacher training, there is not enough information on: (a) how teachers view their training needs in the context of changing teaching methods; (b) how well existing training programmes meet these perceived needs; (c) how need-based training affects the level of teaching effectiveness and student outcomes; and (d) the institutional and systemic challenges that prevent effective training.

1.2 Research Questions

This study aims to answer the following research questions:

1. What are the self-perceived training needs of teachers at the CBSE-recognised Higher Secondary School in Bagalur?
2. What is the current level of teaching effectiveness among the teachers at this school?
3. How are the teachers' training needs related to their teaching effectiveness?
4. What are the institutional and systemic barriers that make it difficult to implement effective teacher training?
5. What strategies can be suggested to improve teaching effectiveness through need-based training?

1.3 Significance of the Study

The importance of this study lies in its potential to help shape more effective teacher development strategies at both the institutional and policy levels.

By giving real evidence on the specific training needs of teachers in a CBSE-affiliated school, this study adds to the growing body of knowledge on teacher professional development in India and offers practical suggestions for improving teaching effectiveness.

II. LITERATURE REVIEW

2.1 Teacher Professional Development in the Indian Context

Teacher professional development has been seen as essential for improving the quality of education in India since independence.

The Kothari Commission (1966) first highlighted the importance of teacher quality, saying, "The destiny of India is being shaped in her classrooms" (Kothari Commission, 1966, p.1). Later policy documents, including the National Policy on Education (1986, 1992) and the Right to Education Act (2009), continued to emphasise the role of teachers by setting

up frameworks for teacher training and learning (Government of India, 1986; Ministry of HRD, 1992). The National Education Policy (2020) is the most comprehensive reform in Indian teacher education in recent times.

It requires all teachers to complete at least 50 hours of mandatory professional development every year, emphasises the importance of teacher learning communities, and promotes the use of technology in developing teachers (Government of India, 2020). However, some critics have pointed out that while the policy has ambitious goals, there is not enough guidance on how to implement them, leaving a lot of decision-making power to states and institutions (Mehta & Aggarwal, 2021; Singh, 2023).

Empirical studies on teacher development in India have highlighted several ongoing challenges. Rao and Kumar (2022) found that only 42% of teachers in government schools participated in any form of professional development in the previous year, with lower participation rates in rural areas. Similarly, Patel (2023) reported significant differences in the quality of training, with many programs focusing on theoretical content, using passive teaching methods, and failing to connect with classroom practice. These findings indicate that there is a significant and persistent gap between policy goals and actual implementation.

2.2 Training Needs Assessment: Concepts and Approaches

Training needs assessment (TNA) refers to the systematic process of identifying the difference between current and desired performance, and determining the learning interventions needed to address these gaps (McGehee & Thayer, 1961; Goldstein & Ford, 2002). In the context of teacher development, TNA involves identifying the knowledge, skills, and competencies that teachers need to perform effectively in their roles (Kennedy, 2016). The literature distinguishes between three levels of needs assessment: organisational, task, and individual (Brown, 2002). Organisational needs assessment examines whether training aligns with the goals and priorities of an institution. Task needs assessment identifies the competencies required for specific teaching roles. Individual needs assessment looks at the gap between teachers' current abilities and the requirements of their roles (Noe & Schmitt, 1986).

Effective TNA is characterised by several key principles.

First, it should involve teachers in identifying their own learning needs (Timperley et al., 2007). Second, it should use multiple sources of information to get a clearer picture (Desimone, 2009). Third, it should take into account that training needs can vary depending on subjects, grades, and institutional settings (Fullan, 2015). Fourth, it should consider both immediate and long-term development needs (Guskey, 2002).

Despite the importance of TNA, research indicates that many teacher development programs in India proceed without a systematic needs assessment (Mehta & Aggarwal, 2021; Patel, 2023).

Training content is often decided by external agencies or central bodies, with little or no input from teachers themselves. This mismatch between what training is offered and what teachers need could explain why many teachers see professional development programs as not relevant to their classroom practices (Rao & Kumar, 2022).

2.3 Teaching Effectiveness: Conceptualisation and Measurement

Teaching effectiveness is a complex concept that includes the knowledge, skills, and attitudes that help teachers support student learning (Hattie, 2009; Stronge et al., 2011). Researchers have proposed various ways to understand teaching effectiveness, often including dimensions like content knowledge, teaching methods, classroom management, assessment strategies, and interpersonal skills (Danielson, 2007; Pianta et al., 2008). Measuring teaching effectiveness has been a topic of much discussion, reflecting the complexity of the concept and different viewpoints from stakeholders (Darling-Hammond, 2017).

Approaches to measuring teaching effectiveness include student performance results, classroom observations, teacher self-evaluations, student feedback, and portfolios (Stronge et al., 2011). Each method has its own strengths and limitations, and researchers increasingly support the use of multiple methods to gain a better understanding of teacher performance (Kane & Staiger, 2012). In the Indian context, research on teaching effectiveness is limited, with most studies focusing on student outcomes like academic achievement (Mehta & Aggarwal, 2021).

Recent studies have started to explore more detailed views of effective teaching. For example, Singh (2023) identified five areas of teaching effectiveness in Indian schools: lesson planning, classroom management, student involvement, assessment methods, and professional dedication. Similarly, Sharma and Gupta (2024) found that teachers' confidence and professional values were closely related to how effective they were seen to be by students and colleagues.

2.4 The Relationship Between Teacher Training and Teaching Effectiveness

A large body of research has examined the link between teacher training and teaching effectiveness, with meta-analyses generally showing positive but modest impacts (Kennedy, 2016; Yoon et al., 2007).

The success of training depends on several factors, including the content, length, and design of the program, along with the context in which it takes place (Desimone, 2009; Guskey, 2002). Studies exploring how training influences teaching effectiveness have identified several key mediators.

First, training is most effective when it is focused on content, interactive, and ongoing (Desimone, 2009). Second, training that provides opportunities for practice, feedback, and reflection is more likely to bring about changes in teaching practices (Timperley et al., 2007). Third, training is more effective when it aligns with teachers' existing knowledge and beliefs, highlighting the importance of needs assessment (Guskey, 2002).

Research on teacher training in developing countries, including India, has yielded mixed results.

Some studies show that training positively affects teaching practices and student outcomes (Patel, 2023; Rao & Kumar, 2022), while others find limited or inconsistent effects (Singh, 2023; Mehta & Aggarwal, 2021). These findings suggest that the effectiveness of training depends on various contextual factors, such as the quality of implementation, the level of institutional support, and how well training matches teachers' needs.

2.5 Theoretical Framework

This study is based on three complementary theoretical frameworks that help in understanding the relationship between training needs and teaching effectiveness.

Andragogy Theory (Knowles, 1984): This theory suggests that adult learners have different characteristics compared to younger learners.

Adults are self-directed, bring a lot of experience to learning, are motivated by internal factors, and want to see how learning relates to their professional work. In the context of teacher development, this framework suggests that teachers' training needs should be identified through collaborative processes and that training should be relevant, practical, and responsive to the expressed needs of teachers.

Transformative Learning Theory (Mezirow, 1991): This theory explains that learning for adults involves a process of changing their viewpoints through thinking critically. For teachers to fully use new teaching methods, such as those required by the NEP 2020, they must go through a process that challenges their current beliefs and ways of teaching. This theory shows that identifying training needs is important before any real change can happen—teachers need to understand what they lack in their teaching before they can learn and improve.

Human Capital Theory (Becker, 1964): This theory from economics looks at education and training as investments in people's skills that result in better productivity and performance.

In the case of teacher development, training should lead to better teaching and better results for students. This theory helps explain why training is important and supports the idea that training should be based on proven needs and evidence.

2.6 Research Gap and Contribution

Although there is a lot of information about teacher professional development generally, there is still much to learn about this topic in the Indian context.

Specifically, there is not enough information on: (a) how teachers identify their training needs at the school level; (b) how these needs relate to how effective teachers are; (c) the kinds of problems schools face in offering good training; and (d) the special difficulties CBSE schools experience in carrying out training that aligns with NEP 2020.

This study helps fill these gaps by focusing on a specific case study of a CBSE school, providing real data on the training needs of teachers and how these needs connect to their teaching effectiveness.

The study helps in two ways: theoretically by applying and testing ideas from adult learning and human

capital development in the Indian setting, and practically by offering clear advice for improving teacher training at the school level.

III. METHODOLOGY

3.1 Research Design

This study uses a mixed-methods approach that combines both quantitative and qualitative methods.

This way, the study can collect numerical data on training needs and teaching effectiveness while also gathering in-depth insights that explain how these are connected (Creswell & Plano Clark, 2017). The study uses a convergent parallel design where both types of data are collected at the same time, analysed separately, and then combined for a full interpretation.

3.2 Research Objectives

The specific goals of this study are:

1. To find out the training needs of teachers at Swamy Vivekananda Higher Secondary School, Bagalur
2. To evaluate how effective teachers currently are
3. To examine how training needs affect teaching effectiveness
4. To find out the problems in providing effective training
5. To suggest ways to improve teaching through training that meets identified needs

3.3 Research Hypotheses

For the quantitative part of the study, the following hypotheses were developed:

H1: There is a strong positive link between identifying training needs and teaching effectiveness.

H2: Teachers who take training that meets their specific needs are more effective in teaching than those who take general training.

H3: There is a noticeable difference between what teachers think they need and what training is currently provided by the school.

H4: School-related problems have a major impact on how effective teacher training is.

3.4 Study Area

The study was carried out at a CBSE-affiliated Higher Secondary School in Bagalur, a semi-urban area of Karnataka, India.

The school was founded in 1995 and teaches around 1,200 students from kindergarten to grade 12. The

school was chosen because: (a) it is a CBSE school, giving a clear structure for professional development; (b) it has many teachers covering various subjects and grade levels (total of 52); (c) it was easy for the researcher to access; (d) the school was willing to take part; and (e) it represents other similar CBSE schools in semi-urban parts of India.

3.5 Population and Sample

The study included all permanent teachers at the CBSE school in Bagalur during the academic year 2025-26 (total of 52 teachers).

Contract teachers (7 in total) were not included to make sure all teachers had similar chances for training and development.

A total of 45 teachers took part, giving a response rate of 86.5%.

The teachers covered different sections:

- Primary section (Grades 1-5): 12 teachers (26.7%)
- Middle section (Grades 6-8): 15 teachers (33.3%)
- Secondary section (Grades 9-10): 10 teachers (22.2%)
- Senior Secondary section (Grades 11-12): 8 teachers (17.8%)

The teachers were from different subjects including Mathematics, Science, Social Studies, Languages, and Commerce.

For the qualitative part, purposive sampling was used to select 12 teachers from different subject areas, grade levels, and experience levels.

3.6 Data Collection Instruments

3.6.1 Structured Questionnaire

A structured questionnaire was created based on previous studies and adapted to the Indian context.

It had five sections:

Section A: Demographic Information collected details like age, gender, qualifications, teaching experience, subject taught, and grade level.

Section B: Training Needs Assessment covered teachers' views on training needs in 12 areas based on teacher competencies: improving subject knowledge, enhancing pedagogical content knowledge, improving classroom management, digital literacy and tech use, assessment strategies, inclusive practices, student

guidance, communication, research and teaching innovation, life skills education, value education, and leadership skills.

Each item was rated on a 5-point scale (1 = Very Low Need, 5 = Very High Need).

Section C: Training Participation and Satisfaction measured the types of recent training, how often teachers attended, how useful they found the training, and how satisfied they were with the quality of training.

Section D: Teaching Effectiveness Self-Assessment evaluated teachers' views on how effective they were in 10 areas: lesson planning, content delivery, student engagement, innovative methods, classroom management, assessment and feedback, student outcomes, professional ethics, collaboration with others, and communication with parents.

Each item was assessed on a 5-point scale.

Section E: Barriers to Effective Training included both Likert-scale items and open-ended questions to find out the main challenges in training effectiveness.

3.6.2 Semi-Structured Interview Guide

A semi-structured interview guide was developed to explore: (a) personal experiences with training programmes; (b) specific training needs not addressed by current programmes; (c) perceptions of teaching effectiveness and factors influencing it; (d) institutional support for professional development; and (e) recommendations for improving training effectiveness.

3.6.3 Document Analysis

Institutional documents were reviewed, including school training records, annual reports, professional development policies, and CBSE CPD guidelines relevant to the school.

3.7 Pilot Study

A pilot study was conducted with 10 teachers (not included in the final sample) to test the clarity and comprehensibility of the questionnaire, assess the reliability of the research instruments, identify any issues with the data collection procedure, and refine the instruments based on feedback. The Cronbach's alpha coefficient for the questionnaire was 0.87, indicating high internal consistency.

3.8 Data Collection Procedure

Data collection occurred in four phases:

Phase 1 (March 2026): Obtaining institutional permission and ethical clearance. Consent forms were distributed to all potential participants.

Phase 2 (April 2026): Administration of the structured questionnaire to 45 teachers during staff meetings with the researcher present to clarify any doubts.

Phase 3 (May-June 2026): Semi-structured interviews were conducted with 12 teachers. Each interview lasted 30-45 minutes and was audio-recorded with participant consent.

Phase 4 (July-August 2026): Document analysis was completed by reviewing institutional records and training documents.

3.9 Data Analysis

Quantitative Analysis: Questionnaire data were analysed using SPSS version 26.0. Descriptive statistics (mean, standard deviation, frequency, percentage) were used to summarise demographic characteristics, training needs, and teaching effectiveness scores.

Inferential statistics (Pearson correlation, independent t-test, ANOVA, regression analysis) were used to test the research hypotheses.

Qualitative Analysis: Interview transcripts were analysed using thematic analysis following the six-phase framework of Braun and Clarke (2006): familiarisation, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and writing the report.

3.10 Ethical Considerations

The study adhered to the following ethical principles:

- all participants provided written informed consent;
- anonymity was maintained, and pseudonyms were used in reporting;
- participants could withdraw at any time without penalty;
- the study was designed to minimise any potential harm and maximise benefits; and
- institutional approval was obtained from the school administration.

3.11 Limitations of the Study

The study has several limitations that should be considered when interpreting findings. First, the case study design limits generalisability; the findings are specific to Swamy Vivekananda Higher Secondary School and may not be representative of other schools. Second, the reliance on self-report measures may introduce social desirability bias. Third, the cross-sectional design provides a snapshot at one point in time, making it difficult to establish causality. Fourth, the sample size of 45 teachers, while appropriate for a case study, limits the generalisability of findings. Finally, the barriers identified may be specific to the institutional context and may not be representative of challenges faced by other schools.

IV. RESULTS

4.1 Demographic Profile of Respondents

Table 1 presents the demographic characteristics of the teacher respondents.

Table 1: Demographic Profile of Teachers

Gender	Male	18	40.0%
	Female	27	60.0%
Age	20-30 years	10	22.2%
	31-40 years	18	40.0%
	41-50 years	12	26.7%
	Above 50 years	5	11.1%
Educational Qualification	Graduate (BA/B.Sc./B.Com.)	15	33.3%
	Postgraduate (MA/M.Sc./M.Com.)	22	48.9%
	B.Ed.	30	66.7%
	M.Ed.	6	13.3%
	Ph.D.	2	4.4%
Teaching Experience	Less than 5 years	8	17.8%
	5-10 years	14	31.1%
	11-15 years	12	26.7%
	More than 15 years	11	24.4%
Grade Level Taught	Primary (1-5)	12	26.7%
	Middle (6-8)	15	33.3%
	Secondary (9-10)	10	22.2%
	Senior Secondary (11-12)	8	17.8%

Note: Percentages may not sum to 100% due to multiple qualifications in the B.Ed. category.

The demographic profile reveals that the majority of teachers are female (60%), aged 31-40 years (40%), and hold postgraduate degrees with B.Ed. qualifications. Nearly half (48.9%) have between 5-10 years of teaching experience. The distribution across grade levels is relatively balanced, with the highest representation from the middle section (33.3%).

4.2 Training Needs Assessment

Table 2 presents the mean scores for self-perceived training needs across 12 domains.

Table 2: Training Needs of Teachers

Digital literacy and technology integration	4.52	0.63	High Need
Competency-based assessment	4.38	0.72	High Need
Inclusive education practices	4.21	0.78	High Need
Classroom management	4.18	0.74	High Need
Student counselling and guidance	4.13	0.81	High Need
Research and innovation in teaching	4.09	0.79	High Need
Pedagogical content knowledge	3.98	0.85	Moderate Need
Subject knowledge enhancement	3.92	0.88	Moderate Need
Life skills education	3.85	0.92	Moderate Need
Communication and interpersonal skills	3.78	0.95	Moderate Need
Value education and ethics	3.65	0.97	Moderate Need
Leadership and administrative skills	3.42	1.02	Moderate Need

Note: Scale: 1 = Very Low Need, 5 = Very High Need

The findings reveal that the highest training need is in the domain of Digital Literacy and Technology Integration (Mean = 4.52, SD = 0.63), followed by Competency-Based Assessment (Mean = 4.38, SD = 0.72), Inclusive Education Practices (Mean = 4.21, SD = 0.78), and Classroom Management (Mean = 4.18, SD = 0.74). These results align with the current trends in Indian education identified in the literature review, particularly the emphasis on digital transformation, NEP 2020 requirements, and inclusive education.

3. Teaching Effectiveness Assessment

Table 3 presents the mean scores for teacher self-assessment of teaching effectiveness across 10 domains.

Table 3: Teaching Effectiveness Self-Assessment

Professional ethics and commitment	4.45	0.58	High
Parent-teacher communication	4.32	0.65	High
Lesson planning and preparation	4.28	0.62	High
Collaboration with colleagues	4.18	0.71	High
Subject matter delivery	4.12	0.68	High
Student engagement and motivation	4.05	0.74	Moderate-High
Classroom management	3.98	0.78	Moderate-High
Assessment and feedback practices	3.85	0.82	Moderate
Use of innovative teaching methods	3.72	0.88	Moderate
Student learning outcomes	3.65	0.91	Moderate

Note: Scale: 1 = Very Low, 5 = Very High

Teachers rated themselves highest in Professional Ethics and Commitment (Mean = 4.45, SD = 0.58), Parent-Teacher Communication (Mean = 4.32, SD = 0.65), and Lesson Planning (Mean = 4.28, SD = 0.62). However, lower scores were observed in Use of Innovative Teaching Methods (Mean = 3.72, SD = 0.88) and Student Learning Outcomes (Mean = 3.65, SD = 0.91). This finding is particularly significant as it indicates that while teachers demonstrate strong commitment and preparation, they perceive their instructional innovation and the resultant student outcomes to be relatively weak.

4.4 Correlation Between Training Needs and Teaching Effectiveness

Table 4 presents the Pearson correlation analysis examining the relationship between training needs and teaching effectiveness.

Table 4: Correlation Between Training Needs and Teaching Effectiveness

Digital literacy and technology integration	0.78	<0.01
Competency-based assessment	0.72	<0.01
Inclusive education practices	0.68	<0.01
Classroom management	0.64	<0.01
Student counselling and guidance	0.61	<0.01
Research and innovation in teaching	0.59	<0.05
Pedagogical content knowledge	0.52	<0.05
Subject knowledge enhancement	0.48	<0.05
Life skills education	0.45	<0.05
Communication and interpersonal skills	0.41	<0.05
Value education and ethics	0.35	>0.05
Leadership and administrative skills	0.28	>0.05

The correlation analysis reveals a significant positive relationship between training needs and teaching effectiveness.

The strongest correlations are observed for Digital Literacy and Technology Integration ($r = 0.78$, $p < 0.01$) and Competency-Based Assessment ($r = 0.72$, $p < 0.01$). This suggests that training in these areas has the greatest potential impact on enhancing teaching effectiveness. This finding supports Hypothesis H₁, indicating that identifying training needs is positively associated with teaching effectiveness.

4.5 Comparison: Perceived Training Needs vs. Current Training Programmes

Table 5 presents a comparison of teachers' perceived training needs and the training programmes currently offered by the school.

Table 5: Training Needs vs. Current Training Programmes

Digital literacy and technology integration	4.52	Monthly	Moderate gap
Competency-based assessment	4.38	Quarterly	Significant gap
Inclusive education practices	4.21	Annual	Significant gap
Classroom management	4.18	Quarterly	Moderate gap
Student counselling and guidance	4.13	Annual	Significant gap
Research and innovation in teaching	4.09	Rarely	Significant gap
Pedagogical content knowledge	3.98	Quarterly	Minimal gap
Subject knowledge enhancement	3.92	Quarterly	Minimal gap
Life skills education	3.85	Annual	Moderate gap
Communication and interpersonal skills	3.78	Annual	Minimal gap
Value education and ethics	3.65	Annual	Minimal gap
Leadership and administrative skills	3.42	Rarely	Minimal gap

Gap Analysis:

The comparison reveals significant gaps between perceived training needs and current training offerings in several critical areas: Inclusive Education Practices, Competency-Based Assessment, Student Counselling and Guidance, and Research and Innovation in Teaching. These findings support Hypothesis H₃, indicating a significant gap between perceived training needs and current training offerings.

4.6 Barriers to Effective Training Implementation

Table 6 presents the identification of barriers to effective teacher training implementation.

Table 6: Barriers to Effective Teacher Training

Time constraints due to heavy workload	38	84.4%	4.58
Lack of follow-up and reinforcement	35	77.8%	4.42
Training content not aligned with classroom needs	32	71.1%	4.28
Insufficient institutional support	29	64.4%	4.15
Financial constraints	25	55.6%	3.95
Lack of motivation/incentive	22	48.9%	3.78
Lack of access to quality training resources	20	44.4%	3.72
Poor training delivery methods	18	40.0%	3.58
Limited peer learning opportunities	15	33.3%	3.42

Note: Scale: 1 = Strongly Disagree, 5 = Strongly Agree

The most significant barrier identified is Time Constraints Due to Heavy Workload (Mean = 4.58, reported by 84.4% of teachers). This is followed by Lack of Follow-up and Reinforcement (Mean = 4.42), Training Content Not Aligned with Classroom Needs (Mean = 4.28), and Insufficient Institutional Support (Mean = 4.15).

4.7 Impact of Training Needs on Teaching Effectiveness
Table 7 presents the comparison of teaching effectiveness between teachers with high training satisfaction and those with low training satisfaction.

Table 7: Teaching Effectiveness by Training Satisfaction

High Satisfaction (n=18)	4.38	0.52	4.85	<0.01
Moderate Satisfaction (n=16)	3.95	0.58		
Low Satisfaction (n=11)	3.52	0.65		

The independent t-test reveals a statistically significant difference ($t = 4.85, p < 0.01$) in teaching effectiveness between teachers with high training satisfaction (Mean = 4.38) and those with low training satisfaction (Mean = 3.52).

This finding supports Hypothesis H₂, indicating that teachers who participate in need-based, satisfying training programmes demonstrate higher teaching effectiveness.

Table 8: Regression Analysis: Training Needs as Predictor of Teaching Effectiveness

Constant	1.85		4.25	<0.01
Training Needs Score	0.52	0.62	6.85	<0.01

$R^2 = 0.38, F = 46.92, p < 0.01$

The regression analysis shows that training needs score significantly predicts teaching effectiveness ($\beta = 0.62, p < 0.01$), explaining 38% of the variance in teaching effectiveness. This finding provides strong support for the impact of training needs on teaching effectiveness.

4.8 Qualitative Findings

Thematic analysis of interview transcripts revealed five major themes:

Theme 1: Digital Transformation Gap

Teachers expressed significant anxiety about the rapid pace of digital transformation in education. While schools are increasingly equipped with smart boards and digital resources, teachers feel inadequately prepared to utilise these effectively.

"The school invested in technology, but the investment in teacher training to use that technology has been minimal. We need to learn how to create digital content, not just display it."— Teacher 10 (Senior Secondary, 14 years' experience)

Theme 2: NEP 2020 Implementation Challenges

Teachers acknowledged the vision of NEP 2020 but expressed practical concerns about its implementation. The shift from traditional teaching to competency-based, experiential learning was perceived as challenging without proper training and support.

"NEP is excellent on paper, but in reality, we have to deal with parents who are still exam-oriented. The curriculum has changed, but the mindset hasn't. We need training on how to manage this transition."—Teacher 12 (Secondary Section, 9 years' experience)

Theme 3: Institutional Constraints

Teachers identified several institutional constraints that limit training effectiveness, including lack of dedicated time for professional development, limited financial resources, absence of structured career advancement linked to training, and inadequate infrastructure for implementing new practices.

Theme 4: Customised Training Needs

Teachers emphasised that training must be customised to their specific contexts, subject areas, and experience levels.

"One-size-fits-all training doesn't work. A primary teacher and a senior secondary teacher have completely different needs. The training programmes need to reflect this."—Teacher 1 (Primary Section, 4 years' experience)

Theme 5: Desire for Continuous Learning

Despite the barriers, teachers expressed strong motivation for professional growth. They value training that is practical, relevant, and leads to visible improvements in their teaching.

"We want to learn. We want to improve. But we need the right opportunities, support, and time. When training is good, it transforms our teaching."—Teacher 8 (Primary Section, 6 years' experience)

measurable returns in productivity. In this context, need-based training represents an investment in teachers' human capital that directly enhances their teaching effectiveness.

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V. DISCUSSION

5.1 Interpretation of Key Findings

The findings of this study demonstrate a significant positive relationship between identified training needs and teaching effectiveness, supporting Hypothesis H₁ and aligning with the theoretical framework of Human Capital Theory (Becker, 1964), which posits those investments in human capital development yield