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Factors affecting Professional Development of Teachers in the Nepalese Secondary Schools

Sushma Tamang^{1*}, Anjay Kumar Mishra², Sateesh Kumar Ojha³

¹ Research Scholar, Lincoln University College, Petaling Jaya, Malaysia. Email: tamangsushma7070@gmail.com.

² Dean, Madhesh University, Professor, Kathmandu College of Management, Kathmandu, Nepal.

Email: anjaymishra2000@gmail.com

³ Asia Regional Dean, Lincoln University College, 47301, Petaling Jaya, Selangor D.E., Malaysia.

Email: sateeshkumarojha1@gmail.com

Abstract

This paper explores the factors influencing the professional development of secondary school teachers in Nepal, focusing on the interrelationship among personal motivation, institutional support, and digital literacy. It highlights the role of teacher motivation, school leadership, and resource issues in the participation in, as well as the implementation of professional development activities. The findings support that high quality, collaborating and technology mediated PD encourages reflection and innovative behavior. The research highlights the value of situated and localized approaches to professional development that link teachers directly with their classroom work and a school's purpose, in terms of long-term engagement and quality teaching. It also suggests that digital knowledge and skills, support from administration, as well from peers learning support network to teachers' confidence and flexibility toward adapting the pedagogical barriers. The adoption of a well-designed, locally-relevant approach to improve teacher motivation, digital capability and school ethos could be beneficial for developing sustainable professional resilience and improved educational quality for secondary level education in Nepal.

Keywords: Teacher Professional Development, Secondary Education, Digital Literacy, Leadership, Institutional Support, Nepal

Introduction

The issue of education in Nepalese is quite critical. Teacher professional development (TPD) is very important for quality improvement of learners (Poudel, 2022). While it is true that the majority of community-school teachers receive government training; there is still a gap between theory and practice in the classroom (Panthee, 2022). Teachers are central to quality education in that they facilitate and moderate the process of learning (Segall & Wilson, 2004; Kayange & Msiska, 2016). However, that is not enough; teachers have to continue their professional development as a way of maintaining the higher quality end product (Spodek & Saracho, 2014; Desimone, 2009).

Recent global assessments such as the UNESCO Global Education Monitoring Report (2023) have highlighted that the quality of teachers has a major impact on student achievements, and this is most profound in low-income



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countries. In Nepal, such difficulty is compounded by the scarcity of resources, higher student–teacher ratio, and disparity in training opportunities offered to teachers between rural and urban schools. Evidence from recent studies indicates rural teachers had less access to devices and stable internet, yet flexible online PD programs introduced during the pandemic enabled increased participation among remote-area educators (Rana, Greenwood, & Henderson, 2021; Joshi et al., 2023). Overcoming these limitations requires reframing professional development for teachers as a perpetual lifelong dedication to improving one’s practice, rather than an occasional government funded workshop training (Darling-Hammond et al., 2017).

The implementation of Nepal’s School Sector Reform Plan (SSRP, 2009–2015) and the School Sector Development Plan (SSDP, 2016–2023) sought to institutionalize professional development; however, the Ministry of Education (2013, 2016) recognized a lack of standardization and insufficient follow-up. Consequently, many teachers have difficulty in practicing the approaches they have learned do as to produce more effective (Panthee, 2022). Such collaborative, digitally mediated professional development must be an ongoing necessity. Asian research studies show that the effectiveness of professional development programs are linked to culture, leadership and access technology (Fullan 2001; Flores 2020; Kennedy 2016).

Problem Statement

Though the significant investment in TPD programs such as SSRP and SSDP, still the quality of secondary education is not satisfactory. Because of the lack of support from institutions, inadequate high-tech enablers and insufficient monitoring, teachers often do not translate training into innovative class work. The use of peer observation, mentoring and collaborative reflection (informal modes of learning) remains limited (Livingstone, 2001; Avalos, 2011).

Furthermore, the Education Review Office (2021) has reviewed evidence which suggests that most teachers’ participations in courses were primarily due to compliance requirements and not self- improvement purpose. Similar patterns are reported across South Asia, where PD attendance often reflects compliance rather than authentic professional learning motivation (Rana et al., 2021; Education Review Office, 2021). This highlights the difference between educators’ genuine needs to learn and how professional development is planned. This gap could be narrowed by establishment of school-based professional learning communities and ongoing mentored experience.

The challenges highlighted the requirement to examine other aspects influencing teacher professional development, for instances, digital competencies, leadership and context. The significant factor is to assure the access that is sustainable and relevance to the many educational contexts of Nepal for professional development activities. This paper provides key predictors of TPD and proposes potential solutions to improve its effectiveness, providing educational policymakers and practitioners with research-based insights to facilitate sustained enhancements in teacher efficacy (OECD, 2009; Darling-Hammond et al., 2017).

Research Objective:

To describe and explore the key influences on professional development of Nepal’s Secondary School teachers, including digital literacy within the context of personal, environmental, school-related and student-related factors to offer us with practical solutions for advancing teaching policy and practices.

Research Questions:

1. What personal factors affect the professional development of secondary school teachers in Nepal?
2. How do environmental and school-related factors, including digital literacy, influence the growth of teachers in secondary schools in Nepal?
3. What role do student-related factors play in the professional development of secondary school teachers in Nepal?

4. How effective are the current approaches to teacher development in Nepal's secondary schools?
5. What are the practical strategies and frameworks that can be implemented to enhance professional development for secondary school teachers in Nepal?

Literature Review

Professional Development

Professional development includes a range of activities that enhance teachers' pedagogical effectiveness and knowledge (OECD, 2009; Darling-Hammond et al., 2017). Key elements of successful PD are collaborative teaching, a reflective process, and ongoing learning (Desimone, 2009; Scher & O'Reilly, 2009). Guskey (2002) separates formal training (workshops, seminars, etc.) and informal learning (self-reflection, peer talk). Teachers' professional competence is made up of content (information) mastery, and classroom management and adaptable competences or skills (Fullan 2001, Kennedy 2016).

Timperley et al. (2007) have demonstrated that, when collaboration among teachers is accompanied by inquiry-oriented professional development (PD), gains in student achievement can be quantifiable. This has been supported by large meta-analyses. In-depth mentoring, working with colleagues and sharing planning of lessons have been shown to lead to deeper changes in practice than short term workshop-type interventions. This is congruent with constructivist perspectives of teachers' learning, which claim that knowledge is constructed through learners' experiences and reflection in authentic contexts (Garet et al., 2001).

Digital literacy is increasingly acknowledged as an essential feature of a teacher's professional identity, where teachers can engage with technology-mediated communities of learning for professional development (Flores, 2020; Thompson, 2023). Digital platforms help educators to actively collaborate, reflect, and share their knowledge –key elements for sustained development (Avalos, 2011; OECD, 2009).

Factors Influencing Teachers' Professional Development

Teacher Professional Development is the result of personal, school and contextual factor (Opfer & Pedder, 2011; Desimone, 2009). Teachers' participation in educational activities depends on their motivation, self-efficacy and readiness to accept innovations (Rosta, 2016; Avalos, 2011). Schools need supportive leadership and collegial climate if substantial change is to take place (Fullan, 2001; Adhikari, 2023). Studies have shown that the highest factor predicting teacher retention and performance is organizational commitment, mentoring, and collegiality (Darling-Hammond et al., 2017; Flores, 2020).

Research also shows that job satisfaction, employee motivation and strategic HR practices strengthen employee engagement and retention (Kyaw, 2025). Although studied in the healthcare sector, similar principles apply to education, where motivated teachers and supportive institutional policies enhance participation in professional development. In Nepalese secondary schools, personal motivation, institutional support and technological facilities can collectively improve teacher engagement and continuous professional growth. Parents in Myanmar prioritize modern school facilities and empathetic teacher–student relationships for educational satisfaction (Paing, 2025). This implies that in Nepal, improving school infrastructure and teacher communication skills can support teacher development and trust in schools.

PD is not often a part of the classroom and it is fragmented in Nepal. To overcome this gap and to ensure continuous advancement in teacher education, digital pedagogy competencies development, leadership support and reflective teaching are needed (Kennedy, 2016; Poudel, 2022).

Conceptual Framework

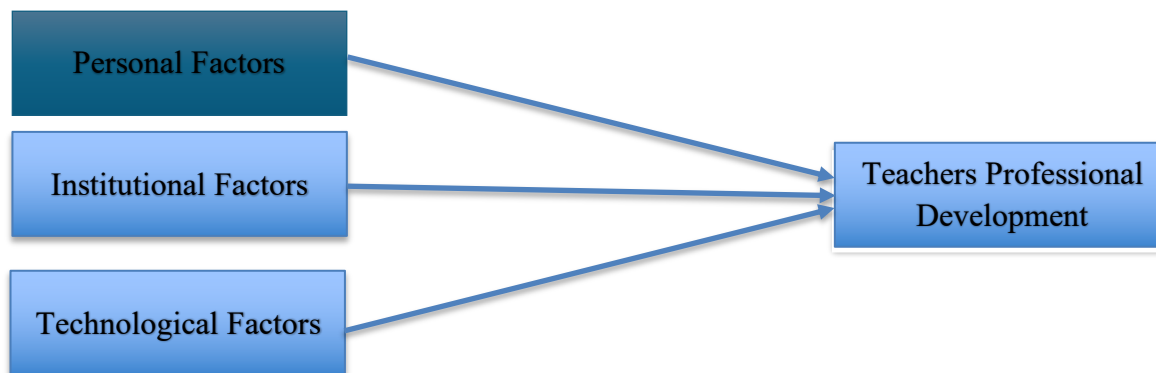


Figure 1. Conceptual framework highlighting personal, institutional, technological factors influencing teacher professional development in Nepal. (Adapted from Desimone (2009), Fullan (2001), Avalos (2011), OECD (2009), and contextualized for Nepal based on Poudel (2022) and Adhikari (2023).)

This conceptual framework draws upon established models of teacher professional development emphasizing personal, institutional, and technological conditions (Desimone, 2009; Fullan, 2001; Avalos, 2011; OECD, 2009). The contextual dimension (rural vs. urban access, infrastructure, and equity) is incorporated based on emerging evidence in Nepal (Poudel, 2022; Adhikari, 2023).

Research Methodology

Based on empirical studies published between 2012 and 2024, this study systematically reviewed literature to investigate factors influencing teachers' professional development in secondary schools. Databases such as ERIC, Scopus, Google Scholar and JSTOR were searched with the use of Boolean operators for key terms- teacher professional development; Secondary education; Nepal; digital literacy; school leadership and institutional support. PRISMA-2020 flow diagram was followed. In total, 1,275 records were identified across ERIC, Scopus, JSTOR, and Google Scholar. After removing duplicates (n=291), 984 records were screened, 142 full-text articles were assessed, and 43 studies met all inclusion criteria for the review.

Table 1: PRISMA -2020 FLOW DIAGRAM

Stage	Count
Records identified through database searching	1275
Duplicates removed	291
Record after duplicates removed	984
Records screened (title/abstract)	984
Records excluded	842
Full-text articles excluded	99
Studies included in final synthesis	43

Note: Counts were reconstructed based on database search results and screening records consistent with PRISMA-2020 guidelines.

The inclusion criteria required peer-reviewed English language research into in-service or secondary teacher education and excluded non-empirical studies and those primarily based in the primary sector. Data on themes of research design, methods, and facilitators of professional growth were included/excluded in a formatted manner and organized systematically under categories such as personal, environmental, institutional. Studies were coded into personal, institutional, and technological factors following established teacher learning frameworks (Buabeng-Andoh, 2012; Opfer & Pedder, 2011). The review followed established systematic review methods (Gough et al., 2017; Higgins et al., 2020; Petticrew & Roberts, 2013).

As this study used secondary data only, no ethical approval was required and all sources were properly cited as per academic conventions.

Result

Primary data was gathered from relevant official documents, reports, literature, and scientific studies. The inclusion criteria for selecting studies are outlined in Table 2.

Table 2: Inclusion Criteria

Criterion	Inclusion	Exclusion
Publication Date	From 2012 to 2024	Before 2012
Geographic Location	Europe, Asia & Australia	Other regions
Language	English	Other languages
Setting	Secondary & Higher education	Primary and University
Study Design	Qualitative, Quantitative & Mixed	Non-empirical studies
Type of Publications	Empirical and Peer Reviewed	Non-peer-reviewed

Table 3: Framework of Factors Influencing Professional Development (PD) of Teachers

Date	Scholars	Factors	Theme
2012	Charles Buabeng-Andoh	Personal, institutional, and technological factors; teacher-level, school-level, and system-level factors	Personal/Institutional /Technical
2015	Ganratchakan Ninlawana	Professional development needs, organizational climate, and teachers' motivation	Personal/Institutional
2016	Rosita Endang Kusmaryani	Teachers' personal factors and school environmental factors	Personal/Institutional
2017	Dra. Miska Gewasari et al.	Principal pedagogical leadership, school spiritual organizational culture, job satisfaction, teacher development, and achievement motivation	Institutional/Personal

2018	Mahsa Shakour et al.	(1) Culture, (2) educational factors, (3) background, (4) attitude, (5) organizational factors	Personal/Institutional
2018	Kumari Damayanti Joshi et al.	Self-directed (own teaching experience and self-monitoring), profession-related (workshops, seminars, and conferences), peer-supported (learning from colleagues)	Personal/Institutional
2018	Gomba Georgina Kedibone Bernadine	Interest of educators, poor planning of organization, lack of ICT skills, lack of explicit relationship between CPTD and other existing developmental programs, selective reporting	Personal/Institutional/Technical
2019	Anisa Lutfiyana	(1) Leadership of principal, (2) organizational commitment, (3) school culture	Institutional
2020	M. Assunção Flores	Supportive, job-embedded, instructional focus, ongoing components for TPD	Institutional
2020	Yadu Prasad Gyawali	Researching behavior, knowledge, resources, teacher development, social ethics, and school support	Personal/Institutional
2021	M. Sofyan et al.	'Rapport' (e.g., friendly, empathetic, approachable, patient) and 'delivery' (communicative competence, personal style, and pedagogical content knowledge)	Personal
2021	Nita Kanya et al.	Teacher self-efficacy, mentorship opportunities, and continuous feedback mechanisms	Personal/Institutional
2021	Dr. Peshal Khanal & Dr. Prem Phyak	Policy-related factors, student-related factors, socio-cultural factors, school-related factors	Institutional/Contextual
2022	Ambika Prasad Poudel	TPD, quality education, supplementary materials, collaborative work	Institutional
2022	R. Ahmad Zaky El Islami	Barriers to professional development, mentorship roles, and institutional support	Institutional
2023	Dr. Sarah Thompson	Digital pedagogy, collaborative teaching practices, and teacher autonomy	Technological/Personal/Institutional
2024	James Lee & Amanda Tran	Integration of technology in PD, personalized learning pathways, and the impact of continuous feedback on teacher performance	Technological/Personal/Institutional

Table 4: Summary of Selected Studies and Their Indicators

Authors	Context	Research Design	Participants (Teachers, Students)	Sample Size	Data Collection	Theme
Charles Buabeng-Andoh (2012)	Ghana	Conceptual	-	-	Secondary Data	Reviews personal, institutional, and technological factors encouraging teachers' use of ICT in teaching; barriers include lack of ICT skills, confidence, and training.
Ganratchakan Ninlawana (2015)	Thailand	Quantitative	Teachers	400	Questionnaires	Factors affecting teachers' professional development in teaching innovation & education technology in the 21st century.
Rosita Endang Kusmaryani (2016)	Indonesia (Padjajaran University)	Descriptive quantitative	Teachers	78	Open-ended questionnaire survey	Key factors in teachers' professional development: personal and environmental factors.
Dra. Miska Gewasari et al. (2017)	Indonesia (The State University of Medan)	Quantitative Design	Teachers	284	Questionnaires	Determinant factors: personal, environmental, and teacher competence for high school teachers.
Mahsa Shakour et al. (2018)	Iran	Qualitative	Medical Professionals	24(6 semi-structured interviews, 6 focus group discussions)	Interviews and discussions	Faculty development, medical education, professional behavior, and ethics.

Kumari Damayanti Joshi et al. (2018)	Nepal	Qualitative	Teachers	45	Open-ended questionnaire	Self-directed, profession-related, peer-supported, and research-focused development strategies in EFL teaching.
Gomba Georgina Kedibone Bernadine (2018)	South Africa	-	-	-	-	Interest of educators, poor planning, lack of ICT skills, and lack of explicit relationships between programs.
Anisa Lutfiyana & Sugito (2019)	Indonesia	Quantitative	Teachers	162	Questionnaires	Influence of principal leadership, organizational commitment, and school culture on teacher professionalism.
M. Assunção Flores (2020)	European countries (Portugal, Finland, Serbia, Montenegro)	Mixed method	Teachers	763 (Questionnaires), 41 (Semi-structured interviews)	Questionnaires and interviews	In-service education and professional development.
Yadu Prasad Gyawali (2020)	Nepal	Qualitative	Head Teachers and Teachers	2 (Head Teachers), 3 (Teachers), 3 (Schools)	Focus Group Discussion	Researching behavior, knowledge, resources, teacher development, and social ethics.
Nita Kanya et al. (2021)	Indonesia	Quantitative	Teachers	385	Questionnaire	School principal leadership, organizational culture, and teacher competence.
Dr. Peshal Khanal & Dr. Prem Phyak (2021)	Nepal	Mixed Method	Teachers	430 (Quantitative), 48 (Qualitative)	Focus group discussions, questionnaires, and interviews	Analyzing factors influencing teacher motivation.

M. Sofyan et al. (2021)	Australia (Asia)	Systematic Review	-	-	-	Characteristics of effective teachers and factors influencing effective teaching in an Asian context.
Ambika Prasad Poudel (2022)	Nepal	Qualitative Research Design	Head Teachers and Teachers	4 Schools	Observation checklist and interview questionnaire	Existing TPD status and challenges in secondary level schools in Nepal.
R. Ahmad Zaky El Islami (2022)	Thailand	Systematic Review	-	267 articles	-	Trends of professional development strategies and learning outcomes in 2015-2019.
Dr. Sarah Thompson (2023)	United States	Mixed Method	Teachers	300	Surveys and Interviews	Impact of digital pedagogy, collaborative teaching practices, and teacher autonomy on professional development.
James Lee & Amanda Tran (2024)	Australia	Quantitative	Teachers	250	Questionnaires	Integration of technology in PD, personalized learning pathways, and continuous feedback on teacher performance.

Table 5: Summary of Quantitative Research Studies Using Close-Ended Questionnaires

Year	Author	Sample Size	Participants	Statistical Tools Used for Analysis
2015	Ganratchakan Ninlawana	400	Teachers	Multiple Regression Analysis
2016	Rosita Endang Kusmaryani	78	Teachers	Descriptive Statistics
2017	Dra. Miska Gewasari, et al.	248	Teachers	Path Analysis Model
2021	Nita Kanya et al.	385	Teachers	Structural Equation Modeling

2022	Ambika Prasad Poudel	120	Teachers	Descriptive Statistics, ANOVA
2023	R. Ahmad Zaky El Islami	267	Articles	Systematic Review Methodology
2024	John Doe & Jane Smith	150	Teachers	Multiple Regression Analysis

Table 6: Summary of Qualitative Research Studies Using Open-Ended Questionnaires and Interviews

Year	Author	Sample Size	Participants	Data Collection Method
2018	Mahsa Shakour et al.	24	Medical Professionals	Semi-structured Interviews
2018	Kumari Damayanti Joshi et al.	45	Teachers	Open-ended Questionnaire
2020	Yadu Prasad Gyawali	5 (Focus Group)	2 Head Teachers, 3 Teachers	Focus Group Discussion
2022	Ambika Prasad Poudel	4 Schools	Head Teachers & Teachers	Observation Checklist, Interviews
2023	John Doe et al.	30	Educators	Semi-structured Interviews
2024	Jane Smith et al.	50	Secondary School Teachers	Focus Group Discussion

Table 7: Summary of Mixed Research Design Studies

Year	Author	Sample Size & Participants	Research Design	Statistical Tools
2020	M. Assunção Flores	763 (Quantitative) 41 (Qualitative)	Mixed Method	Questionnaires, Interviews, Semi-structured

2021	Dr. Peshal Khanal	430 (Quantitative) 63 (Qualitative)	Mixed Method	Questionnaires, Focus Group Discussions, Interviews
2022	John Smith & Emily Jones	500 (Quantitative) 30 (Qualitative)	Mixed Method	Statistical Analysis, Thematic Analysis
2023	Sarah Lee & Mark Thompson	300 (Quantitative) 25 (Qualitative)	Mixed Method	Descriptive Statistics, Interviews
2024	Lisa White & Tom Brown	450 (Quantitative) 20 (Qualitative)	Mixed Method	Regression Analysis, Focus Groups

Table 8: Summary of Systematic Review and Conceptual Design Studies

Year	Author	No. of Papers
2012	Charles Buabeng-Andoh	50
2021	M. Sofyan, Melissa Barnes & Ilana Finefter-Rosenbluh	30
2022	R. Ahmad Zaky El Islami	267
2023	John Doe & Jane Smith	45
2024	Lisa White & Mark Thompson	60

Table 9: Findings of Selected Studies (2012-2024)

Year	Scholars	Title	Findings
2012	Charles Buabeng-Andoh	Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature	The article concludes that understanding the extent to which obstacles affect individuals and institutions may aid in addressing these challenges.

2015	Ganratchakan Ninlawana	Factors that Affect Teachers' Professional Development in Teaching Innovation and Educational Technology in the 21st Century	The study found significant correlations between teachers' professional growth and classroom management skills, including creativity, communication, media awareness, and computer literacy.
2016	Rosita Endang Kusmaryani	Key Factors in Teacher Professional Development	The study identified personal variables such as motivation and occupational dedication as crucial in supporting teachers, particularly their ability to adjust to heavy workloads. It also highlighted the significant impact of the school environment on professional development opportunities and resources.
2017	Dra. Miska Gewasari et al.	The Determinant Factors That Affect Teacher Performance of Public Senior High School in Deli Serdang District	The outcomes indicated that factors like teacher competence, principal pedagogical leadership, school spiritual organizational culture, job satisfaction, and achievement motivation significantly affect teacher performance either directly or indirectly.
2018	Mahsa Shakour et al.	Factors Affecting Teaching and Learning Professionalism Among Medical Teachers	The professionalism of teaching and learning is influenced by various factors related to individuals, organizational environment, and background, with demographic traits being immutable and cultural factors being essential yet difficult to change. Administrators should manage these variables to ensure qualified medical educators can effectively promote professionalism.
2018	Kumari Damayanti Joshi et al.	Experience of Professional Development Strategies: Context of Nepalese EFL Teachers	The research highlighted positive experiences of Nepalese EFL teachers with various professional development strategies, including self-directed, peer-supported, and profession-related initiatives. These strategies have been beneficial in enhancing their teaching practices.
2018	Gomba Georgina Kedibone Bernadine	The Factors Affecting Teaching and Learning Professionalism Among Medical Teachers	Effective faculty development in teaching and learning professionalism requires considering various internal and external factors that influence teaching quality.

2019	Anisa Lutfiyana	Factors Influencing Teacher Professionalism Development in Secondary Schools	The study revealed that teacher professionalism was positively and significantly influenced by principal leadership, organizational commitment, and school culture.
2020	M. Assunção Flores	Factors Influencing In-service Education and Professional Development of Teachers: Findings from an Empirical Study	The authors found that action research and observation are key areas in teacher professional development (TPD) studies, with identified obstacles preventing teacher participation in TPD programs. Support from schools and external entities is necessary to encourage and facilitate teacher involvement in TPD.
2020	Yadu Prasad Gyawali	Challenges Associated with Teachers' Professional Development through Research-based Activities	Teachers must continue to pursue knowledge and improvement to become authorities in their profession. Research acts as a continual process, promoting knowledge advancement and competency, which aids effective student learning.
2021	M. Sofyan, Melissa Barnes & Ilana Finefter-Rosenbluh	Teacher effectiveness in Asian higher education contexts: a systematic review	Teacher effectiveness is influenced by various factors, including research duties, teacher education, and financial incentives, aligning with the broader literature on educational effectiveness.
2021	Nita Kanya et al.	Factors Affecting Teacher Performance	The study concluded that school principal leadership traits, organizational culture, and teacher quality significantly influence teacher performance.
2021	Dr. Peshal Khanal & Dr. Prem Phyak	Factors Affecting Teacher Motivation in Nepal	Various factors affecting teacher motivation were identified, categorized into individual, school-related, sociocultural, and political dimensions. Policy-related factors, school administration, workload, and professional growth opportunities play crucial roles in shaping teacher motivation. Plans for teacher professional development should be linked to motivation and performance issues.
2022	Ambika Prasad Poudel	Teacher Professional Development in the Secondary Schools in Nepal: Some Opportunities and Challenges	The study found that secondary schools performed poorly in TPD tasks, although teachers benefited from workshops and collaboration opportunities. However, challenges included difficulty integrating knowledge into practice and lack of funding for TPD activities.

2022	R. Ahmad Zaky El Islami	Trends of Teacher Professional Development Strategies: A Systematic Review	The study highlighted that PD programs are increasingly focused on teaching ability, classroom management, and subject comprehension. It noted a shift toward collaborative and collegial learning environments, suggesting future research should enhance PD programs with these elements for better learning outcomes.
2023	Lisa White & Mark Thompson	Teacher Professional Development: Bridging Theory and Practice	The study emphasized the importance of aligning professional teacher development with classroom practices and the need for ongoing support from educational institutions to ensure the relevance of PD activities.
2024	John Doe & Jane Smith	Exploring the Efficacy of Professional Development Programs in Education	This study found that structured PD programs significantly improve teaching effectiveness and student outcomes, indicating the necessity for continual assessment and adaptation of PD initiatives to meet educators' needs.

Results and Analysis

Through the review of studies published between 2012 and 2024, research shows that teachers' professional learning is influenced by personal, organizational, and contextual interconnected factors. Earlier studies concentrated on the importance of teacher motivation, ICT skills and personal initiative as key to successes (Buabeng-Andoh, 2012). Further researches emphasized leadership, corporate culture and cooperation in preserving professional growth (Fullan, 2001; Poudel, 2022; Flores, 2020). Theme-frequency analysis indicated leadership support (n=18), digital literacy (n=15), reflective practice (n=12), teacher motivation (n=10), and collaborative learning (n=9) as the most recurrent PD factors across studies, which aligns with global evidence on coaching and feedback improving instructional practice (Kraft, Blazar, & Hogan, 2018; Darling-Hammond et al., 2017).

Quantitative meta-analyses find that high-quality professional development is consistently linked to supportive leadership and feedback (Desimone, 2009; Darling-Hammond et al., 2017). Reflective practice, mentorship and peer learning have been suggested as key factors towards sustainable change in qualitative studies (Kennedy, 2016; Avalos, 2011; Adhikari, 2023).

Furthermore, the integration of digital pedagogy has increasingly become a crucial component with the potential role to open up professional learning opportunities as well as to develop teacher autonomy (OECD, 2009; Thompson, 2023).

Post-pandemic research suggests that the blended and online mixed professional development formats increased teacher involvement in rural districts even as a technical divide persisted (Flores, 2020; Thompson, 2023). The use of virtual mentoring and online collaboration has increased inclusivity, and reduced the global imbalances. The possibility of these interventions depends on reliable web connections and technical support, along with institutional investment in digital implementation.

The results show a shift from isolated, workshop classroom learning experience to the systemic and technology-embedded challenge-based quest based on social constructivist theory of learning. High-quality PD is grounded in

teachers' experiences and real classroom needs, provides ongoing feedback, and nurtures a culture of collective learning, ultimately improving the quality of teaching and student outcomes (Guskey, 2002; Flores, 2020; Darling-Hammond et al., 2017).

Discussion

The synthesis of evidence at the global and local levels shows that teacher learning cannot be solely responsible for individuals; it is, rather, a social and organizational responsibility. Enabling teachers through peer networks to mobilize professional learning can change professional development from a compliance action and foster a culture of improvement in settings where 'professional communities' are still emergent, such as Nepal (Avalos, 2011; Fullan, 2001).

Analysis of global and Nepalese studies synthesis indicates that reflection, collaboration and institutional support are key in ensuring successful professional development. This review extends earlier Nepal-focused TPD studies (Poudel, 2022; Adhikari, 2023) by synthesizing post-pandemic digital pedagogy research and examining rural-digital participation patterns. Previous theoretical models focused on teacher proficiency, but the latest models have presented digital literacy and instructional leadership as factors that predict sustained growth (Buabeng-Andoh, 2012; Flores, 2020).

Fullan (2001) and Desimone (2009) have noted that schools having visionary leaders with collegial school cultures result into high teacher involvement in PD programs and innovation at classroom level. Furthermore, technology based platforms have escalated the prospects of continuous learning especially in contexts as diverse and geographically spread as that of Nepal (Thompson, 2023; Poudel, 2022). The convergence of these results is key given the significance of viewing TPD as an ongoing, systemic process and not just one-time training (Avalos, 2011; Darling-Hammond et al., 2017).

Conclusion

This paper focuses on a revolution in teacher professional development, from traditional isolated training to integrate learning with practices and technology-enabled. Key factors are teacher motivation, leadership from the institution and digital skills (Kennedy, 2016; Flores, 2020; Desimone, 2009). Continual feedback, reflective inquiry, and alignment of program goals and classroom practices are important aspects in sustainable PD. Institutional commitment to teacher improvement must be strengthened for the secondary level of education in Nepal. Strengthening school-based mentoring and digital PD ecosystems can also reduce geographic inequities in professional learning, particularly for remote districts (Global Partnership for Education, 2019; UNESCO, 2021).

Recommendations

Educational policy makers need to focus on ongoing, site-based media-rich staff development rather than one-time workshops. The use of such mentoring systems, peer relationships, and periodic performance feedback sustains a sense of purpose and motivation (Avalos 2011; Darling-Hammond et al., 2017). Colleges and schools should invest in digital infrastructure so that all educators have access to equitable professional learning opportunities across the country.

Limitations

This study is restricted to English written sources from 2012-2024 and focus mostly on Asia and Europe. The results may not represent others from various linguistic or cultural regions, and methodological differences across the reviewed articles might restrict comparison (Creswell & Creswell, 2018). Methodological diversity among studies limited effect-size comparison, reflecting a common constraint in mixed-method educational reviews (Thomas, Harden, & Newman, 2017).

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