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Professional Development Needs Assessment of Secondary School Teachers in Bhutan: An Explanatory Study

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Abstract

Professional development (PD) has been identified as a key strategy in enhancing teachers' personal and professional growth, but we know less about how PD is perceived by teachers. The purpose of this study was to gain more insight into secondary school teachers' PD needs and how they find it beneficial. This study draws on data generated through surveys with 260 teachers and individual interviews with 10 teachers representing ten secondary schools, teaching grades 8–12 in Bhutan. Utilising both descriptive and inferential statistics alongside thematic analysis, the study revealed that PD is important for their professional growth. The analysis indicated that gender did not significantly influence perceptions of PD benefits and barriers, and neither qualification nor teaching experience were significant predictors of PD areas. Qualitative findings emphasised the need for continuous, collaborative, and personalised PD programmes tailored to individual needs, supported by practical, interactive learning opportunities and ongoing implementation strategies. However, a limitation of the study is the inability to reach the targeted sample size. Future research should incorporate a larger sample to provide a more comprehensive understanding of PD needs and their impacts. The study highlights the importance of investing in high-quality, tailored PD programmes to enhance teacher effectiveness and improve student outcomes.

Keywords: Professional development, secondary school teachers, professional development areas, benefits of professional development, challenges of professional development

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Introduction

Teaching is a dynamic profession that must evolve with the demands of the current era (Yenen & Yontem, 2020). Given the ongoing education reforms, providing relevant and efficient professional development (PD) opportunities is crucial in Bhutan. The recognition that teachers are at the heart of educational reforms led policy makers and national standards to demand high-quality professional development (PD) opportunities for teachers (Zhang et al., 2015). The teacher professional support division (TPSD) under Bhutan's Ministry of Education and Skills Development aims to ensure that teachers possess required knowledge, skills and aptitude. It also aims to promote continuous learning of teaching professionals by ensuring access and equity to professional development opportunities for all teaching professionals (Ministry of Education [MoE], 2014). However, it has been reported that teachers rarely receive adequate professional development, and when they do, it is often a one-time event and lacks quality. In addition, studies exploring teachers' actual PD needs, relevance, their involvement in PD design and its effectiveness in the field are limited. Moreover, there is a lack of understanding about what teachers needs are for improvement in the context of educational reforms and curricular changes. El-Deghaidy et al. (2015) (as cited in Murphy & Paor, 2017) emphasise that PD should align with teachers' needs to attract participation. Similarly, Luneta (2012) reports that a good PD programme must be designed based on the needs-analysis obtained from the teachers as overlooking teachers' needs can prove costly and damaging, undermining the PD quality. Thus, analysing teachers' PD needs and involving them in PD programme planning are inevitable for achieving efficient educational equity and equality.

The findings of the current study might inform the key institutions such as MoESD, RUB and others to initiate PD programmes that are relevant for teachers. The study will inform MoESD for more inclusive and participatory policy reforms on PD, including teachers' active participation and involvement in the whole process of initiating PD. The study may reinforce MoESD to enhance the management system in resource mobilisation and identify relevant and qualified resource persons for providing adequate and quality PD. Furthermore, the study may inform and prepare RUB and the two colleges of education to rethink, reorient and develop better strategies in training teachers. Lastly, it will help colleges of education to contextualise and organise pertinent and effective PD programmes for the school teachers.

Primary Question: What are the key professional development needs of secondary school teachers in Bhutan?

The primary question is guided by the following sub questions.

1. What is the current understanding of secondary school teachers regarding PD?
2. What are the major PD needs among secondary school teachers?
3. What are the challenges associated with current PD programmes?

4. How prepared are the school teachers to implement PD knowledge, skills and values in their teaching-learning?
5. What are the strategies to make PD more effective?

Literature Review

Professional Development and its Significance

Professional development (PD) encompasses both natural learning experiences and intentional, planned activities aimed at benefiting individuals, groups, or schools, ultimately enhancing the quality of education in the classroom (Murphy & de Paor, 2017). It is commonly understood as a structured programme where teachers acquire knowledge and skills to improve classroom practices (Toreff et al., 2005), and as initiatives designed to enhance teachers' professional knowledge (Buczynski & Hansen, 2007; Torff & Sessions, 2008). Moreover, PD is seen as a process that focuses on increasing teacher learning and modifying classroom practices to boost student outcomes (Coldwell, 2017; Fischer et al., 2018).

Given the central role teachers play in determining the quality of education worldwide, there is widespread agreement that they are key to successful educational reforms (Zhang et al., 2015). In Bhutan, considering the current education reform process, efforts to enhance teachers' knowledge, skills and value have become critical. Lotter et al. (2006, as cited in Luneta, 2012) emphasise that, for optimal teaching and learning outcomes, teachers must engage in PD programmes that are tailored to the specific knowledge bases of their contexts. For PD programmes to be truly effective, they must deeply influence and align with these knowledge bases (Luneta, 2012).

Understanding Teachers PD needs and Participation

While we recognise the significance of PD for teachers, it is equally important to make teachers part of the whole PD process rather than making them a passive receiver. Studies argue that coordination and collaboration allow intervening in an informed way, using available resources in an effective way, avoiding replication of programmes, and reaching out to teachers who really need a particular type of support (Gjedia & Gardinier, 2018; Jackson & Cobb, 2013) as (cited in Nawab & Sharar, 2022). Luneta (2012) indicates that one of the primary causes of unsuccessful professional development programmes for teachers is the lack of a comprehensive needs-assessment. Therefore, understanding teachers' PD needs and participation is fundamental for successful PD. For instance, the review conducted by Luneta (2012) reveals that the lack of PD needs assessment can lead to consequences such as; One size fits all approach, lack of relationship between PD and practice, top down from district officials and passive PD experiences for teachers. It is important that the relevant stakeholders, specifically teachers participate in designing and implementing PD programmes. Coordination has been considered as one of the significant factors in making any PD programme effective for teachers (Nawab & Sharar, 2022). Kabilan and Veratharaju (2013) (as cited in Yenen & Yontem, 2020) report that to create effective PD,

professional developments should be based on the current instructional practices and actual needs of teachers, which is also supported by the other literature. For example, studies consistently suggest that teachers' professional growth is viable through effective and continuous PD programmes which address teachers' needs (Kennedy & McKay 2011; Zein, 2016). Additionally, Nawab et al. (2021) affirm that educators and researchers should prioritise addressing the specific needs of teachers within their unique contexts, instead of focusing on predefined models.

Several studies argue that PD is more likely to improve pupil attainment if it is sustained, collaborative, has teacher buy-in, is subject specific, draws on external expertise, and is practice based (Desimone, 2009; Timperley et al., 2007; Walter & Briggs, 2012; Wei et al., 2009). A recent review by Sims and Fletcher-Wood (2021) argues that much of the research supporting claims such as collaboration, sustainability, and subject-specific PD lacks robust evidence due to flawed inclusion criteria and inference methods. They suggest that repeated practice, rather than the duration of sustained PD, is a more critical factor in improving teaching outcomes. Additionally, the authors caution against the over-reliance on meta-reviews, emphasising the risk of propagating weakly supported findings into policy and practice without thoroughly examining the underlying primary research. While many studies emphasise collaboration in PD, Sancar et al. (2021) highlight the need for cooperation between institutions and organisations, advocating for collective action from all stakeholders to prevent the wastage of time, effort, and resources.

Areas of Teachers' PD Requirement

Teachers' professional development (PD) needs are diverse and influenced by the subjects they teach, personal interests, levels of qualification, and experience. The complexities of the teaching profession, driven by developments in various life areas, necessitate that teacher become better equipped, making their roles increasingly complex and challenging (Yenen & Yontem, 2020). Yenen and Yontem (2020) categorise PD needs into four dimensions: Instructional Development (enhancing learning, teaching, and student assessment), Scientific-Field Development (research and innovation), Personal Development (interpersonal communication skills, life skills, and soft skills), and Organisational Development (institutional leadership and management).

Murphy and de Paor (2017) conducted a needs analysis study using an online survey with 591 education professionals in the Republic of Ireland. They identified several key areas of Continuing Professional Development (CPD) prioritised by teachers in both primary and post-primary settings. For instance, teachers highlighted the importance of pedagogical content knowledge, technology, and assessment. Specifically, secondary school teachers prioritised assessment, differentiation, and technology, while primary school teachers emphasised the need for CPD in school and curriculum leadership. Similarly, previous studies by Copland et al. (2014) and Zein (2017) have reported a strong demand for PD focused on classroom management.

Moreover, Hiebert and Morris (2012) emphasised the importance of PD that fosters teacher collaboration, as such initiatives can lead to significant improvements in teaching and learning. Other studies have also highlighted various PD needs. For example, Yohon (2005), in a survey

study, identified assessment tools, student motivation, curriculum development, lesson planning, and standards documentation as crucial PD areas. Daresh (2003) underscored the need for PD for novice teachers, particularly in areas such as lesson planning, classroom management, and understanding district policies. Additionally, Witte and Jansen (2016) suggested that developing leadership skills among teachers and the broader school community is a critical area for PD. Addressing these diverse PD needs is essential, as Meissel et al. (2016) noted that teachers learn most effectively when their professional development needs are taken into account.

Studies have highlighted the qualities that make professional development (PD) effective. For instance, Darling-Hammond et al. (2017) identified seven key features of effective teacher PD: a focus on content, the incorporation of active learning, support for collaboration, use of models of effective practice, provision of coaching and expert support, opportunities for feedback and reflection, and sustained duration.

However, some studies have found no significant differences in PD needs across different experience levels. For example, Karlberg and Bezzina (2022) found that teachers, regardless of age or experience, consistently identified special education, technology-enhanced learning, teaching migrant children, and managing behavioural concerns as the top areas where they need training and support. The study also indicated moderate to high levels of PD needs in areas such as special education, classroom technology integration, behavioural management, and conflict resolution. Similarly, a mixed methods study by O'Sullivan et al. (2011) exploring Irish teachers' perceptions, experiences, and motivations regarding continuous PD found no significant differences in the impact of PD on teaching practice based on factors such as country, age group, gender, job security, school type, or highest qualification.

In summary, this implies that effective PD programmes must be comprehensive and tailored to meet the varied needs of teachers, addressing specific subject areas, incorporating active learning, and providing continuous support. Such tailored and well-structured PD programmes are crucial for enhancing teacher effectiveness and improving student outcomes.

Benefits of Professional Development

Research has demonstrated numerous benefits of participating in professional development (PD). For instance, Poskitt (2005) emphasised that engaging in PD significantly enhances teachers' ability to acquire and develop essential knowledge and skills. Desimone (2009) further noted that one of the key positive impacts of PD is its ability to empower teachers to implement meaningful changes in their teaching practices.

Moreover, various empirical studies, such as those by Hiebert and Morris (2012), have shown that PD fostering teacher collaboration can lead to significant improvements in teaching and learning. Similarly, O'Sullivan et al. (2011) indicated that PD which provided opportunities for reflection had the most impact on their practice. Bolam (2008) highlighted the benefits of PD in enhancing leadership behaviour, enabling teachers to educate students more effectively and strike a desirable balance between individual, school, and national needs. Additionally, other

studies have pointed out that the long-term benefits of PD include boosting teachers' confidence in their professional practice (Buczynski & Hansen, 2010; Harris et al., 2012).

Studies have shown that PD that supports collaborative learning has not only enhanced teachers' classroom practice but has also led to improved teacher-student interactions and enhanced student achievement (Allen et al., 2011; Landry et al., 2009).

In conclusion, PD offers substantial benefits across multiple dimensions of teaching and learning. It not only enhances teachers' knowledge and skills but also empowers them to implement meaningful changes in their teaching learning practices.

Challenges of Professional Development

Teacher change or development is not considered as linear change but it is a more interconnected model of teacher development (Butler & Leahy, 2003) as (cited in Signh, 2021). Numerous teachers' professional development programmes have operated on the hierarchical model of expertise and a transmission model of teaching; that is, one goes to experts and "receives" professional knowledge from them (Park & So, 2014). Professional development (PD) has long been seen as the mechanism to enhance teachers' abilities to perform professionally and personally. Yet, approaches to teacher PD often fall far short of providing teachers with the learning they need at different points in their professional careers to improve practice and student learning (Fairman, 2020). Providing PD programmes which are relevant, efficient, timely, and sustainable has always been a challenge as studied in different countries. A study conducted by Tshomo (2021) highlights key recommendations: the need to develop a policy and system of mandating teachers to implement knowledges and skills gained from PD and school leaders support in implementation and follow-up. The author cities that the most challenging factor in implementing the PD programme is the teachers' resistance to change. This clearly indicates that one of the key challenges of conducting PDs for teachers in Bhutan is lack of follow-up and evaluation. Other factors include relevance and teachers' choice of PD. For instance, Pullen (2021) states that designing PD that meets every teacher's professional learning needs is a significant challenge for education authorities. She further argues that PD may be too general or too specific for different teachers, too basic or too advanced, or aimed at certain grade levels and neglect others. The other factors include training duration, timing of the PD and the cost as reported in the study conducted in Indonesia by Apriliyanti (2020). Further, factors such as motivational level of teachers to participate and to implement PDs are crucial factors to be considered as PD approaches are more associated with clinical in nature (Signh & Gupta, 2021). Nabhani et al. (2014) highlighted some of the obstacles to PD included lack of time and funding for the workshops and teachers' attitude toward growth and renewal. Considering multiple factors challenging the effectiveness or the success of PD programmes, there is a need to identify key perennial factors concerning PD programmes. Sims et al. (2023) in their Meta-Analytic Test study recommends four factors (IMTP) to be considered for efficient PD programmes. These includes; 1) providing insight (I) about teaching and learning, 2) PD should motivate (M) teachers to make changes to

their practice, 3) PD should provide techniques (T) for putting these insights to work and 4) PD must embed that change in practice (P).

In conclusion, the above literature on PD highlights the need for identifying the key professional development needs of secondary school teachers. The literature also reports that effective PD must be context-specific, teacher-centred, and responsive to the diverse needs of teachers.

In Bhutan, ongoing education reform makes it crucial for PD programmes to not only enhance teachers' knowledge and skills but also address their specific challenges and contexts. The overall aims of this study are to identify the critical areas for PD that are essential for improving instructional practices and classroom management, much like the studies that emphasise the importance of tailored and sustained PD initiatives (Murphy & de Paor, 2017; Yenen & Yontem, 2020).

Methodology

The study adopted pragmatism as the research paradigm as it offers multiple approaches to understand and analyse the problem. The pragmatist paradigm allowed the current study to gather and validate the data on secondary school teachers' PD needs and their general perceptions on the PD, thereby allowing the researcher to consolidate the actual perception and PD needs in the current situation. Guided by the pragmatist paradigm, the study adopted an explanatory sequential mixed methods approach capitalising on the strengths of both quantitative and qualitative methods as combining them will provide a better understanding of the research problem and question than either method by itself (Creswell, 2015). The pragmatists believe in using procedures that are effective for specific research problems (Creswell, 2018).

An explanatory sequential mixed methods design consists of first collecting quantitative data and then collecting qualitative data to help explain or elaborate on the quantitative results or vice versa (Creswell and Creswell, 2012). In the current study, former approach was considered. Therefore, in the initial phase, the study gathered secondary school teachers' perception on PD using online survey questionnaires. The quantitative data was then used as a basis for qualitative data collection. A semi-structured interview with selected school teachers was conducted to later consolidate the overall understanding of the research problem. The data were triangulated through the inter-consolidation of both quantitative and qualitative data.

Data Collection Procedures

The pragmatist research paradigm informed the mixed method, using quantitative and qualitative data collection methods and tools. For gathering quantitative data from the school teachers, a survey questionnaire was used. The survey questionnaires were administered online through teachers group emails and telegrams. The survey questionnaire consisted of demographic details followed by four-point Likert scale items to gather the secondary school teachers current understanding of professional development programmes (categories labelled from 1 to 4 such as

Strongly Disagree =1, Disagree =2, Agree =3, and Strongly Agree =4). Further, the study used a rating scale tool with another set of labels which consisted of 1=Not Important, 2=Slightly Important, 3=Moderately Important, 4=Important, 5=Extremely Important) to evaluate the PD needs and priority of teachers under different themes. The survey questionnaire was pilot tested with 20 MEd students who are in-service teachers pursuing their masters at the time of the study. As shown in Table 1, the Cronbach Alpha coefficient value of 55 items is .93, demonstrating a high internal consistency and reliability.

Table 1
Reliability Statistics

Cronbach's Alpha	N of items
.93	55

For collecting qualitative data, semi-structured interviews were conducted. The credibility of the interview questions was tested by conducting a pilot-testing with tutors in the college. Further, to improve the semi-structured interview questions, the feedback and experts' views were solicited from the experienced researchers of the college.

Sampling Method

The population for the study were the secondary school teachers of Bhutan. The study adopted a cluster sampling method (probability sampling). Cluster sampling is based on the ability of the researcher to divide the sampling population into groups (based upon visible or easily identifiable characteristics), called clusters, and then to select elements within each cluster (Kumar, 2011). For the survey, a total of 1000 secondary school teachers were considered as the study's sample. However, due to teachers' busy schedules, the study could only obtain 260 respondents, which might have affected the representation of participants from different schools and districts. For the qualitative data, a total of 12 participants (6 female & 6 male) were selected for semi-structured interview. The duration of the interview lasted between 15-20 minutes for each participant. The study ensured balanced representation of interviewees in terms of qualification, teaching experience, age and the location of schools. The interviews were conducted face-to-face as well as online.

Data Analysis Procedures

The quantitative data gathered was interpreted for both descriptive (mean, standard deviation) and inferential statistical analysis. The semi-structured interview data was analysed using qualitative data analysis and interpretation procedure of Creswell (2018). Data gathered from the semi-structured interviews were transcribed, coded and categorised into predetermined themes such as; 1) General perception on PD programme, 2) Perception of Benefits of PD, 3) Perception of barriers

to PD, 4) Perception on essential components of PD, and 5). Perceptions on strategies for effective PD programmes. The key themes will then be interpreted for the result and discussion.

As for the ethical considerations**,** written and formal consent from all the research participants were sought. They were informed in detail on the purpose, significance and scope of the research through formal application and survey introduction respectively. In addition, ethical clearance from the office of Dean of Research and Industrial Linkages (DRIL) was sought. To maintain confidentiality of the respondents, pseudonyms were used for both the survey and interview data.

Results and Discussion

This section presents the results of the quantitative data, supported by qualitative data. Descriptive and inferential statistical analyses were conducted for the quantitative data, while qualitative data was interpreted based on the quantitative survey themes. The results were then discussed in the context of relevant literature. Firstly, the demographic data are presented, followed by the descriptive results.

As shown in Tables 2 and 3, out of 260 participants, 171 were male and 89 were female, with teaching experience ranging from 0 to 35 years. Similarly, Tables 4, 5, and 6 present the participants' qualifications, number of PD attended and Types of PD attended.

Table 2

Participants' Gender

		Frequency	Percent
Valid	Male	171	65.8
	Female	89	34.2
	Total	260	100.0

Table 3

Participants' Teaching Experience

		Frequency	Percent
Valid	0-5	51	19.6
	6-10	56	21.5
	11-15	67	25.8
	16-20	50	19.2
	21-25	22	8.5
	26-30	11	4.2
	31-35	3	1.2
	Total	260	100.0

Table 4
Participants' Qualification

		Frequency	Percent
Valid	PTC	9	3.5
	BEd	92	35.4
	PgDE	49	18.8
	Master	109	41.9
	PhD	1	.4
	Total	260	100.0

Table 5
Total Number of Professional Development (PD) Attended

		Frequency	Percent
Valid	0	9	3.5
	1-10	73	28.1
	11-20	39	15.0
	21-30	28	10.8
	31-40	25	9.6
	41-50	19	7.3
	51-60	11	4.2
	61-70	7	2.7
	71-80	5	1.9
	81-90	3	1.2
	91-100	16	6.2
	12.0	1	.4
	15.0	6	2.3
	18.0	4	1.5
	20.0	9	3.5
	30.0	2	.8
	40.0	1	.4
	70.0	1	.4
	109.0	1	.4
	Total	260	100.0

Table 6
Types of PD Attended

		Frequency	Percent
Valid	Instructional Development	159	61.2

Personal Development	65	25.0
Leadership and Management	11	4.2
Research and Scientific Development	25	9.6
Total	260	100.0

Table 7

Results of Normality Tests for Continuous Data

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Perceived benefit of PD	.131	260	.000	.913	260	.000
PD Barriers	.096	260	.000	.951	260	.000
Essential Components of PD	.113	260	.000	.935	260	.000
PD Strategies	.210	260	.000	.824	260	.000
PD Areas	.110	260	.000	.932	260	.000
Instruction Development Dimension	.092	260	.000	.972	260	.000
Scientific Field Development Dimension	.157	260	.000	.885	260	.000
Personal Development Dimension	.153	260	.000	.882	260	.000
Organisation Development Dimension	.163	260	.000	.879	260	.000

a. Lilliefors Significance Correction

Conducting a normality test is crucial for inferential analysis, as it helps determine the appropriate statistical tests for the data. Table 6 shows the results of the Kolmogorov-Smirnov and Shapiro-Wilk tests for normality for various variables related to professional development. The significant p-values (all < .05) suggest that the data for these variables deviate from a normal distribution. However, due to the large sample size, parametric tests are still considered appropriate based on the Central Limit Theorem (Moore et al., 2012).

Results from Descriptive Analysis

Table 8

Teachers' General Perception to Professional Development

	N	Mean	Std. Deviation
1. General Perceptions to PD	260	3.22	.44
2. Perceived benefit of PD	260	3.26	.65
3. Barriers of PD	260	3.23	.52
4. Essential Components of PD	260	3.23	.54
5. PD Strategies	260	3.56	.49
Valid N (listwise)	260	3.3	.53

As shown in Table 8, the average mean scores for the themes under teachers' general perception of professional development (PD) fall between "agree" and "strongly agree," with an overall mean and standard deviation of (M=3.3, SD=0.53). The subcategories are as follows: 1). *Teachers' General Perceptions of Professional Development (PD)*: (M=3.22, SD=0.44); 2). *Perceived Benefits of PD*: (M=3.26, SD=0.65); 3). *Barriers to PD*: (M=3.23, SD=0.52); 4). *Essential Components of PD*: (M=3.23, SD=0.54); and 5). *PD Strategies*: (M=3.56, SD=0.49).

Recognising the Bhutan Professional Standard of Teachers (BPST) *standard 6: Personal Growth and Professional Development* (Ministry of Education [MoE], 2020), the data from both survey and interview revealed teacher's acknowledgement for the increasing need for continuous growth and development within the profession. These descriptive results suggest that teachers perceive PD (M=3.22, SD=0.44) as beneficial for their growth and enhancement of teaching, learning, and assessment practices. While the Ministry of Education's initiatives are acknowledged, teachers emphasise the need for PD assessments that cater to their actual needs and call for more opportunities for PD attainment. It also identifies several benefits of PD, including (Skill enhancement, Improved social skills, Increased confidence, better school functioning, Greater motivation for teaching, and Overall job satisfaction (M=3.26, SD=0.65).

Interview data further highlights the importance of high-quality PD for enhancing teacher effectiveness and improving student outcomes. For instance, P1 views PD as essential for continuously developing knowledge, skills, and attitudes, helping teachers stay current with trends and best practices. Most teachers stress the need for schools to invest in PD programmes that promote continuous growth and learning, benefiting the entire education community. Such programmes should foster collaboration, experience sharing, and practical strategies that directly enhance teaching skills. Additionally, teachers see PD as crucial for career growth and lifelong learning, highlighting the need for continuous learning to keep up with evolving educational trends and practices. These findings are similar to that of Allen et al. (2011) and Landry et al. (2009).

However, teachers also noted significant barriers such as inadequate resources, lack of a shared vision, time constraints, misalignment between state and school policies, dysfunctional school culture, and difficulties in tracking and assessing the quality of PD (M=3.23, SD=0.52). These descriptive results were further elaborated by interview data, which highlighted significant challenges in PD programmes, including a lack of opportunities, follow-up support, and implementation strategies. Teachers emphasised that without ongoing guidance, it is difficult to effectively apply new learnings in the classroom. For example, T2 mentioned that while attending a PD on transformative pedagogy was beneficial, the heavy syllabus, especially in higher classes, prevented the application of acquired skills in real classroom situations. T2 specifically noted that incorporating Kagan cooperative structures in the classroom is time-consuming. Similarly, PI expressed, "I find it challenging to balance ongoing education with my work and personal responsibilities. In addition, not all of us have equal access to quality professional development resources."

T3 pointed out challenges such as irrelevant and unimportant topics, a lack of practical

application, and the short duration of PD sessions. For T3 and T4, the content of these PD programme often does not align with the specific needs and goals of their teaching practice, making it difficult to see their relevance and value. Teachers also felt that the sessions tend to focus too much on theory without offering practical strategies that can be immediately implemented in the classroom. This disconnects between theory and practice reduces the effectiveness of the training. For example, T6 reported, "We do need learning by doing and professional skills. Though our curriculum demands more of learning by doing, there is a lack of experts and various resources to ignite the skills."

Additionally, the short duration of many PD programmes does not provide enough time to fully explore the topics or develop a deep understanding, limiting the opportunity for meaningful learning and skill development. Moreover, the scarcity of resources, particularly inadequate funding, poses a critical problem for schools in executing comprehensive PD programmes. On this note, T6 expressed, "The unavailability of the resources leads to the natural death of the skills." Furthermore, the complexity of planning and resistance to change are often challenges that schools face with regard to PD. In line with this, T6 noted, "We are usually bound by certain routines, and it is really hard for us to get out of that familiar zone."

Descriptive results of the theme Essential components of PD (M=3.23, SD=0.54) revealed that PD should be content-focused, incorporate active learning aligned with adult learning theory, be job-embedded, and include modelling of effective teaching practices. Supporting this, the Data from the interview reported that effective future PD programmes should include needs assessments, ongoing support, a mix of online and in-person training, differentiated learning paths, and clear evaluation metrics. For example, T3 suggested that professional development (PD) programmes should be conducted according to pre-conducted needs assessments. Each PD session should prioritise practical applicability, ensuring that the knowledge and skills gained can be directly implemented in teachers' daily practice. Flexibility should be offered in attendance options, allowing teachers to choose between face-to-face and online sessions based on their preferences and schedules.

Suggested strategies (M=3.56, SD=0.49) to enhance PD effectiveness, as indicated by the descriptive results, include follow-up studies and making PD more inclusive, interactive, and tailored to individual needs and preferences. In this line, studies have reported that teachers' professional growth is viable through effective and continuous PD programmes which address teachers' needs within their unique context (Desimone, 2009; Kennedy & McKay 2011; Nawab et al, 2021; Walter & Briggs, 2012; Zein, 2016). The interview data further supports these findings, emphasising the importance of implementing monitoring and evaluation mechanisms to assess PD effectiveness. The respondents from the interview stated the crucial need to establish a uniform information management system for teachers' professional development programmes which can store and update data and information related to PD including teachers' reflections and feedback. Regular evaluations help in understanding the impact of training on teachers' performance and student outcomes. For instance, T5 articulated that gathering feedback and analysing results allow for adjustments to future PD offerings, ensuring continuous improvement and alignment with

teachers' evolving needs. Further, the teacher's active involvement in conducting PD and development process was found to be a crucial factor in making PD programmes more contextual and empowering. The focus area on professional development goals within the Standard 6: Personal Growth and Professional Development (BPST, 2020) clearly states the need to lead reforms in enhancing professional development programmes based on an in-depth knowledge and understanding as a highest performance level within the standard. This calls for involving teachers in developing and conducting PD programmes rather than being at receiving end every time. For instance, T8 stated that some of the PD contents are difficult to relate with actual field needs since the PD resource persons come from different background and context. These recommendations, if implemented, can create more personalised, practical, and impactful professional development experiences.

Table 9

Professional Development Areas

Theme	N	Mean	Std. Deviation
1.Instruction Development Dimension	260	4.08	.76
2. Scientific Field Development Dimension	260	4.31	.69
3. Personal Development Dimension	260	4.24	.75
4.Organisational Development Dimension	260	4.19	.79
Valid (listwise)	260	4.21	.75

Table 9 presents the mean and standard deviation for various themes within professional development areas, with an overall average mean of 4.21 and a standard deviation of 0.75. This indicates that teachers regard the identified PD areas as extremely important.

Theme 1: Instruction Development Dimension

Teachers place high value on training in areas such as teaching methods, lesson plan preparation, instructional material design, classroom management, special needs student assessment, formative assessment, test item preparation, and the use of ICT tools in teaching and assessment (M=4.08, SD=0.76). These findings align with those of Karlberg and Bezzina (2022), who also reported a moderate to high demand for additional support in special education to effectively assist students with specific learning difficulties. The need for guidance on integrating technology into the classroom and managing behavioural issues was also highlighted.

Similarly, the majority of interview respondents identified instructional development as a critical area for professional growth. For example, T1, T7, and T9 specifically mentioned the need for training in new teaching methodologies, technology integration, classroom management,

assessment strategies, and social-emotional learning. Teachers stressed the importance of professional development in evidence-based pedagogies, educational theories, and technological proficiency to meet the demands of modern education (P1). The results of this study are consistent with the findings of Murphy and de Paor (2017), who found that teachers in both primary and post-primary settings prioritised professional development in pedagogical content knowledge, technology, and assessment. Secondary teachers, in particular, emphasized the importance of assessment, differentiation, and technology.

Theme 2: Scientific Field Development Dimension

From the data (Table 9), scientific field development dimension scored the highest mean and lowest SD indicating highest level of agreement and consistency among the survey respondents. Areas such as general ICT knowledge, research methods, action research, data and information management, academic writing, and STEM are considered crucial by teachers, demonstrating a high consistency in their responses (M=4.31, SD=0.69). T3 and T4 specifically pointed out the necessity of ICT-based training, focusing on integrating technology and online tools into teaching and learning. A majority of interview respondents pointed out the importance of PD in educational research. T3, T8 and T9 mentioned that with the growing importance of research in education, PD on action research methods, tools, skills and report writing are increasingly sought by the teachers even though currently, only a small number of teachers engage in this practice. Respondents reported that over the few years, teachers have increasingly recognised the significance of research knowledge and skills for both personal and professional growth and development.

Theme 3: Personal Development Dimension

Key areas such as time and stress management, career planning, interpersonal communication skills, traditional Bhutanese etiquette, and specific content knowledge are considered highly important by teachers, with minimal variation in responses (M=4.24, SD=0.75). Teachers also emphasised the need for professional development (PD) that focuses on social and emotional learning (SEL) and building teacher resilience. T3 pointed out that PD should be tailored to individual strengths, weaknesses, and interests to make it more relevant and impactful. Similarly, T6 underscored the importance of PD in managing student distractions, raising awareness about AI, and enhancing cybersecurity. The importance of PD related to classroom management has also been highlighted in previous studies, which suggest that these areas should be integrated into teacher training programs (Copland et al., 2014; Zein, 2017).

Theme 4: Organisational Development Dimension

Teachers consider leadership and management skills, organisational development and change, providing constructive feedback, and counselling knowledge and skills as essential areas for

professional development (M=4.19, SD=0.79). These findings align with Karlberg and Bezzina (2022), who reported a moderate need for PD in conflict resolution.

The interview findings emphasise the importance of leadership training, effective management skills, and collaboration in professional development (PD), as highlighted by T2, T3, and T4. Their focus on interactive sessions and experience sharing aligns with literature indicating that collaborative PD can enhance teaching and learning outcomes (Hiebert & Morris, 2012; Nawab & Sharar, 2022), suggesting a supportive environment among educators is crucial for improvement.

However, these findings should be evaluated alongside critiques from Sims and Fletcher-Wood (2021), who argue that the evidence supporting collaboration in effective PD often lacks robustness due to flawed methodologies. They suggest that repeated practice may be more critical than the duration of sustained PD, challenging traditional views on PD effectiveness.

Sancar et al. (2021) add that cooperation between institutions and organisations is essential, advocating for collective action among all stakeholders to ensure efficient resource use in PD initiatives. In summary, while the interview data highlights collaboration and interactive learning, it is vital to consider these findings in light of existing literature questioning their evidential support. A balanced perspective that includes repeated practice and institutional cooperation may better inform our understanding of effective PD. However, the high mean scores across all themes reflect teachers' strong recognition of the importance of various professional development areas to enhance their teaching effectiveness and overall professional growth while also suggests that teachers perceive PD as beneficial for their growth and enhances their teaching, learning, and assessment practices. The opportunities offered by the Ministry of Education and Skills Development initiatives are acknowledged.

Independent t-Test Analysis for Gender Differences in Perceived Benefits and Barriers of Professional Development"

Table 10.

Group Statistics for Perceived Benefits of Professional Development (PD) by Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Perceived benefit of PD	Male	171	3.25	.64	.04837
	Female	89	3.27	.66	.06979

Table 11.

Independent Samples Test for Perceived Benefits of Professional Development (PD) by Gender

	Levene's Test for Equality	t-test for Equality of Means	95% Confidence

		of Variances							Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Perceived Benefits of PD	Equal variances assumed	.201	.655	-.229	258	.82	-.01923	.08384	-.18433	.14587
	Equal variances not assumed			-.227	172.272	.83	-.01923	.08491	-.18683	.14837

As depicted in Tables 10 and 11, an independent-samples t-test was conducted to compare the perceived benefits of professional development (PD) for males and females. There was no significant difference in scores for males (M=3.25, SD=0.64) and females (M=3.27, SD=0.66); t(258)=-0.229, p=0.819. The magnitude of the difference in the means was very small, with a mean difference of -0.01923 and a 95% confidence interval ranging from -0.18433 to 0.14587. Given the p-value is well above 0.05, we conclude that there is no statistically significant difference in perceived benefits of PD between males and females. One possible reason for the lack of statistical difference is that both male and female teachers equally consider PD to be beneficial and useful. Thus, the secondary school teachers training institute can plan PD programmes without needing to differentiate based on gender. Such findings are also reported in a mixed methods study by O'Sullivan et al. (2011) which found no significant differences in the impact of PD on teaching practice based on factors such as country, age group, gender, job security, school type, or highest qualification.

Table 12:
Group Statistics for Barriers of Professional Development (PD) by Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
PD Barriers	Male	171	3.25	.50	.03821
	Female	89	3.28	.55	.05761

Table 13.
Independent Samples Test for Barriers of Professional Development (PD) by Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means				95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Perceived Benefits of PD	Equal variances assumed	.480	.489	-.541	258	.589	-.03641	.06732	-.16899	.09616
	Equal variances not assumed			-.527	165.845	.599	-.03641	.06913	-.17291	.10008

As illustrated in Tables 12 and 13, an independent-samples t-test was conducted to compare the barriers of professional development (PD) for males and females. There was no significant difference in scores for males (M=3.25, SD=0.49) and females (M=3.28, SD=0.55); t(258)=-0.541, p=0.58. The mean difference was -0.03641 with a 95% confidence interval ranging from -0.16899 to 0.09616. The results indicate that the difference in perceived barriers to PD between males and females is not statistically significant, given the p-value is well above 0.05. Thus, gender does not appear to be a significant factor in the perception of PD barriers. Therefore, the college of education must take note of these challenges, as both male and female teachers perceive similar challenges regarding PD.

Regression Analysis of PD Needs

Table 14.
Model Summary for Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.092[a]	.008	.005	.75225	1.832

Table 15
ANOVA[a] for the Influence of Qualification on Professional Development Areas

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.244	1	1.244	2.198	.139[b]
	Residual	145.998	258	.566		
	Total	147.241	259			

a. Dependent Variable: PD Areas (Instructional Development Dimension)
b. Predictors: (Constant), iv) Qualification

The present study indicated no statistical significance between qualification to PD area (Instruction Development Dimension). For example, the regression equation was not significant, with $F(1,258)=2.198$, $p>0.05$, with an R^2 of 0.008, revealing that only 0.8% of the variation in professional development areas is determined by qualification, suggesting that qualification is not a significant predictor of professional development areas (see Table 14 and 15).

Table 16.
Model Summary for Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.022[a]	.000	-.003	.75527	1.835

a. Predictors: (Constant), iii) Teaching Experience
b. Dependent Variable: PD Areas

Table 17.
ANOVA[a] for the Influence of Teaching Experience on Professional Development Areas

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.069	1	.069	.122	.727[b]
	Residual	147.172	258	.570		
	Total	147.241	259			

a. Dependent Variable: PD Areas (Scientific Field Development Dimension)
b. Predictors: (Constant), iii) Teaching Experience

The present study revealed no statistical significance between teaching experience to PD area. For example, the regression equation was not significant, with $F(1,258) = .122$, $p>0.05$ with an R^2 of .000, indicating that only 0.0% of the variation in professional development areas is predicted by teaching experience (see Table 16 and 17). Similar finding was reported in a study by Karlberg and Bezzina (2022), where no statistical differences were observed in all practical areas of PD needs by years of experience. Both age cohorts identify 'special education', 'technology-enhanced

learning', 'teaching migrant children', and 'handling behaviour concerns' as the four main areas they require training/support in.

Pearson Correlation Analysis

Table 18.
Pearson Correlation Analysis of PD Attendance, Types of PD to Perceived Enhancement of Teaching Practices

		viii) Types of PD attended	vii) Total number of Professional Development (PD) attended	Perceived benefit of PD
i) Types of PD attended	Pearson Correlation	1	-.068	-.074
	Sig. (2-tailed)		.277	.231
	N	260	260	260
ii) Total number of Professional Development (PD) attended	Pearson Correlation	-.068	1	.009
	Sig. (2-tailed)	.277		.882
	N	260	260	260
Perceived benefit of PD	Pearson Correlation	-.074	.009	1
	Sig. (2-tailed)	.231	.882	
	N	260	260	260

The relationship between the number of PD attended, Types of PD to Perceived benefits of PD (Theme 2), was investigated using the Pearson correlation coefficient test. There was a very weak positive correlation between the three variables [r = 0.009, p = 0.882, n = 260] and [r = -0.074, p = 0.231, n = 260], indicating that the number of PD attended and types of PD has a negligible influence on teachers' perceived benefits of PD. The p-value ($p > 0.05$) indicates that the correlation is not statistically significant (see Table 18).

These results lead us to conclude that neither the number of PD attended nor the types of PD attended significantly determine the perceived benefits of PD. The correlations between these variables are very weak and not statistically significant, indicating that other factors likely play a more significant role in influencing teachers' perceptions of the benefits of PD. Such factors could include the quality of PD, relevance to the teachers' specific needs, effectiveness of the instructors, practical applicability of the PD content, opportunities for engagement and active learning, follow-up and support, and sustainability of the PD programmes. Focusing on improving these aspects may enhance the overall effectiveness of professional development programs and, consequently, their perceived benefits. This reasoning is supported by Darling-Hammond et al. (2017), who

stated that key features of effective teacher PD must focus on content, incorporation of active learning, support for collaboration, use of models of effective practice, provision of coaching and expert support, opportunities for feedback and reflection, and sustained duration.

Conclusion, Limitations and Recommendations

Through the use of a sequential explanatory mixed methods design, informed by a pragmatism paradigm, this study examined the PD needs of the secondary school teachers and its benefits and challenges. Overall, the participants affirm its importance and highlighted various benefits while also acknowledging the existing barriers. Independent Samples T-test results revealed no significant differences in the perceived benefits and barriers of PD between males and females, suggesting that gender is not a key determinant in these perceptions. Additionally, regression analysis indicated that neither qualification nor teaching experience significantly influence PD areas. The Pearson correlation results further concluded that the number of PD attended does not significantly enhance teachers' teaching practices, as indicated by a low correlation coefficient ($r = 0.054$, $p = 0.388$).

Qualitative findings emphasised the need for PD to be a continuous, collaborative process tailored to individual needs, supported by ongoing strategies. Effective PD programmes should focus on core teaching areas, offer practical and interactive learning opportunities, and include robust follow-up support. Participants stressed the importance of high-quality, personalised PD for enhancing teacher effectiveness and student outcomes.

Consequently, the present study provides valuable insight into the nature and complexity of PD needs for secondary school teachers. It will enable teachers, school leaders, and organisations to better understand the benefits and challenges of PD. The leadership role of school leaders in identifying relevant PD areas and allocating equal opportunities is crucial in enhancing secondary school teachers' personal and professional growth.

This study's limitation is the inability to reach the targeted sample and therefore, may not be representative of the broader population of teachers. Future research should incorporate a larger sample to provide a more comprehensive understanding of PD needs and its impacts. Additionally, conducting longitudinal research would help in understanding the long-term effects of PD on teacher performance and student outcomes, providing a clearer picture of its sustained impact. A few of the recommendations from the study are as follows:

- The study suggests developing and implementing PD programmes tailored to the specific needs of different teacher groups, considering factors such as subject area and individual learning preferences;
- Opportunity for school leaders to play an active role in planning and identifying the most relevant PD areas for their teachers and facilitating to allocate equal and continuous PD opportunities in schools;
- The need to maintain consistency in providing PD opportunities for teachers for the continuity of practice and effective follow-up and reflections;

- The need to empower teachers through the entire PD programmes including active involvement of teachers in PD planning, research related to PD, facilitating PD programmes and follow-up research activities and publications.
- Increasing need to establish effective monitoring and evaluation system to assess the effectiveness and the impact of PD, including pre and post data collection, follow-up reports, conducting conferences and publications.

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