



Critical Reflection as a Pedagogical Process for Teacher Professional Development through Participatory Action Research

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Abstract

Reflective practice is widely promoted in teacher professional development and theorized as an individual and technical activity with limited pedagogical process and consequences. This study conceptualizes critical reflection as a pedagogical process rooted within collaborative and participatory professional learning. Drawing on a qualitative participatory action research, this study was conducted with basic and secondary level school teachers in the institutional school located in Koshi Province, Nepal. It examines how critical reflection considers teachers' curriculum engagement, pedagogical improvement, and professional agency through collaborative engagement. Data were collected through focus group discussions, semi-structured interviews, and reflective notes and analyzed through narrative analysis. The findings show that critical reflection fosters reflective engagement for curriculum understanding, collaborative commitment to exploring innovative pedagogical practices, shifts from traditional to student-centered teaching-learning, and robust connections between students' learning and teachers' professional growth. The study extends transformative learning theory by demonstrating critical reflection as a dialogic and socially mediated process for teachers' professional development. The findings suggest that teachers' professional learning can be strengthened when critical reflection is positioned as a pedagogical process rather than technical instrument.

Keywords: Critical reflection, teacher professional development, pedagogical improvement, professional agency

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Introduction

Critical reflection has increasingly been acknowledged as a fundamental pedagogical process which encourages teachers to critically examine their professional beliefs, values, perspectives, and practices to reconstruct professional knowledge and skills to improve classroom practices (Schon, 1983; Brookfield, 2017). It enables teachers to transform their daily classroom experiences into professional learning through self-questioning, inquiry, dialogue, and evidence-based decision making. Schon (1983) forwarded the concept of reflection-in-action and reflection-on-action. He argued that teachers develop professional knowledge through continuous engagement with uncertain and complex classroom situations rather than routine implementation of same instructional approach. Critical reflection acts as a catalyst for continuous Teachers' Professional Development (TPD) through transformative learning which engages teachers to reevaluate deeply held professional assumptions and reconstruct new frame of references (Mezirow, 1991). TPD strengthens teachers' professional learning by enhancing their curriculum understanding, pedagogical competencies, instructional effectiveness, and students' learning outcomes (Opfer & Pedder, 2011). Continuous teacher professional development includes both formal and informal learning which enhances their knowledge, skills, values, and professional identity. It inspires teachers to refine their pedagogical practices, collaborate with colleagues, and cultivate the habit of critical inquiry for lifelong learning (Poudel, 2022). However, professional development becomes meaningful when teachers critically examine their professional assumptions, beliefs, and instructional practices from multiple perspectives i.e., self, colleagues, students, and other educational stakeholders (Brookfield, 2017; Larrivee, 2000). Critical reflection inspires teachers to question, generate, and transform professional knowledge and skills conceptualizing it as a pedagogical process.

Although concerned stakeholders invested more on teacher professional development, empirical evidences showed that knowledge and skills acquired in workshops and training does not automatically translate into meaningful classroom practices (Opfer & Pedder, 2007; Timperley et al., 2007). However, professional learning becomes effective when teachers engage in critical examination of their everyday classroom teaching, deep-rooted professional assumptions and beliefs (Brookfield, 2017; Schon, 1983). It makes critical reflection as a pedagogical process that enables teachers to connect professional knowledge and skills with sociocultural realities of classrooms. The pedagogical strategies become more effective when teachers reflect critically on their daily practices and assumptions. Reflective practices provide opportunities for teachers to examine their long-held beliefs, assumptions, and practices through self-evaluation and collaborative dialogue (Davis & McDonald, 2019). Exploring their own and colleagues' practices through different lenses teachers improve their pedagogical approaches.

Collaborative critical reflection enhances teachers' pedagogical decision-making and adaptability. It enables them to challenge assumptions, negotiate meanings,

and co-construct context-responsive pedagogical knowledge and skills (Segal, 2024). Critical inquiries enhance teachers' self-evaluation, self-reflection, and skills to identify learners' needs (Poudel, 2022). Collaborative reflective inquiries develop teachers' deeper professional understanding through dialogue, colleagues critiques, shared interpretation of classroom practices. Critical reflection and professional development are interconnected to improve teachers' knowledge, skills, confidence, and expertise. The integration of these two makes professional development more contextual, collaborative, and appropriate to solve real-world problems (Pant et al., 2020). The evolving concept of critical reflection has challenged the assumptions that professional development occurs primarily from structured workshops and short-term training. Therefore, reflective practices should be understood as collaborative pedagogical process where teachers deconstruct, reconstruct, and transform professional values and practices an iterative process of plan, implement, and reflect.

The global discourse on reflective inquiry influences teachers' professional development practices in Nepal. The guidelines and policies advocated for continuous professional development, reflective practice, classroom-based inquiry, context-based pedagogies, and competency-based learning for educational improvement (MoEST, 2019; 2022). It emphasizes school based collaborated professional learning rooted in teachers' everyday classroom practices instead of conventional training models. The revised teachers' competency framework highlighted reflective practice, classroom inquiry, collaboration and continuous learning as core professional competencies. It aims to strengthen teachers' capacity to critically examine and improve pedagogical practices through the process of critical inquiry and self-reflection. However, teacher professional development programs limited in short-term trainings, externally prescribed contents, and fragmented which provided less spaces for collaborative inquiry (Khanal, 2022). It makes professional development as administrative requirement instead of continuous professional growth for sustained pedagogical transformation. Collaborative reflection improves teachers' professional agency and shared responsibility for pedagogical improvement (Rana et al., 2022; Subedi & Ghaju, 2022). It shows that teacher as active knowledge creators instead of informer. Though it explore the importance of action research for professional development hardly examine how critical reflection works as pedagogical process.

In Current educational practices, Participatory Action Research (PAR) is recognized as a good approach for teachers' professional development. It promotes collaboration, democratic participation, and context-responsive pedagogical innovation (Kemmis et al., 2014). However, we hardly find the integration of critical reflection and PAR to develop, examine, and reconstruct professional knowledge and skills by conceptualizing critical reflection as pedagogical process. The studies (Pokhrel & Behera, 2016; Poudel, 2022) showed that many TPD programs in Nepal are designed without considering, collaborating, and identifying the needs of real classroom issues. It failed to translate the knowledge, skills, and values acquired by teachers during

trainings/workshop into meaningful classroom practices. It shows the needs to engage teachers in self-questioning on their classroom experiences, reconstruct professional practices, and transform pedagogies.

The purpose of this study is to explore how critical reflection function as a pedagogical process for teacher professional development by engaging teachers as co-researchers in questioning their pedagogical practices, designing student-engaged pedagogies, implementing them in classrooms, and reflecting for further improvement. It focuses to examine how teachers collaboratively engage in reflective inquiry, negotiate professional learning, and reconstruct pedagogical practices through iterative cycles of plan, action, observation, and reflection within the school context in Nepal. Thus, this study dedicates to answer the emerging question: How do teachers employ critical reflection as a pedagogical process for professional development through PAR? Critically reflecting on classroom experiences and practices helps teachers to innovate their instructional approaches to meet the needs of learners. The practice of self-reflection and critical inquiry make teachers self-regulated and autonomous, which is essential to improve their pedagogical strategies. This study involves the teachers in participatory professional development from one institutional school only. It focuses on teachers' experiences on critical reflection and collaborative professional learning instead of measuring the effectiveness of teachers' professional development programs and improvement in students' learning performances.

Literature Review

Critical Reflection as a Pedagogical Process

Critical reflection is “the sustained and intentional process of identifying and checking the accuracy and validity of our teaching assumptions” (Brookfield, 2017, p. 3). It develops teachers' professional competencies as they evaluate their activities and consequences related to classroom teaching (Smith, 2011). It enhances teachers' knowledge and skills as they make plans based on their experiences at their own pace and taste. Critical reflection enhances their professionalism and makes them capable of enduring a condition of mental unrest and disturbance (Lysberg & Ronning, 2021). It helps to solve problems by describing teachers' everyday classroom challenges in logical sequences. Schon (1983) defined reflection as a cognitive process to analyze teaching perspectives and practices to improve professional judgment. However, critical reflection is a socially mediated and transformative pedagogical process which enables teachers to examine assumptions and negotiate meanings for context-based professional learning (Brookfield, 2000). This practice helps them to review different approaches to knowledge construction based on the context. Critical self-reflection and dialectical discourse of teachers help to set the transformation (Mezirow, 1997) in teaching and learning. It enables teachers to assess the source, nature, and consequences of their habits of mind in the profession (Larrivee, 2000). It is instrumental to change our deep-rooted assumptions and beliefs.

Critical reflection changes teachers' professional engagement and act as an active pedagogical process. It supports them to re-conceptualize teaching approaches, interact with students, and modify teaching strategies (Lefebvre et al., 2023). It helps teachers to assess teaching experiences and instructional plans to improve students learning achievements. Reflection is not an isolated cognitive exercise but a sustained engagement with practice, theory integration, and continuous professional development. Teledahl et al. (2025) argued that collaborative inquiry on teachers' professional practices is effective for professional development rather than individual questioning. However, it is necessary to explore how critical reflection activates pedagogically to enhance teachers' professional development.

Participatory Action Research for Teacher Professional Development

The relationship between Participatory Action Research (PAR) and TPD is emerging in the educational research and practices. PAR is a collaborative pedagogical approach that engages teachers to generate context-based professional knowledge and skills to improve their instructional practices (Kemmis & McTaggart, 2014). It focuses on transforming teachers' professional beliefs and practices by empowering them through collaborative involvement and engagement for their emancipation (Upreti et al., 2024). It acknowledges teachers as active co-creators of knowledge and professional development as ongoing process of collaborative critical inquiry. PAR aims to bring practical improvement, innovative change (Cook, 2004), and development in teachers' understanding on professional growth. In PAR teachers as co-researchers critically examine the social, cultural, and political dimensions of their professional beliefs and pedagogical practices (Brookfield, 2017). It enables teachers' to address real classroom challenges by promoting collaboration, evidence-based decision-making, and innovative pedagogical practices (Borozan et al., 2025). However, transformative potential of PAR depends upon the participatory planning, collective implementation, and collaborative reflection rather than procedural completion of research cycles.

TPD is a way to increase teachers' accountability, enhance their values, and encourage them to participate in professional debates, thereby developing flexibility and informed decision-making skills (Ghimire, 2019). Teachers update their professional skills and values by attending various trainings, seminars, and workshops. TPD is a collaborative and continuing course grounded on a constructivist approach (Pokhrel & Behera, 2016). It involves teachers in all phases, from designing programs or training schedules to implementing outcomes in the classroom. According to Poudel (2022), TPD is a basis for meaningful teaching and learning that offers both opportunities and challenges for teachers. It enhances teachers' competencies by analyzing their strengths and weaknesses through the integration of art-based and technology-based pedagogies to make classrooms engaging and motivating (Pant et al., 2020). Integration of critical reflection with TPD offer teachers professional autonomy and transformative practices, enhancing their knowledge, skills, and attitudes (Kennedy, 2005) through inner realization. According to Johnson (2019), PAR is an effective

and efficient method for developing teachers' professionalism by involving them in new strategies and practices. Although teachers update and refresh their professional knowledge and skills in trainings and workshops, they often find it challenging to systematically apply in real classroom settings (Ghimire, 2019; Khanal, 2022, Pokhrel & Behera, 2016, Poudel, 2022; Reynolds & Rose, 2006). In such condition, we need collaborative and context-based professional development where teachers engage together to find classroom needs, develop plans, implement pedagogical strategies, and reflect critically on their beliefs and practices by refining them through iterative practices (Darling-Hammond et al., 2017). Thus, it is necessary to incorporate critical reflection as a pedagogical process through participatory and collaborative approach for the professional development of teachers.

Transformative Learning Theory

Transformative learning theory focuses on bringing deep changes in teachers' existing beliefs, assumptions, and practices through critical self-reflection and self-questioning (Mezirow, 2003). It inspires teachers to scrutinize their own beliefs, assumptions, and experiences, which motivates them to transform their perspectives (Misawa, 2024). It prompts teachers to go beyond acquiring new professional knowledge and skills, leading to a substantial change in their understanding of the social, cultural, and power dynamics of the classroom. Being transformative learners, teachers develop a new frame of reference by integrating experiences with the context, which is more inclusive, discriminating, and self-reflective (Mezirow, 1997). It motivates teachers to engage in deep self-reflection and critical analysis of their teaching and learning beliefs and practices. It prepares them to incorporate the dialogue and discourse into the learning process. It encourages school leaders and teachers to assess different sources for effective professional practices (Raut & Pant, 2024). It promotes teachers to adopt the process of unlearning as they examine and question their professional assumptions and perspectives. It also develops their critical consciousness and fosters cognitive, affective, and psychomotor domains for holistic learning. As a dialogic learning, they seek suitability for when and where their new learning fits to meet the needs of the classroom and professional upgradation.

Methods and Procedures

PAR as a Research Methodology

This study employed PAR, which is a collaborative, democratic, and inclusive approach that encourages shared ownership among research participants (Upreti et al., 2024). PAR enables co-researchers to understand professional development as collaborative critical process in which they construct knowledge and develop context-responsive pedagogical strategies (Kemmis & McTaggart, 2014). It is a practical approach to upgrade the instructional practices by engaging teachers as co-researchers in collaboratively identifying classroom issues, design interventions, implement pedagogical plans, observe classroom performance, and critically reflect on practices

in iterative cycles of inquiry. PAR positions research participants as active agents in constructing contextually relevant professional knowledge through collaborative inquiry and informed action (McNiff & Whitehead, 2002) for their professional agency and empowerment. In this way, PAR functions as the pedagogical process and promotes a collaborative learning culture by fostering autonomy, collegial dialogue, and meaningful engagement.

This PAR was conducted at the institutional school located in Koshi Province, Nepal from 10 March to 12 August 2024 in two cycles. The first cycle of this PAR was conducted from 10 March to 03 June 2024 and second cycle from 04 June to 12 August 2024. At first, the first author conducted meetings with eighteen teachers, of whom seven were female and eleven were male. They were teaching at basic (Grade 4 to 8) and secondary (grade 9 and 10) levels. During these meetings, the lead researcher shared the concept, application, and implications of this study in relation to their professional development and students' learning. He proposed them to become a part of this study, as it is an opportunity for collaborative professional development in the continuous process of learning, unlearning, and relearning. They expressed willingness to be a part of this research and shared their curiosity to learn new pedagogical approaches. After regular discussion and dialogue twelve teachers-five female and seven male were joined this PAR as co-researchers and six teachers-two female and four male participated as research participants. All twelve co-researchers and the lead researcher engaged collaboratively to identify the areas of improvement, design the plan, implement new strategies, and reflect experiences.

The field texts were generated through interviews, focus group discussions, and reflective notes. The reflective lens were used to understand co-researchers' professional lives and practices of critical reflection as pedagogical process. Narrative analysis was used to understand and making meaning of experience through conversations, dialogue, and participation in the ongoing lives of research participants (Clandinin & Caine, 2008). The first author carefully analyzed his and co-researchers' reflective notes, and conversation without omitting any words and clues at first. Being a responsible researcher, he relates the field texts with context to make the meaning (Riessman, 2008). Narrative analysis of each event helped to develop the meanings from actions and reflections. In this PAR, co-researchers' stories are central; narrative writing enabled us to analyze meaning, context, and power dynamics (Richardson, 2000). Their narratives provided rich and reflexive data to describe human actions in subjective manner (Polkinghorne, 1995). In this study, the first author contributed as lead researcher collaboratively engaging with co-researchers and second author provided the mentorship and guidance.

The data were generated through prolonged engagement with co-researchers and applied different techniques such as interviews, FGDs, reflective notes, theoretical, thematic, and empirical triangulation to maintain the trustworthiness. The use of collaborative critical inquiry enabled to construct context-responsive pedagogies

through co-researchers' lived experiences (Hamati-Ataya, 2020). We adopted praxis by continuously reflecting and acting for pedagogical innovation. Pedagogical thoughtfulness reveals our consciousness and awareness of classroom teaching and learning. We obtained prior consent from the school and teachers and used pseudonyms to ensure confidentiality. All co-researchers and research participants were duly respected and valued equally with the right to quit their participation at any stage and activities (Davison et al., 2022). We analyze our assumptions, listen to different perspectives with patience, value each other's ideas and opinions, and respect diverse voices for pedagogical improvement.

Results

The stories of co-researchers were used to describe their actions for professional development. Based on the narrative analysis, the following four themes were derived: collaborative reflection for curriculum understanding, collaboration for exploration of innovative pedagogies, shift from traditional to student-centered learning, and connecting teachers' professional learning with students' performance.

Collaborative Reflection for Curriculum Understanding

The collaborative need analysis made us to conduct a participatory workshop in which, we formed the groups based on the subjects. We collaboratively discussed on the curriculum including allocated working hours, learning outcomes, and content given in the curriculum by aligning with the school's working hours. Each participant interacted and discussed actively in their respective group and prepared a brief presentation of their discussion on the worksheet and chart papers. Each group presented in their turn and other group members provided feedback. The collaborative workshop seems very productive to improve teachers' pedagogical knowledge and skills. One of the participants, Ivana shared:

I found the workshop to be very useful. It will help me to develop my personal as well as professional skills. I understand the idea of curriculum mapping, but it seems a challenge to implement in the classroom. (Reflective notes)

The participatory workshop empowers teachers, enabling them to critically reflect on the outcomes, what worked well, and what did not. Sharing ideas with colleagues, discussing various aspects of the curriculum, and preparing academic plans aligned with the school's academic framework fosters an interactive and participatory learning environment among teachers. Involving and engaging teachers in critical reflection on their subject curricula, working hours, learning outcomes, and course breakdowns for the four terms according to the school's academic calendar develops their planning and execution skills. However, their doubts regarding effective classroom implementation require additional support and collaboration. Josna added:

I knew the curriculum was available on the website of the Curriculum Development Center, but I had not downloaded it earlier. Now, I have printed

a copy and broken it down according to the school calendar. I also discussed it with colleagues. (Interview with Josna on 29 May 2024)

Collaborative discussion inspired teacher to enhance their professional competencies as they downloaded the curriculum from the concerned websites and planned to implement it in classroom teaching and learning. During the interview, Rakesh shared:

As we discussed reflective practices at the beginning of this session, it encouraged me to explore more about curriculum. I realized that being a teacher, we must know about the curriculum of the subjects we teach. I downloaded the curriculum from the website of the Curriculum Development Center and printed it. Nowadays, before starting any chapter, I go through the curriculum, which helps me to think and plan how to perform well in the classroom. (Interview with Rakesh on 26 May 2024)

Reflective practices helps teachers delve more deeply into the curriculum by downloading resources from the website of CDC, integrating them into daily routine, and planning lessons effectively. It increases their awareness and inspires them to share with fellow teachers, thereby improving their instructional practices. The use of reflective practices encourages teachers to explore new ideas and implement them in real classroom settings, which makes them more confident and purposeful in professional practices by transforming both their teaching and learning (Sunar et al., 2024). Involvement in curriculum mapping increases teachers' awareness and commitment to transformative practices, as it encourages critical reflection on what is actually occurring in the classroom compared to what is planned and presented in the curriculum (Benade, 2008).

It shows that reflective practices increase teachers' awareness level of curriculum and help to update their existing professional knowledge, skills, and values. It enables teachers to think more deeply about the different components of curriculum (Bintz & Dillard, 2007), which creates the space to link the theory with practice in the classroom. Critical reflection motivates them to use the internet and digital platforms to search and download the curriculum themselves. The use of a reflective approach enhances teachers' creativity and professional capabilities (Yuen et al., 2018), which helps to break down the curriculum according to the academic plan of the school.

Teachers' awareness of the curriculum further helps to design instructional plans to enhance learning outcomes (Taylor, 2016). Teachers are key mediators in transforming curriculum into a real classroom event (Tran & O'Connor, 2024). They should use diverse classroom instructions according to the context. Curriculum mapping becomes a dynamic tool that promotes dialogue and critical conversations (Benade, 2008). It further enables cross-disciplinary collaboration that is regarded as essential for meaningful teaching and learning.

Collaboration for Exploration of Innovative Pedagogies

In the participatory professional development workshop, teachers discussed about different innovative STEAM-based pedagogical approaches such as project-based learning (PBL), inquiry-based learning (IBL), and art-based pedagogy (ABL). Participation in training and workshops involves teachers in discussion and collaboration with other teachers (Poudel, 2022). They were actively involved in each activity and learned collaboratively, engaging their head, heart, and hands in the process. They formed different groups and each group discussed and shared on innovative pedagogical approaches. The orientation and practice of innovative pedagogies and reflective teaching helped them realize the possibilities for professional growth. It also encouraged them to think and manage the resources required to design and apply innovative pedagogies in the classroom. Kavya wrote:

I have learned an important skill of involving and engaging students as much as possible in classroom learning. The training was crucial for integrated learning. I learned a method of teaching students different subjects in an engaging way under a single theme. (Kavya's reflective notes)

Teachers realized that they got the opportunity to discuss new approaches to involve and engage learners in the learning process during the workshop. They integrated the contents from different subjects and designed an innovative pedagogical approach for effective teaching and learning. Sophie reflected:

I had the opportunity to learn many valuable concepts and methods, which made me realize the need for changes in teaching and learning approaches. I believed that both the teacher and the students found the learning process easier and more effective. The sound knowledge of pedagogies helps me to become a good teacher. (Interview with Sophie on 30 May 2024)

The in-house teachers' professional development workshop, organized in a participatory approach, provided opportunities to learn many valuable concepts and methods. Involving and engaging in such workshop activities, teachers become active learners and co-construction of knowledge (Dahal et al., 2022), which helps to transform the classroom teaching and learning. This collaborative approach creates a space for a community of practice where teachers learn through mutual engagement and shared goals, as this teacher-driven learning process develops ownership among participants, which is vital for sustainable professional development among teachers. Teachers need continuous support and collaboration to implement innovative pedagogies in the classroom in a sustainable way, which is possible through a participatory approach. It helps teachers to update with evolving tendencies, improves their instructional practices, and nurtures a progressive mindset for lifelong learning (Al Hamad et al., 2024). The workshop was planned after analyzing the need for teachers to develop a sense of ownership in professional learning. It supports and empowers the teachers as they designed and presented sample plans with innovative approaches by integrating

multiple subjects to make changes in educational practices for better professional growth and effective student learning, which ultimately develops the collective agency (Kemmis et al., 2014) in the school.

Familiarity with multiple pedagogical approaches, such as art-based, inquiry-based, and project-based learning, helps teachers to use differential learning by understanding their prior knowledge and experiences with the content (Garland, 2008). Participatory learning promotes contextualized understanding and enables teachers to make positive changes in their professional practices (Francisco et al., 2024) to facilitate the content using innovative pedagogical approaches.

Shift from Traditional to Student-Centered Learning

Pedagogy plays a vital role in shaping the learners' future because classroom learning is the foundation of formal education. Our classroom learning is highly dominated by traditional pedagogical approaches, where teachers play the role of knowledge disseminator and students remain as passive listeners. Such practices rarely develop an interactive learning environment and often hinder the development of soft skills among learners. However, the practices of reflection-in-action support pedagogical shifts and positively impact the learning process. In this scenario, Kavya shared:

While teaching 'Swadkatha' in grade nine, I told students to read the paragraphs sequentially, assigning them the responsibility of presenting what they had read and encouraging them to ask about the meanings of difficult words. They began to willingly take turns presenting and assumed the responsibility of ensuring overall comprehension of the text. (Interview with Kavya on 02 June 2024)

In the classroom teaching, teacher assigned tasks to each student to read and understand by switching the role from a traditional teacher to a facilitator, becoming ready to reach each student wherever they needed her help. As, she told them to present their understanding, it increases students' participation and interest in learning. Students presented in their turn, which showed overall understanding of the text.

In the same way, Sage narrated:

When some students were unable to understand, I instantly decided to use another approach to address this issue. I conducted group discussions and facilitated them in the middle as per the requirement. After I had finished explaining, one student asked, "What would have happened if there were no origin of society?" I did not give a direct answer to the question; instead, I asked everyone to think about it and write down their thoughts on a note copy. (Sage's reflective note)

In the classroom, teacher adopted reflection-in-action and organized the group discussions. Such flexible and responsive action by the teacher helped to shift from a teacher-centered to a more interactive student-centered learning environment in the

classroom. The teacher's approach to the student's question reflected his commitment to foster critical thinking, problem-solving, and inquiry skills among students. Instead of providing a readymade answer, he encouraged all students to envision the question and communicate their ideas in writing by demonstrating their own action.

Furthermore, the next co-researcher Hiya, views that teachers can adopt an art-based approach to make learning effective:

While teaching the topic "Expressions" in grade six, I observed that two students were playing with pens. Without highlighting their activities, I gave them a situation and requested that they do role play by writing a conversation and act accordingly. (Hiya's reflective note)

In the English language class, the teacher noticed two students were engaged in off-task behavior, and she strategically redirected their attention by assigning them a role-playing task. She involved students in the learning process by engaging them in writing a conversation based on the situation and acting it out in front of their classmates. In this way, by using reflection-in-action, she changed the teaching learning strategies to maintain the classroom learning environment and reinforced the lesson by providing practical engaging tasks.

While using traditional pedagogical approaches, teachers began to reflect critically on their practices after observing student disengagement. They acknowledged a gap between their teaching approaches and students' learning needs, which aligns with Schon's (1983) concept of reflective practice. It emphasizes reconsidering professional practices within the context to develop insights into students' perspectives. It encourages grounded decisions by adopting more interactive approaches. Acknowledging students' perspectives is central to critically reflective teaching (Brookfield, 2017). In the classroom teaching, teachers engaged in rapid reflection, which is a spontaneous adjustment method in real time. This aligns with Griffiths and Tann (1992) view of rapid reflection as key to responsive pedagogy. Teachers also used reflection-in-action to address emerging needs on the spot, which is consistent with Schon (1983) emphasis on real-time professional judgement. Collaborative learning further enabled teachers to scrutinize their methods and their impacts on students. These collaborative practices promote critical reflection and meaningful professional development. The probing questions, short presentations, group discussion, role-playing, demonstration, and other hands-on activities involved students in the knowledge construction process.

Connecting Teachers' Professional Learning with Students' Performance

The sharing of experiences among colleagues about the use of innovative pedagogies and critical reflection in teaching and learning plays a significant role in the professional development of teachers. Reflecting one's professional practices in the group empowers the individual as well as group members, as human beings learn more from experiences. Given that, the co-researchers of this study have diverse experiences and perspectives on using innovative pedagogies. Josna shared:

After the implementation of new pedagogies, such as art-based, project-based, and 5E instructional approaches, the teaching process has become easier. I am working as a guide or facilitator and encourage students to explore on their own to enhance their knowledge, skills, and abilities. (Interview with Josna on 29 May 2024)

In the process of their professional development teachers use art-based pedagogy, project-based learning, and the 5E instructional model in the classroom teaching and learning which have both benefits and challenges. It enabled teachers to shift their role from content deliverer to a facilitator, encouraging student-led collaborative learning. Exploring students' prior knowledge and engaging in group discussions have enriched classroom interactions, fostering curiosity and deepening engagement with the content. Anthony told:

Most of the time, we feel pressured by these innovative pedagogies as compared to the one-way method. However, the 5E instructional approach effectively engages every student and provides them with an equal opportunity to learn actively. (Interview with Anthony on 03 June 2024)

Although innovative pedagogy such as the 5E instructional method promoted student engagement and active participation in learning, it also created pressure on teachers. Teachers need to engage in extensive planning, hands-on activities, and continuous facilitation to make teaching more dynamic and contextual. Hands-on activities empower students to connect subject matter to the context more meaningfully.

Ivana added:

Overall, these innovative pedagogies are very effective, but sometimes I couldn't efficiently set students up with the tools and skills needed to participate positively due to a lack of time. I learned group learning, inquiry-based learning, collaborative learning, and the 5E instructional model in a workshop. (Ivana's reflective note)

Although the teacher acknowledged the importance of innovative pedagogies such as group learning, inquiry-based learning, collaborative learning, and the 5E instructional model, they faced challenges in classroom implementation due to time constraints, student behavior management, resource utilization, and classroom setup. She realized the complex interplay between pedagogical innovation and practical constraints in the learning process as teachers acquired new pedagogical skills through a professional development workshop. Kavya, a Nepali language teacher, shared:

By using the 5E instructional model and art-based methods in teaching, I experienced teaching quite easily and entertainingly, as students are learning happily. I observed a smile on their face in the classroom and noticed that their interest in learning had awakened. I presented the contents in various

ways according to the classroom context and students' interests. (Interview with Kavya on 02 June 2024)

The use of the 5E instructional method promotes collaborative and active learning in the classroom, where students learn together to find new concepts, resolve problems, and draw conclusions. Similarly, art-based pedagogy fosters students' creativity, imagination, and happiness in learning. It increases learning outcomes by cultivating verbal and written communication, collaboration, creativity, and critical thinking. In this way, the use of pedagogical approaches based on the classroom context and students' preferences has a positive impact on learning.

They reflected that critical reflection is an essential component of teaching and has helped to refine their teaching practices and adapt instructional strategies according to the needs of students. It serves as a tool for examining teachers' professional identities, beliefs, and particular perceptions towards their professional and institutional values (Smith, 2011). Peer collaboration, contextualized learning, and periodic reflective practices are important for teachers' professional growth. Developing a learner-centered environment in the classroom reinforces effective teaching practices, which ultimately enhances students' success and teachers' professional competencies. The use of progressive pedagogies by teachers challenges the traditional lecture method by involving learners actively building knowledge through sharing their prior knowledge and active engagement. It enables teachers to explore context-based pedagogical approaches.

Discussion

The on-site support and collaborative learning communities acts as a support mechanism to facilitate the content using innovative pedagogical approaches. Reflective practices in teaching and learning helped teachers to change their role from being knowledge transmitters to facilitators in the classroom. Teachers participating in this pedagogical transformation shared their evolving identities, moving away from being the central figure in the classroom to adopting a more supportive role and facilitating students in the learning process. The teachers started to recognize students' prior knowledge, learning aptitude, basic linguistic and numerical competencies, which influence the success of innovative pedagogies to set a lifelong learning aptitude. Identifying learners' needs, applying knowledge and skills, and evaluating resources developed the reflective and critical thinking skills among teachers (Williams, 2001). Their initiatives to question the existing social, cultural, and power structures of the school advocated for the foundational improvement of teaching and learning in the long run.

Such emancipatory approaches by teachers foster a democratic space for communication in the school by empowering and enhancing personal agency (Grundy, 1987). The acceptance of internal and external barriers within the classroom, such as insufficient resource materials, time constraints, lack of wide spaces in the classroom,

rigid curriculum structures, and the need for subject-specific training to deepen the disciplinary knowledge, as well as advocacy for social and economic upgradation, reflected the teachers' aspiration for professional transformation and institutional improvement. Teachers' critically examine their professional practices to make it contextual, dynamic, and evolving nature of collaborative learning. Although they enhance their pedagogical knowledge by participating in professional development workshops, it is necessary to integrate innovative pedagogies, teachers' professional development programs, and reflective practices into the schools' educational policy framework for long-term change. The practices of critical reflection help to refine pedagogical strategies through reflexivity.

In the process of professional development, teachers experience a complex interplay between pedagogical innovation, structural constraints, and professional agency. Teachers shared multiple benefits of innovative pedagogies and teaching in a student-centered classroom, which is clearly different from traditional classrooms. It is confirmed that innovative pedagogies enhance student engagement, foster active learning, and support teachers' professional growth, but their effectiveness depends on institutional support, resource availability, and teachers' ability to critically reflect and adapt for context-based learning. It is necessary to maintain the balance between pedagogical creativity and structural feasibility for sustainable educational transformation.

This pedagogical shift reflected the transformative process of teaching and learning practices of teachers. They moved from being knowledge transmitters to facilitators in the classroom teaching and learning. Teachers participating in this pedagogical transformation shared their evolving identities, moving away from being the central figure in the classroom to adopting a more supportive role, shifting from instructor to a facilitator, guiding students in the learning process (Keiler, 2018). Identifying learners' needs, applying knowledge and skills, and evaluating resources developed the reflective and critical thinking skills among teachers which changed their instructional practices.

Reflective practices change their perspectives and shift their teacher-centered teaching into student-centered learning. The use of reflection-in-action in the classroom instantly switched over teacher's role from knowledge disseminator to facilitator of learning. Instead of keeping students as passive listeners, they involved them in the learning process by making them do role play and share their ideas with their peers. It is realized that innovative pedagogies and reflective practices enhance students' engagement, active learning, and teacher professional growth. However, the effectiveness of all these depends on institutional support, resources, and the workload of teachers. Although writing a critical reflection of all classes is quite difficult for some teachers, it has a positive impact on their professional development. Sustainable use of critical reflection as a pedagogical process requires balancing workload and structural support from the institute, which ensures teachers' innovative pedagogical approaches and collaborative work for effective implementation.

Conclusion

The participatory based professional learning in the school helped to identify core areas for improvement. The prolonged engagement and active involvement from the needs assessment phase, planning, acting, and reflecting developed collegial relations among teachers. The participatory meetings and focus-group discussions enhance teachers' professional knowledge, skills, attitude, and values. Critical self-reflection and dialogic discourse enhance teachers' enthusiasm, active interaction, and participation to employ innovative pedagogies. The implementation of innovative pedagogies in the classroom and the use of reflective practices to critically analyze their teaching and learning have sharpened their professional competencies. Reflective practices change their perspectives and shift their teacher-centered teaching into student-centered learning. The use of reflection-in-action in the classroom instantly switched over teacher's role from knowledge disseminator to facilitator of learning. Instead of keeping students as passive listeners, they involved them in the learning process with engaged activities. It is realized that innovative pedagogies and reflective practices enhance students' engagement, active learning, and teacher professional growth. Although writing a critical reflection of all classes is quite difficult for some teachers, it has a positive impact on their professional development. Regular use of critical reflection as a pedagogical process requires balancing workload and structural support from the institute, which ensures teachers' innovative pedagogical approaches and collaborative work.

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