

Research Article

Adopting BuddyPress Platform as an Online Community of Practice for Professional Development

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A community of practice can be formed to adopt professional development programs for teachers, according to the researcher's experience in Saudi Arabia. A community of practice is a group of people who share common interests, values, and goals. Thus, the absence of research encouraged this study. It is an investigation of how the theory of online CoP mediates between teachers with common interests and specialists. Teachers class teaches the value of realistic practice and real-life examples. Like other professional development programs such as workshops or training, we observe how this can help employees establish their own identity. This article highlights the value of establishing a community of practice among teachers or others with similar interests. This method increases teacher enthusiasm, creativity, and idea exchange by broadening professional dialogue.

1. Introduction

Researchers recommend that, in light of recent developments in online interactive learning technologies, knowledge should be constructed in a cooperative manner within activities that concentrate on product creation for adults [1]. Online communities of practice, in contrast to location-based communities of practice, bring individuals together around a task or an idea, and the tools available online allow means to suppress the conduct that is considered to be the standard in conventional groups [2–4]. Keeping this fact in mind, teachers often make use of the opportunities presented by social networks in order to establish communities of practice and cooperative settings. Because BuddyPress is one of the most popular services among adults, identifying whether or not it is a Community of Practice (CoP) environment can provide direction on how to develop and implement online learning environments for mature students. This is because BuddyPress is one of the most popular platforms among adults. There have only been a limited amount of research conducted into the use of the Community of Practice (CoP) framework in conjunction with BuddyPress. This is in contrast to the substantial amount of

work that is being put into determining whether or not the utilization of BuddyPress leads to improved educational objectives. This research presents a conceptual model of adult construction of knowledge concerning BuddyPress and wishes to make a contribution to the empirical evidence in this domain by creating, incorporating, and assessing adult learning experiences. As a result, given the significance of professional development, this research presents a conceptualization of adult knowledge construction regarding BuddyPress [5–7].

Adult learners are differentiated from other types of learners due to the fact that they come from a variety of diverse backgrounds and have unique traits. Adult students come from a variety of backgrounds, each with their own unique sets of aspirations, experiences, vocations, and family dynamics. [8]. Adults take part in the educational process for a variety of reasons, including the pursuit of new employment or the development of skills necessary for a specific life role [9]. According to Knowles [10], adult students often learn both what they need to know and why it is necessary for them to learn it. Adult students have a strong internal incentive to be conscious of their responsibility to learn, to engage in the learning process, and to reflect on their own

experiences. This is due to the fact that adult students have more life experience than younger students. As a result, McCray [11] recommends that learning settings should be designed in a way that enables adults to highlight their experiences and concentrate on discussing these topics with other students. In addition, Halverson [12] recommends constructing activities to construct artifacts with the consideration of adult vocations. The production of objects or goods has as its primary objective the promotion of adults' participation in the social activities and activities involving other learners that take place within the community [13–15]. Adult learners, who come from a variety of diverse backgrounds and are able to take control of their own learning processes, may have the potential to establish a community via participation in activities that include collaborative learning. On the other hand, adult learners may have limited opportunities to form friendships with their contemporaries, and as a result, they may start to experience feelings of alienation and loneliness [16, 17]. The establishment of online communities of practice (CoPs) may be hindered as a result of these unfavorable elements; nevertheless, the use of social media in order to eradicate these problems may provide an opportunity. Adult students have the opportunity to positively influence the establishment of their online communities of practice (CoPs) since social media platforms have the capability to lessen the impact of variables that inhibit the formation of communities [18, 19].

According to the theory of situated learning, the learning environment is where all human knowledge may be found. The learning environment is a live setting in which students have a shared interest in collaborating on the solution of issues and exchanging ideas [20, 21]. According to Wenger's [22] social theory of learning, a community of practice (CoP) is a group of individuals who interact with one another (mutual engagement) as well as build techniques and resources (shared repertoire) in order to accomplish a shared objective (joint enterprise). According to Lave and Wenger [20], the most important aspect of learning is social engagement in the form of discourse. In this view, discourse is at the core of learning. The CoP may also be thought of as a collection of individuals who are in continual communication with one another in order to fulfill a standard set of requirements [23, 24].

More importantly, the impact of Continuing Professional Development (CPD) has been recognized and critically appraised during the last decade, prompting substantial educational research to examine the influence of CPD on learning outcomes [25, 26]. Worldwide, educational authorities and organizations are making strenuous efforts to improve instructors, expand their knowledge, and institutionalize new instructional approaches [27–29].

An Online Community of Practice (OCoP) was developed in this study as a feasible method for PD in the Saudi environment. This study aimed to determine the efficacy of incorporating online communities into PD programs in the Saudi context. To establish the possibility of using this technique in professional development, it was critical to communicate extensively with the teachers involved, present new ideas, discuss various alternatives, share their

experiences and skills, and uncover new possibilities. BuddyPress was chosen as the Learning Management System (LMS) because it is simple to use for teachers. It can be downloaded as a mobile application. It enables teachers to communicate with one another. It is highly secure. It is a free learning platform compared to other platforms such as Blackboard, Adobe Captivate Prime, and Talent LMS.

Overall, social media, and particularly BuddyPress as an open-source social networking software package, which is commonly utilized by individuals, has characteristics that enhance the development of learning skills as well as professional development. This is particularly important for people who are already working in the field of social media. Nevertheless, in order to appropriately develop the CoP, it is vital to know which aspects of social media technologies have an impact, and how these aspects influence the CoP. Only then can the CoP be created appropriately. Taking into consideration the significance of online learning environments in the context of distance education, online communities of practice (CoP) that are facilitated by social media platforms have the potential to develop into a prevalent kind of remote learning technology. As a result, the purpose of this research was to show the utility of incorporating online communities into professional development programs in the Saudi environment.

1.1. Conceptual Framework. There are numerous types of professional developments aiming to grow teachers professionally. Numerous researchers define PD using the conventional definition [30]. They describe the objective of professional development as procedures and actions that aim to improve teachers' professional knowledge, abilities, and attitude to improve students' results and learning [28, 31, 32]. Additionally, virtually the entirety of the definition has been mentioned by Desimone [33]. On the other side, PD in the modern era is defined as a program that encourages teachers to be lifelong learners through self-directed development guided by social constructivist and inquiry-based methodologies [34–36]. The benefit of CoP in professional development is that it encourages teachers from diverse cultural backgrounds to collaborate on challenges and share their knowledge [37–42]. Additionally, online networks can facilitate additional professional development for individuals' professional demands, practices, and interests [28, 43, 44]. The personalization and self-direction of the development process in online communities would facilitate ongoing professional collaboration between teachers [45, 46]. It would ultimately improve educational quality [47] and student achievement, for example, in mathematics, science, and reading [48, 49]. This section will highlight two ideas—PD and CoP—fundamental to the study's design.

PD can be offered formally through workshops, seminars, training courses, or informally through teacher conversations, peer observation in the classroom, reading relevant journals, and informal workshops. Guskey [32] describes formal PD as “systematic efforts to bring about change in teachers' classroom practices, in their attitudes and beliefs, and students' learning outcomes.” These

definitions reflect the varying perspectives of academics on how PD should be implemented, emphasizing that it can be accomplished through formal and informal mechanisms. Regardless of the method, by which it is delivered, the primary goal of professional development is to increase the quality of instructors in the educational area to improve student results [28, 30, 50–52]. While it has been stated that PD can take many forms, there is consensus in the research that certain forms of PD are likely to be more productive than others. In this regard, it is believed that traditional modes of professional development, such as short courses and workshops led by external experts, are less efficient than other approaches or formats [53, 54]. The primary disadvantage of these methods is that teachers participate passively rather than actively. These types of professional development are defined by a “top-down” attitude that generally fails to succeed in the educational area [55].

The question that may arise is what attributes make professional development programs more effective in the educational setting. A component of the response is that teachers should be active participants in professional development programs, with the chance to actively engage in their professional growth through meaningful conversation, planning, and practice. When the authors of PD programs address this fact, they will achieve their objectives [56]. Another aspect of PD effectiveness is its sustainability [57]. The extended period of professional development enables in-depth coverage of a topic, knowledge, and/or skill development, and the observation of positive effects on instructors. A third characteristic is a requirement for teacher collaboration, which is proven to be important for more productive professional development programmes. Day [56] concludes, based on research undertaken by renowned researchers, that “much research indicates that cooperation is a necessary component of teacher growth and consequently school improvement.”

1.2. Community of Practice (CoP). Wenger et al. [58] define a CoP as “a group of people who share a concern, a set of problems, or a passion for a subject and who continually deepen their knowledge and expertise in that area through interaction.” According to this definition, the heart of a CoP is the sharing of experiences and activities among members and the collaborative effort. As can be seen, CoPs offer a tangible opportunity for personal development across a range of disciplines. They are successfully implemented in various sectors, including private business, education, health, and ecological restoration. Additionally, online communities are viewed as a venue for individual and collective reflection on practices, making teacher engagement more challenging and interactive [59]. CoP’s philosophy necessitates interaction and negotiation among members. Indeed, the primary characteristic of a CoP is that it is based on situated learning among its members rather than on a top-down approach to PD. Numerous researchers emphasize the beneficial effects of the CoP strategy in encouraging teachers from diverse cultural backgrounds to collaborate on solving specific problems and sharing their knowledge [37–42, 60]. Additionally, the CoP may provide a

significant opportunity for teachers to bring their tacit knowledge and experience to the surface [61, 62].

When considering a CoP’s inherent characteristics, to Wenger [22], the three essential characteristics of CoPs are mutual engagement, joint enterprise, and a shared repertoire of negotiable resources. Mutual engagement entails members of the CoP sustaining their relationships with one another through participation in activities that foster trust. Joint enterprise places members in a cooperative position by requiring them to work cooperatively towards common goals. The third characteristic of a shared repertoire is that all members must access a pool of community-created resources, such as ideas, stories, and tools.

[58] discussed the key distinctions between Communities of Practice and other types of community structures. A community is a distinct social organization with a clearly defined purpose (Table 1). These distinctions, structural elements, and characteristics are critical in developing CoP.

The issue that may arise, particularly from an evaluation standpoint, is how learning occurs due to the CoP’s interaction. Lave and Wenger [20] argue in their theory that actual social life experiences provide members with experiences that they can relate to and build on. They argue that learning occurs when newcomers participate actively in the CoP and gradually increase their participation through collaboration with more experienced peers. They become frequent contributors to discussion and negotiation and progress into their learning level, offering increasing amounts of their own experience for the benefit of other members [20, 22]. CoP collaborate and support one another by focusing on issues pertinent to their subject and area of interest [63]. Lave and Wenger [20] coined the term ‘Legitimate Peripheral Participation’ to describe this learning process.

1.3. Applying a CoP via Technology. The issue at hand is whether a CoP can be achieved technologically. Through Learning Management Systems (LMS), advanced technology enables massive amounts of communication between people, whether synchronously via live chatting, video conferencing, audio conferencing, and Internet Relay Chat (IRC), or asynchronously via emails, newsgroups, and mailing lists. All of these features have resulted in an increase in the number of online certificates of proficiency (CoPs) around the world, including the Training Development Agency for Schools (TDA), the National Institute of Adult and Continuing Education (NIACE), and the South Australian Senior Secondary Assessment Board (SSABSA). Other successful Communities of Practice are readily identifiable, such as Webheads in Action (<https://webheadsinaction.org>), a community of language teachers and students dedicated to exploring the use of communication technology in their classrooms. Webheads in Action, launched in 1998, is a community that supports its members in testing, exploring, and using technology in teaching. There is evidence of significant online participation, promoting critical practice reflection [64].

On the other hand, Wellman and Gulia [65] and Smith et al. [66] argued that online communities of practice could

TABLE 1: Distinctions between communities of practice and other structures.

	“What’s the purpose?”	Who belongs?	How clear are the boundaries?	What holds them together?	How long do they last?
Communities of practice	To create, expand, and exchange knowledge, and to develop individual capabilities	Self-selection based on expertise or passion for a topic	Fuzzy	Passion, commitment, and identification with the group and its expertise	Evolve and end organically (last as long as there is relevance to the topic and value and interest in learning together)
Formal departments	To deliver a product or service	Everyone who reports to the “group’s manager”	Clear	Job requirements and common goals	Intended to be permanent (but last until the next reorganisation)
Operational teams	To take care of an ongoing operation or process	Membership assigned by management	Clear	Shared responsibility for the operation	Intended to be ongoing (but last as long as the operation is needed)
Project teams	To accomplish a specified task	People who have a direct role in accomplishing the task	Clear	The “project’s goals and milestones	Predetermined ending (when the project has been completed)
Communities of interest	To be informed	Whoever is interested	Fuzzy	Access to information and sense of like-mindedness	Evolve and end organically
Informal networks communities	To receive and pass on information, to know who is who	Friends and business acquaintances, friends of friends	Undefined	Mutual need and relationships	Never really start or end (exist as long as people keep in touch or remember each other)

Source: Wenger et al. [58]. *Cultivating Communities of Practice*, p. 42. Boston: Harvard Business School Press.

not replicate the benefits of physical communities of practice. They defended their position by citing the lack of direct contact between members of the CoP. Nonetheless, advanced modern technologies provide a plethora of synchronous or asynchronous facilities that may help overcome the lack of direct contact between people [3, 67].

1.4. The Limitations of a CoP. Nonetheless, while many authorities and learning organizations have adopted CoPs, there are some drawbacks to their use as a learning method. For example, low levels of knowledge and expertise among members of communities of practice may impede knowledge transfer and experience exchange, leading members to withdraw from the CoP if it does not meet their self-development expectations. In such instances, members resign from the CoP. This puts the CoP in a vulnerable position, as member withdrawal and a resulting lack of participation and overall activity would result in the CoP failing to achieve its objective [68, 69].

A second constraint on the use of CoPs occurs in asynchronous communities, where the speed of technology limits members’ ability to communicate and interact. This results in member dissatisfaction, which results in negative attitudes toward the value of continuing membership. At the same time, synchronous communication may not provide enough time for members to reflect.

2. Research Design

2.1. Sample and Method. The researcher designed the online community of practice and sent invitations for 50 computer science teachers in different regions of Saudi Arabia. Those

teachers were chosen randomly based on the educational supervisors in the Ministry of Education. 12 teachers accepted to participate in the online CoP. Those teachers were from different regions, 8 of them were teachers in the secondary phase, and 4 of them were teachers in the intermediate phase. All of them were males because those who accepted to participate in this long research were from 6 different regions in Saudi Arabia. Teachers interacted with each other for 12 weeks, and they chose the subject they would like to discuss in the online CoP. The role of research in this process was to explore the operation of the online CoP and its effectiveness. The research did observation/monitoring of “teachers” interaction in the online community. The researchers designed semistructured interviews for all participants in the online CoP.

The literature concerning research methods (for instance, [70, 71] mentioned three different types of interviews: structured interview, semistructured interview, and unstructured interview). The researcher adopted a semistructured interview from interaction among participants in the online CoP. The semistructured interview questions were about the effectiveness of online CoP among teachers, whether participation in the online CoP assisted teachers in overcoming problems that they had in their classroom, and explained their feeling and level of contributions to the online CoP and training programs in training centers. They were asked about the development of teaching practice and improvement in reflection. Table 2 indicates the techniques and data source, and the stages involved are described in more detail.

Teachers were given the freedom to discuss whatever they pleased during the CoP. This autonomy was granted to increase teachers’ sense of belonging and ownership, which

TABLE 2: Techniques and source of data.

Method of collection data	Explanation
First one: Online CoP	BuddyPress has been chosen as a platform of LMS. The CoP will provide the first source of data by observing the interaction among members and understanding PD that might be occurred in the CoP.
Second one: Semistructured interviews for all participants participating in the online CoP.	Interview the teachers to determine what changes they have made and also their point of view about adopting CoP as a PD method.
Third one: analyze the educational material participants in the community have uploaded.	Participants in the community will discuss lesson plans, teaching strategies, collaborative learning, and interactive whiteboard (IWB). So, the researcher will analyze these materials.

was believed to benefit their motivation to pursue professional advancement through practice changes. Teachers agreed to publish their lesson plans within the online CoP for other teachers to make comments on, and at the same time, they agreed to give feedback to their colleagues to improve these lesson plans if necessary. Teachers will revise their lesson plans and incorporate suggestions made by their colleagues in the classroom after receiving feedback and constructive comments. This trend continued when they discussed their teaching strategies and used technology in the classroom.

2.2. Data Analysis. The following steps are taken during the data analysis phase of the research: The term “ground theory” refers to “theory derived from data that were systematically gathered and analysed during the research process” [72]. The research methodology will be determined by the nature of the study and the type of research questions it will address [71, 73]. The ground theory was chosen for this study for various reasons. First, the research utilized an online CoP in a real-world setting to collect data in a natural setting. Second, the researcher sought to address the exploratory question of how the online CoP works and how its social interaction can assist teachers in improving their professional practice and reflection. Thirdly, the study assessed the CoP’s potential to assist in professional development, which may contribute to the requirement for professional development programs to adopt online communities as a new approach.

In terms of data analysis, the researcher used Qualitative Analysis Software (Atlas.ti 14) to systematically review the entire transcript of data to identify codes and themes. This method of data analysis is derived from the major themes, which together form the overall picture of the findings that will be presented later. Utilising software in the analysis process is critical for assisting the researcher in interpreting and comprehending the significance of the data [73]. Atlas.ti is unique in that it supports the Arabian languages. Additionally, raw data is retained when comments are made on this product.

2.3. Research Questions

- (1) How does the online CoP contribute to “teachers” professional development, practice, and reflection?

- (2) What are the differences between classic PD in training centers and PD through the CoP?.

2.4. Study Findings. This section of the paper discusses the findings for each question. The following cross-case analysis method was used to identify common themes for all TEN participant cases. This method can better understand how members of the online CoP mobilize knowledge and experiences. Three major themes emerged from the research: development of teaching practice, enhancement of reflective practice, and adoption of the online CoP as a method of professional development.

2.5. Development of Teaching Practice. This study attempted to document the changes in teachers’ teaching that occurred due to their discussions and participation in the online CoP. The teaching practice theme contains two subthemes discussed in the online community of practice. Table 3 summarises the teachers’ contributions to the two major subjects of Learning Strategies and Lesson Plans.

All of the themes and subthemes were derived from suggestions made by online CoP participants. These can be classified as classroom teaching and learning methods. It contains approximately 101 posts. There were 56 posts in the online CoP devoted to lesson plan improvement, with the primary objective to refine the activities included in teachers’ lesson plans and enhance their pedagogical approach. Another section on collaborative methods featured a discussion that included 23 messages. Teachers submitted a collaborative learning plan as a teaching method for discussion in this section, hoping that other teachers would implement it in the classroom. The table indicates that there were not many messages circulated within the online Community of Practice. Still, it must be remembered that the community began from scratch, had a relatively small number of members (12 teachers), and a relatively short period to mature. It takes time to develop a vibrant community with a breadth of experience and various multimedia resources. Nonetheless, based on the volume of interaction, it is clear that there is considerable potential for using the online CoP as a source of professional development.

Indeed, most teachers preferred using the online CoP as a mechanism for sharing classroom experiences, practices, and suggestions for improved performance. Teachers who changed their practice took various positions.

TABLE 3: Teachers' contributions in the online CoP.

Theme	Subtheme	Number of posts
Teaching and learning method	Collaborative methods	23
	Solving difficulties that faced in the classroom	8
	Self-learning method	10
	Change the role of the teacher in the classroom	10
	Attributes of successful teachers	5
	Solving problems related to the curriculum	5
	Management of "students" behavior	20
	Adopted updated technology	20
	Improve building lesson plan	6
	Improvement of preparing lesson plans	Upload practical lesson plan in the online CoP for suggestions
Using advanced technology for preparing lesson plans		20
Total		157

Teacher 1, for example, described his experience in the online CoP by stating that he had changed his teaching pedagogy from a traditional top-down approach to one that required him to collaborate with his students through a collaborative learning method in the class. As he stated:

In my view, working with colleagues is better than working individually particularly in the subject of computer science as its projects may need participation with their peers ... and the instructor plays the role of the coordinator of the educational process ... and train the students how to collaborate effectively with their classmate.

Teacher 1 identifies a shift in his role from being the owner or sole source of knowledge to becoming the manager of the learning process in this comment. This transformation requires adopting a new method of instruction that empowers students to collaborate with their peers in the classroom. In another context, the same interviewee (Teacher 1) stated that he lacks experience with collaborative learning and finds it difficult to manage students when they collaborate with their peers. Still, his colleague (Teacher 2) in the online CoP demonstrates an effective practice based on his experience in his class. This point demonstrates the importance of teachers discussing their experiences and conducting realistic experiments rather than simply having theoretical discussions in workshops or training centres. The research also confirms the views of Corcoran [53] and Goodall et al. [54] that teachers are unenthusiastic about following or implementing ideas presented by external experts or coaches because they perceive those external experts to be unaware of the real difficulties teachers face in the classroom, particularly with applied subjects such as computer science or information and communication technology. Teacher 1 stated in the interview.

When Teacher 3 read the online CoP debate between Teachers 1 and 2, he stated that he "learned about the efficacy of collaborative learning methods," contrary to his prior belief before this discussion in the online CoP.

Teacher 3 reaffirms the value of observing what other teachers do in class, demonstrating that he evaluated the teaching method and the suitability of collaborative learning in his classroom, as a teacher, in disadvantaged areas. This

point demonstrates how concrete examples of various practices being used effectively can aid in the professional development of teachers. This point can be emphasized further when considering that the LMS includes a repository in the online Community of Practice that enables us to review and learn from others' best practices. According to one member of the online CoP (Teachers 4), the primary benefit of the online CoP is that "a good example can be saved, allowing me to return in the future." This point corroborates Wajnryb's [74] assertion that good CoP can serve as various learning tools.

On the other hand, Teachers 5, 6, and 7 demonstrated no change in their practice. Teachers 5, for example, raised no concerns during the online CoP. He defended himself by stating:

... no benefit for professional development in my career also ICT book did not update, so why do I need to develop? Development should start with the curriculum. In my belief we 'do not need Professional Development programs or sessions.

Teacher 8 is indicating at this point the role of educational policies in teacher professional development programs. Additionally, he believes that the curriculum should be updated first to motivate teachers to participate in professional development. Otherwise, in his opinion, there is no reason for PD. This argument supports that the curriculum should be central to teachers' professional development and the importance of integrating curriculum and professional development as recommended by [75]. This is required to use the online site [76].

It can be seen that teachers who made changes to their practice, those with limited experiences, such as Teachers 2, Teacher 3, and Teacher 12, made more changes than teachers with extensive experiences, such as Teacher 5, Teacher 6, and Teacher 7. This finding emphasizes the distinction between new teachers and teachers who can be considered experienced. According to Day and Gu [77], experienced teachers are more receptive to implementing changes in their practice. However, the current study's findings contradicted their position. Nonetheless, this result could be attributed to the fact that the online CoP had a limited number of

teachers, totaling only 12. This was a point raised by several highly experienced teachers, including Teacher 2 and Teacher 10, who both suggested that the online CoP should include more experienced teachers to increase its effectiveness and utility. Indeed, experienced educators may persuade new educators to adopt innovative practices.

2.6. Improvement in Reflection. This section discusses the increase in members' level of reflection following their participation in the online CoP program. Online Communities of Practice facilitate the exchange of ideas and the solicitation of feedback from peers, both of which contribute to deeper reflection. However, online CoP does not guarantee reflection. It is necessary to discuss the issue of interest sharing among members of online CoP to motivate members to participate in these discussions and activities, thereby laying the groundwork for improvements in reflective abilities. As a result, members were encouraged to reflect on their actions within the online CoP during the interviews. This section examines the level of teachers' reflection resulting from the programme.

According to Van Manen's [78] theoretical model, reflection occurs on three levels. The first level of rationality is technical rationality, which is limited to recall. The individual remembers or acts on what others have said. There is no in-depth reflection, only a repetition of what has been said previously. Van Manen coined the term 'technical reflection' to refer to this. At the second level, the learner shifts focus away from what others have said about the subject under discussion and toward determining whether or not what they have said applies to their situation. At this point, the learner can assess their situation and modify other people's experiences to make them more applicable to their situation or reject them as unsuitable. The final level of reflection, critical reflection, emerges from this level of reflection. When learners reach this level, they have developed into critical thinkers capable of justifying their decision to incorporate or reject other people's ideas into their practices. Additionally, the critical thinker can identify alternative solutions or novel applications pertinent to their situation.

The purpose of this paper is to compare one subject discussed in the online CoP (collaborative learning) to demonstrate the level of reflection and, as previously stated, the interaction among teachers with what they said in their interviews.

Teacher 2 was the first to create a practical lesson plan utilizing the online CoP's collaborative learning method. Teachers 1 responded as follows to Teachers 2.

... I have a problem in the class in terms of applying a visual basic with my students. I wish to follow the collaborative learning method discussed by my colleagues in the online community, but my problem is how to do in kind of subject, I have no idea. Any suggestion or practical example in your classroom!

Here, Teacher 1 demonstrated how he applied collaborative learning in a real-world situation. However, he

encountered some obstacles, indicating the second level of reflection. He was not under the impression that solutions would emerge from his experience and circumstances.

Additionally, Teacher 4, as another example, stated that he had downloaded collaborative learning materials from the online CoP and intended to use them in the future. In these instances, Teachers 8 and 11 demonstrated the least amount of reflection by recalling colleagues' experiences in the online CoP without making any changes to make the lesson more applicable to their context. Teacher 8 as a whole was impacted by his lack of motivation. As he stated plainly, "there is no difference between teachers who make an effort to improve their teaching abilities and those who do not." This belief influenced him significantly, as evidenced by his low level of contributions to the online CoP, and this position aligns with what Williams and Burden [79] report; there is growing evidence that teachers are profoundly influenced by their beliefs, which in turn influence their values and professional identity.

As might be expected in online communities, reviewing the contributions of a few teachers revealed no evidence of in-depth reflection, either in their contributions or during their interviews. When I reviewed their profile, I realized that they may have believed they possessed the highest qualifications in their community, which is true, and thus believed they had nothing to learn. As a result, these three teachers advocated for the inclusion of more experienced educators. However, Teacher 2 demonstrated an unwavering willingness to share his experiences with others when he stated, "I attended numerous professional development programmes that exposed me to enormous experiences." This finding corroborates Rice's [80] finding that veteran teachers are less affected by professional development programs than less experienced teachers.

In terms of reflection, Ameen exemplified the effectiveness of the online community by progressing from simply reading about a new method to adjusting it after encountering difficulties implementing it in class. Throughout this process, Teacher 12 attempted to incorporate some ideas that might have aided him in overcoming some obstacles in the classroom and adapting the method to his circumstances. Additionally, he sought to conduct a formative assessment of the new method's impact on his students' outcomes. Through his actions, he exemplified a deeply reflective process that began with his experience, progressed to some discussion of that experience, reexamined that experience in light of new knowledge, and concluded with creating a new experience. After this reflection process, Teacher 12 stated that "joint learning with colleagues who share an interest would be a better method, particularly in computer science."

Additionally, Teacher 9 referred to the discussion about collaborative learning. He attempted to implement the method in his classroom but encountered some obstacles. To overcome this, he asked his colleagues in the online community for assistance. Teachers 1, 2, and 10 provide him with some ideas that may assist him in overcoming these obstacles regardless of the environment or circumstance. On the other hand, the second colleague stated that no single

TABLE 4: Teachers' contributions in the online CoP vs training center.

Code of teachers	Number of hours for professional development		Number of discussion groups that they have been contributed in	
	In the training centers during this year	Time spent in the online community	In training centers	In the online community
Teacher 1	20	50	None	8
Teacher 2	30	80	None	12
Teacher 3	10	43	2	9
Teacher 4	5	35	4	12
Teacher 5	15	15	2	2
Teacher 6	10	1	None	2
Teacher 7	10	2	10	1
Teacher 8	0	1	0	0
Teacher 9	10	40	1	9
Teacher 10	10	38	2	7
Teacher 11	0	1	None	1
Teacher 12	0	1	None	1

strategy was appropriate in all circumstances. Teacher 9 indicated that he intended to consider these suggestions. He chose to determine what was appropriate for his class. After a month of experimenting with these methods, Teacher 9 concluded that “no single instructional method is appropriate for all lessons in the book... The teacher should use various teaching methods depending on the subject’s nature.”

The final quotation demonstrates Teacher 9’s high level of reflection, as he understands how various teaching methods work in his classroom after considering the issues and experimenting. Teacher 9 recognized the limitation of using a single method, as it may not apply to all classes or subsubjects.

2.7. Adopting the Online CoP as a Method of Professional Development. The distinction between CPD is that it is conducted online via the CoP. CPD programs conducted in training centers can take a variety of forms. It can be observed by comparing a teacher’s contributions to both types of professional development. Second, it can be observed how teachers collaborate and communicate in the online community and in the training center, where the potential for interaction is more tightly controlled. These distinctions are detailed in Table 4.

According to the above table, teachers’ average time in the online CoP was more than double the amount spent by teachers in training course centers in the preceding years. Teacher 10 spent 80 hours during the three months in the online CoP but did not attend any training courses at the training centres. On the other hand, the table indicates that Teacher 10 participated in eight discussion groups within the online community; similar differences are visible in the preceding table for Teachers 7, 9, and 12.

There was no such variation for Teachers 8 and 11. Both Teachers 9 and 11 lack a professional identity, which results in a lack of desire to expand and improve their practice, thereby preventing them from engaging with the online community and other forms of professional development. Indeed, Teacher 8 cast doubt on the value of CPD, stating

that “the primary benefit of professional development in training centers is the opportunity to get out of school and break the daily routine.”

2.8. Limitations of the Research. The most significant limitation that could occur is researcher bias, as the importance of my role as a facilitator and as a researcher provided me with abundant qualitative data, which is critical for understanding the changes and improvements that may occur in the online community, as well as for following the journey of development for online community members.

The second limitation is the online community’s brief lifespan; however, this occurred due to the length of the academic semester and the threat of teachers moving from one location to another, obstructing the tracking of teachers’ professional development.

3. Conclusion

It has been established that an online community can be a precious source of professional development for teachers, given that the community contains a diverse group of individuals who share the same interests. Teachers, particularly those knowledgeable about sophisticated technologies and part of a new generation of technology, can benefit from participating in an online community as a method for professional growth. Teachers gain real-world and practical experience by participating in the online community instead of theoretical difficulties in professional development that may be covered in other forms of professional programs. The new technology creates a huge resource bank that allows academics to trace the journey of learning that takes place in the community as it is being implemented. In addition, the online community enables us to conduct a formative assessment for professional programs, which saves both money and time while also allowing us to understand better the actual professional needs of teachers and how they would be provided to them.

This research makes a twin contribution to the field of online education; first, with the BuddyPress page, and

second, through the shared objective of the artifact creation page. In the future, studies might be carried out on a bigger scale to investigate the intergroup interactions that occur during the formation of CoPs. Furthermore, medical surveys with members of online groups may be obtained for the purpose of conducting qualitative research and thoroughly investigated in relation to the interaction status in the group. It is feasible that by extending the duration of the study over a longer period of time, it will be possible to discover shifts in the roles that the participants play in the process of establishing a CoP. We have high hopes that the outcomes of this research will, via the use of practice exercises, be able to give insights as well as new approaches to the use of Facebook in adult education. Comparisons of the procedures involved in the creation of CoPs may be made using the varied characteristics of the various social media. In further research, it may be possible to focus on a specific aspect of the Community of Practice (CoP) and investigate the variables that influence the growth of the associated dimension throughout the formation of the CoP. In addition, Community of Practice formation processes might be investigated in the future based on interactions between students, learners, and lecturers and between participants and material.

Several recommendations are made for different types of readers who may be interested in the research to maximize the benefit of the study.

4. Recommendations

The study recommends that practitioners should develop a reward system to involve the participation of teachers in the online community of practices to be considered part of the training programs accredited by the Ministry of Education. The teachers should be empowered to design professional development programs that motivate them to be more active and create their identity and belonging.

The study further recommends that the researcher should be aware of the impact that may occur if he is a facilitator for the online community in terms of members' contributions. The participants who take part in the online community are very important. Without that, the researcher may get unreal results, especially with the rapid update that takes place in a new generation of technologies.

The current research attempts to contribute to teachers' professional development because teachers lead the way towards 21st-century education, particularly when the professional development is adopted via a new generation of technology, as the current research did. The research shed light on the importance of encouraging teachers to work collaboratively with their colleagues who share the same interest and passion, which may finally lead to the spread of knowledge in society and investment in social media.

4.1. Future Research

- (i) The research was conducted with teachers only. Therefore, it might be useful to implement the same

approach with others in the educational field, such as principals, educational inspectors, and trainers.

- (ii) The research was applied in a limited time, so the recommendation would adopt for a long time, which would provide a deeper understanding of the impact of social theory in the field of professional development was limited to three months due to restrictions on time and resources.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethical Approval

The committee of research ethics of Prince Sattam bin Abdul-Aziz University duly approved it. Therefore, it is attested that the study was performed fully in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Conflicts of Interest

The author has no conflicts of interest with any individual or organization.

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