

Original Article**Experiencing Collaborative Professional Development in a Blended CALL Teacher Education Course****Fatemeh Nami**

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Received: 2020/06/22**Accepted:** 2021/10/22**Abstract**

Years after the first coinage of the term blended or hybrid learning, this mode of learning and its related courses and programs are still widely underexplored in the context of CALL teacher education. In an attempt to shed more light into this research base, the present case study focuses on the potentials of collaborative learning experiences in a blended teacher education course for developing English as a foreign language (EFL) teachers' pedagogical knowledge of CALL. Five female Iranian EFL teachers participated in the study and were engaged in different types of classroom collaborative discussions and tasks. An analysis of in-class collaborative tasks revealed that collaboration in online and face-to-face learning contexts significantly contributed to the development of different aspects of teachers' knowledge of CALL integration.

Keywords

Blended learning, CALL teacher education, Collaborative learning, EFL teachers.

Introduction

There Considering the pivotal role language teachers play in effective integration of technology into their instruction, the future of computer assisted language learning (CALL) is generally believed to be tied to their preparation [1; 2; 3; 4]. Parallel with the growing application of educational technologies for language instruction [5], the number of CALL teacher education courses and models continues to soar.

Although the ultimate goal of CALL teacher preparation is enhancing teachers' knowledge in technology-enhanced language instruction [2], the results are not always promising [6]. As Baran and Cagiltay [7] note, although today's teachers can be considered more computer literate compared to their colleagues in the past, many do not have adequate knowledge for integrating technology into their instruction. In the absence of relevant guidelines for CALL [8], teacher preparation courses appear inadequate due to a decontextualized or dysfunctional preparation [9] which cannot be extended into teaching as it does not enhance teachers' knowledge of how, where, and when to use technology for language teaching [2]. Inspired by constructivist views, Willis (2001) argues that learning any topic in a decontextualized manner would not be fruitful. There is also a risk that the introduced tools soon become obsolete, due to the constantly changing face of technologies [10].

Hence, CALL teacher education needs to extend beyond teacher-centered learning environments where the mere focus is on transmission of the knowledge about technology per se [11; 12]. In addition, CALL teachers need to play a more central role in their preparation [13; 14]. Inspired by social constructivist theories of teaching and learning [15] and the concerns regarding the dominance of conventional teacher-centered approaches in CALL teacher education, Wang, Chen, and Levy [14] highlight an important construct for effective teacher education, i.e. collaboration. Inspired by the social constructivist view of learning/teaching [15] and collaborative principle of teacher education proposed by Wang, Chen, and Levy [14], the present

study features an attempt to move beyond stand-alone-technology courses in which the knowledge about technology is merely transmitted by teacher educators in a teacher-centered learning environment. This was attempted by providing opportunities for teachers to practice using technology in a collaboration-oriented context.

Literature review

Theoretical grounding

Social constructivist theory of learning is built on the idea that effective learning takes place when learners are provided with opportunities to mindfully develop their understanding and apply their obtained understanding in practice. In addition, such an understanding is not developed in isolation from the external world [15], rather by active participation in a learning process both individually and socially by constructing meaning of the world through collaboration [16]. In other words, participation in a social learning environment and collaboration with peers is believed to facilitate teachers' learning process and knowledge construction [17]. Thereby, as a theory of learning, social or Vygotskian [15] constructivism situates teacher learning in constructivist strategies of structured collaboration.

Following a social constructivist theory of teaching and learning as the guiding principle, the main concern then becomes designing a teacher education program or course which engages student teachers in a process of learning and constructing knowledge through collaboration and with the help of other teachers [18]. Furthermore, in line with Wang, Chen, and Levy [14], it is suggested that collaboration is essential for effective CALL teacher education and should therefore be extended to embrace the whole preparation period. While some research preserves collaboration only for the actual classroom practice phase, collaboration in the CALL teacher education course described in this paper flows through all stages of teacher education, i.e. instruction, technology practice, and actual CALL practice. Passing through these stages, teachers are expected to develop an operational understanding of how to integrate technology into language instruction (pedagogical knowledge of CALL).

Collaboration and CALL teacher education

In addition to the theories and models discussed earlier in this chapter, two main strands of research informed the inclusion of collaboration in the proposed model. The first research strands relate to teacher education, while the second source of data is obtained from CALL professional development research. Today collaboration is regarded as an essential component of teacher development [19]. The concept has been widely discussed in teacher education and CALL literature over the past decades [20; 19; 21]. An extensive literature exists on the potential of collaboration for promoting practice and professional growth [17; 22; 23].

Inspired by Vygotsky's [15] social constructivism and sociocultural views about learning, it is argued that knowledge is better constructed and developed through joint effort [24]. Given the social nature of the learning process [25], teacher learning and the teaching profession are respectively and essentially social and collegial [91; 21]. To achieve sustained and meaningful professional learning, teachers are required to collaborate and learn together [23]. Hence, collaboration can be considered as an essential ingredient and pedagogy of teacher education [22; 6; 26]. In other words, collaborative professional development is more likely to result in better teaching preparation [22; 27]. Likewise, Bolam et al. [28] include collaboration amongst the eight qualities for successful teacher learning.

To be effective and transformative, practice is believed to be accomplished collectively [29]. As Jonassen and Rohrer-Murphy [30] postulate, "very little, if any, meaningful activity is accomplished individually" (p. 67). Through collective effort, learners are believed to find the opportunity to evaluate and refine their knowledge and understanding [31] and develop more knowledge about and ability to solve problems which are less likely to be solved if approached

individually [17]. Exploring the determining role of experience in teachers' professional development, Antoniadou (2011) highlights the impetus of collaborative learning for expanding teachers' pedagogical and technological skills and competences [19; 33].

Extending the discussion into CALL teacher education, Wang, Chen, and Levy [14] argue that in the context of the constantly evolving nature of technology, teachers are more likely to encounter less self-doubt when learning in a collective and supportive environment [34]. As noted by Day (1993), through learning and working together, teachers develop a feeling of trust. In addition to lowering the affective filter, collaboration is suggested as a desirable strategy for promoting teachers' technology-related knowledge and skill [36; 37] and their ability to teach with technology [24].

In a study, Polly (2011) engaged 16 elementary school teachers in collaborative learning activities in a five-day summer technology camp. Participants collaboratively developed technology-rich instructional materials like a curriculum map using Web 2.0 tools such as Google Documents and wikis. The findings indicate that participating in these activities, teachers developed their knowledge of technology, pedagogy, and content. In the same vein, Ernest et al. [39] explored 20 language teachers' online collaborative learning in a small-scale professional development program at two distance universities. The project aimed to improve teachers' awareness of the contributing skills for effective collaborative learning. They concluded that teachers should experience collaboration to learn about the challenges and merits of the technology. In another study, Dooly [40] investigated the impact of teacher education course on Spanish teachers' technology use in language teaching. Unlike previous studies, Dooly [40] offers a look at the role of collaboration on teacher development by including the discussion of teacher perceptions and self-efficacy. Rather than providing technology training, participants (39 novices and 5 experienced teachers) were engaged in hands-on experiences and collaborative projects such as creating web portals. Dooly [40] observes that participation in hands-on, collaborative, network-based projects and materials development significantly contribute to teachers' technology-related competencies.

CALL teacher education in a blended learning context

Along with the surge and advancements in information and communication technologies (ICTs), namely virtual learning environments, and their use over the past decade, has grown interests in and consensus on their potential for delivery of learning and educational practices across various contexts. Space independence of such environments turns them into an apt choice for educators and learners with inflexible or limited learning hours. As Nami [41] notes, "the rapidly growing Iranian workforce as well as many individuals who are currently occupying different positions in different sectors are widely calling for flexible open courses which are accessible at anytime and anyplace" (p. 286). This quality appears to be of prime significance for those educators and pre- or in-service teachers who should attend teacher preparation and professional development courses and programs. Having a usually busy working life, many of these potential groups of learners prefer to attend courses which offer all or at least some of their session in online mode. Blended or hybrid courses which comprise a collection of online and face-to-face classroom sessions appear to be the best solution of these learners.

A careful review of the available research on hybrid or blended learning contexts, however, reveals a scarcity of research on the impact of learning in a blended mode particularly in the context of CALL teacher education. In an attempt to contribute to this research-base the present study explores the following research question:

-How does collaborative learning in a blended CALL teacher education course impact language teachers' pedagogical knowledge of CALL?

Methodology

A case study research design was utilized to explore the possible impact of in-class collaboration in a blended course on teachers' pedagogical knowledge of CALL. Case study encompasses the detailed analysis of a phenomenon in its real context [42]. Real context, or a bounded system in Cresswell's [43] terms, implies that the case is separated and explored in its real context in terms of place and time.

Participants and research context

Following volunteer sampling procedure, participants were drawn via what Liamputtong and Ezzy [44] refer to as "advertising, requesting people to volunteer to participate in the study" (p. 48). In an attempt to obtain a comprehensive picture of the contribution of collaboration in a hybrid educational context to teachers' pedagogical knowledge of CALL, blended CALL teacher education was focused on in the present study. Participants' age, prior English language teaching and CALL teacher education experiences, pedagogical knowledge of CALL, and teaching context were not controlled.

A total of five Iranian in-service EFL teachers (with an age range of 29 to 50; three MA holders and two PhD candidates) from different educational backgrounds took part in CALL teacher education course. Participants took part in seven face-to-face and six virtual sessions. The sessions usually lasted for two hours. The syllabus encompassed an array of mini-tasks designed by the researcher that asked participants to employ various tools and technologies, write reports, and share the output with the group. Seventy-four technology-related concepts and topics were identified and aligned into the foci of the twelve out of thirteen sessions (the first session was dedicated to the course introduction). The online real-time sessions were held in the virtual classroom of an online learning management system and the face-to-face sessions were held in one of the state universities in Tehran.

Data collection and analysis

To adequately uncover evidence on the way collaboration impacts in-service EFL teachers' pedagogical knowledge of CALL, data obtained from participants' in-class collaborations was analyzed. Drawing on the definition of collaboration in the current project which encompasses participants' joint knowledge construction, negotiation, and reliance on peers, special attention was dedicated to those aspects of participants' oral or written utterances which were directed at peers' questions, expressions of artifacts, and comments.

To examine the contribution of in-class collaboration to the development of EFL teachers' pedagogical knowledge of CALL, the content of classroom discussions during every session was transcribed verbatim. Garrison, Anderson, and Archer's [45] categories of contribution, i.e. triggering, exploration, integration, and solution were applied to distinguish collaborative exchanges in students' in-class discussions. In this categorization, collaboration begins with triggers or student questions that indicate a sense of puzzlement or recognize a problem. It is followed by exploration during which students offer different ideas, personal narratives, descriptions, facts, and suggestions in reference to the posed question. The integration category usually follows the exploration and is characterized by the messages and comments that refer to peers' opinions and aim at building on, adding to their ideas, or developing and justifying tentative viewpoints to move towards a solution. These discussions are finally wrapped up by the propositions which encompass solutions to the posed problems.

In an attempt to understand the quality of collaborations in the blended course, constant comparison method of content analysis was applied. The extracted student questions and responses were analyzed, taking emerging themes as the units of analysis. Exploring the collaborative exchanges in the blended course, 193 thematic units were identified, out of which 91 (47.6%) related to the affordances and/or constraints of CALL, 41 (21.5%) were exchanges

illustrating participants' knowledge of technology (TK), 22 (11.5%) related to CALT, 20 (10.5%) were about CAMD/S, 13 (6.8%) illustrated students' knowledge the affordances and constraints of technology, and 4 (2.1%) thematic units related to technology-related classroom management (see Table 4.20).

Table 1. The frequency and percentages of thematic categories identified in in-class collaborative exchanges

Thematic Categories	Blended Course	
	Freq.	Percentage
Affordances & constraints of CALL	91	47.6%
TK	41	21.5%
Affordances & constraints of tech	13	6.8%
CALT	22	11.5%
CAMD/S	20	10.5%
CACM	4	2.1%
Total	191	100.0%

Results and discussion

Two types of triggers were identified in this study: participant-generated and syllabus-based. The former type was posed either in response to peers' comments and viewpoints asking them to provide concrete examples and justifications or addressed the problems that the participants encountered regarding different tools, concepts, and technologies. In the following collaborative exchange, for instance, Ziba posed a question on Mahsa's comment regarding virtual learning environments (VLEs):

Mahsa: The ability of the problem solving, it is highly increased in VLEs.

Ziba: Problem-based learning? How can u? Would you please provide some examples, Mahsa? (Hybrid course, session five)

The above question is illustrative of the queries which emerged in response to peers' comments. In the second type of student-generated triggers, the question reflected participant's problem rather than response to peer viewpoint.

The syllabus-based questions were posed by the instructor and directly related to the focus of each session. The overall purpose was provoking their critical thinking while engaging them in a process of collaborative learning. These questions usually contained a problem-based scenario related to the foci of the session. Of the 63 tasks highlighted in the syllabus, twelve were problem-based questions each corresponding to one session (from session twelve onwards). These questions were posed drawing on the operational definition of CALL pedagogical knowledge. There were two questions in the syllabus addressing each of these categories, except for TK which was highlighted in three questions. The following question, for instance, aimed at enhancing participants' knowledge of technology (system security):

Mr. Payami commonly uses yahoo email service for both personal and instructional purposes in his classes. He is in the habit of checking his emails simultaneously as he does other stuff on the Internet such as searching the web. He is also very much careful not to open the anonymous messages or clicking on the links in different text messages. However, recently he has encountered a problem. His inbox is filled with various forms of spam messages and advertisements. He is wondering how these companies have accessed his email address. What can be a reasonable explanation? How can it be avoided?

The questions, be it syllabus-based or participants-generated, were followed by peers' responses (explorations & solutions) and comments that aimed at building on previous messages (integration). Since the purpose was exploring EFL teachers' knowledge development during these collaborative exchanges, the instructor usually preserved her comment for the end of the discussions to let participants develop their opinions and solutions. Her final remarks were either in the form of confirmatory comments and positive feedback or as wrapping up messages, recounting the points addressed by the participants in the discussions. During the discussions, the instructor took the role of a facilitator trying to keep the pace of collaboration and involving all participants by comments such as: "What do you mean exactly? Would you please clarify? How?" or "What is your opinion about [Participant's] comment?"

The following extract explicitly echoes Garrison, Anderson, and Archer's [45] categories of collaboration, i.e. triggering, exploration, integration, and solution:

Pari: because he visited different website at the same time that he was using his email. (Exploration)

Jaleh: Maybe because you have subscribed to a website or your emails are not filtered. For instance, my emails are specified into folders. I never receive spam in my inbox. It is moved to spam and is deleted after a few days. (Exploration)

Tina: There is a website that I use to send Cards. When you enter email, it fills the card. I saw that using my nicknames that was private I received some emails which were sent to my spam. So I think this site used my nickname. (Integration)

Mahsa: One point which we do not pay attention to is the websites containing pop-up and pop-under ads. A part of the problem of Mr. Payami relates to this. For example, the sites used for downloading films or the one mentioned by Tina contain pop-up and pop-under. (Solution)

Ziba: So if the email is not opened there won't be any problem. What about other websites that we have bookmarked? (Participant-generated question)

Sarah: Anything you want to download has pop-ups. (Solution)

Tina: this is browser attack not system attack. (Solution) (Hybrid course, session two)

These syllabus-based questions acted as a trigger in this discussion, engaging participants in exchanges, the purpose of which was finding a solution for the problem. Accordingly, two participants (Pari & Sarah) offered ideas and suggestions in reference to the posed question (exploration), which despite not including the correct response further engaged peers in the discussion. Building on her peers' comments, Tina provided an example (integration) which was followed by Mahsa's solution to the problem. The solution was further elaborated after Ziba's question in response to her peer's answer. These elaborations are echoed in Sarah and Tina's responses to the participant-generated question.

Collaborative exchanges which were initiated by a syllabus-based or participant-generated question did not always follow the same order of trigger, exploration, integration, and solution. Some questions received an explicit solution which was further elaborated on by other participants' integrative or explorative comments.

Analyzing the frequency of collaborative exchanges in each session (Figure 1), it was observed that the degree of participants' engagement in such exchanges directly related to the topics and technologies worked on during each session. As illustrated in Figure 1, for instance, the collaborative exchanges were more frequent in sessions 5 and 9 in the blended course during which VLEs and materials development were worked on. The next two were sessions 3 and 13 during which topics related to software type, copyright, digital games, and mobile assisted language learning (MALL) were covered.

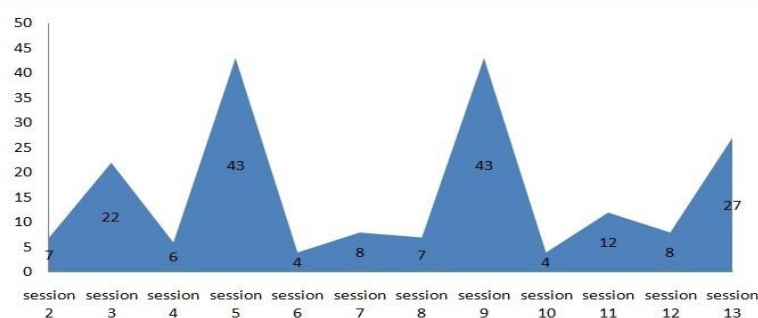


Figure 1. The frequency of collaborative exchanges from the second session onwards.

The results indicated that collaborative discussions engaged participants in dialogic exchanges, the purpose of which was achieving a solution for the posed problem. As Doering and Veletsianos [46] put it, through such exchanges teachers find the opportunity to “problem-solve, share success and failure stories, exchange... ideas, and support each others’ endeavors” (p. 37). It also echoes Vygotsky’s [15] social theory of learning and the notion of zone of proximal development (ZPD) through which learners progress from an actual towards a potential level of development by problem solving and collaboration with more capable peers.

The examples are illustrative of collaborative learning taking place among the participants in the blended course, since according to Wang, Chen, and Levy [14], in such a context, teachers share viewpoints, ideas, and the problems identified in a problem posing/solving process. It also confirms Naylor and Bull’s [47] proposition that teachers appear to be better educators for their colleagues. In addition, collaborating with peers, teachers have the opportunity to gain insights into the topic and/or the problems under the analysis from multiple perspectives [48]. This, as Bordelon et al. [49] note, positively contributes to teacher learning, assisting them to develop their pedagogical strategies.

This diversity of the pedagogical knowledge of CALL thematic categories identified in the collaborative exchanges highlights the potential of interaction for teachers’ pedagogy in CALL. The results, in other words, largely corroborate with the research on collaboration in teacher education and CALL [46; 39; 37; 14]. The findings expand previous research on CALL teacher education by identifying the aspects of teachers’ knowledge which are improved through collaboration and meaning negotiation.

Conclusion

The present study specifically attempted to understand the extent to which collaboration in a blended learning context influence EFL teachers’ pedagogical knowledge of CALL. Through the design and implementation of a syllabus for CALL teacher preparation, the researcher attempted to envisage the topics and concepts that should be addressed in such courses. Drawing on the syllabus, various student-centered tasks were envisioned and trialed to engage participants in hands-on experiences in an attempt to answer the research question.

Notwithstanding the compressed focus of the research cohorts discussed in the previous section, data does underline several issues. The tasks yielded different results on teachers’ pedagogical knowledge of CALL. Extending collaboration all through the teacher preparation period via engaging participants in various types of collaborative practices provided the teachers with an opportunity to learn more about different aspects of CALL including TK, CALT, CAMD/S, and classroom management. When applied together, these strategies complemented one another to develop teachers’ professional growth, i.e. to promote their pedagogical knowledge of CALL.

While, there is no one-size-fits-all, fail-safe methodology for CALL teacher development, insights obtained from the data pinpoint significant procedures that can be applied for technology-related teacher education. These procedures include providing opportunities for language teachers to collaborate through the course of preparation. Building on the results, it is also suggested that each of these strategies can be operationalized in a variety of ways including but not limited to using journals, discussion lists, and lesson study practice.

Given the limited life-span of this dissertation project along with the differences in the availability of technological infrastructure in different teaching contexts in Iran, it appears difficult to predict how this change in CALL teachers' technological knowledge and skills translates into their future classroom instruction. Despite the limitations inherent in this research, the findings are consistent with the common themes in the literature closely enough to provide pedagogical implications that can be noted. The collaborative exchanges through the course of preparation were enriching and enlightening experiences for the language teachers. Engaging teachers in problem posing/solving collaborative exchanges further enhanced teachers' knowledge of why and how of technology use as they were presented with multiple perspectives on the same issue. The success of orchestrated exchange of information through in-class collaboration was evidenced in the empirical data. Thereby, it is anticipated that collaborative learning tasks can be extended into the future CALL teacher education courses and programs as promising spaces for developing teachers' knowledge and experience.

research hypotheses and the effectiveness of multimedia conversational teaching methods, after a while, it was observed that students saw an improvement in their communication skills, and after a conversation with teachers, counselor, principal. As well as the parents of the students, they argued that using conversational style and multimedia teaching to teach communication skills increases this ability in elementary school students so that feedback in social settings Receive positives and prevent them from facing negative feedback and facilitate interpersonal relationships for them. Khazaei et al. [14]; Mourinho, Meyer [20] and Meyer et al. [2] also show the results of the effectiveness of multimedia education in the field of learning and memorization because multimedia as an active and modern educational method with capabilities such as using multiple senses in the process. Education, engaging the learner, flexing the learning environment, paying attention to the specific needs of primary school children are effective. It seems that the reason for increasing the communication skills of elementary school students in the experimental group, in contrast to the students in the control group in this study, is the use of the principle of personalization (conversational style) and multimedia educational. Thus, by using a conversational style, the learner feels that he is talking to the other party in such a way that a social relationship is formed in the learner's mind and he feels that he is participating in a conversation in a multimedia environment and trying to Understand what the other person means. Because in a conversational way, the material is presented in a friendly and informal way so that a social relationship is formed in the students' minds and they feel that they have participated in a conversation, so they try hard to understand the meaning. Which ultimately led to deeper processing by them resulting in better and more desirable outcomes in the learning process. Music was used and required hearing and vision, and students used both sense of sight and hearing to receive information, so elementary school students were taught conversational multimedia after a while. It was reported by parents and teachers that they use words such as please, please and thank you and show polite behaviors such as standing in front of adults and greeting. In studies conducted by Meyer et al. [21] and Mourinho & Meyer [20], the results showed that presenting content in a conversational way, increases learning according to the results of these studies as well as other studies. Like Meyer and Clark [25], he described the effect of personalization as a principle of multimedia design called the "principle of personalization". This principle states that learners learn more when words are colloquial than when they are formal. Meyer and Clark say using the principle of personalization in multimedia educational design encourages students to

process input and use words in a conversational way to learn more. And that conversational skills training can increase social popularity among peers [9].

The study shows that the multimedia approach helps students in learning. [26] [27] [28] [29] They stated that in students, visual and audio stimuli increase the level of learning and play an effective role in academic motivation. has it. And as the research of Schrider, Reichelt, Zander [17] shows that multimedia education in accordance with the principle of personalization (dialogue) is more stable than education in the formal format, which is also consistent with the results of research [10].

Tsayang and Tutf [22] also emphasized the positive impact of indigenous (culture-based) multimedia on increasing elementary school students' creativity in a study entitled *Creativity in Primary Education: The Role of Multimedia*. In fact, multimedia provides information. In addition to stimulating students' sensory system through images, color, sound, and movement, they are also challenging. Looking at the results of the present study and other researches, it can be explained that computer technologies and educational multimedia change the role of teachers and educators and make students active in educational environments.

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