The Role of Online, Technology-Aided Collaborative Reflective Practice in Triggering and Maintaining Pre-service and Novice Language Teachers' Motivational Resources

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Abstract

Collaborative reflective practice (CRP) is considered a social, dialogic reflective procedure to promote language teachers' awareness and help them expand their motivational resources during their profession through online collaboration and reflection. Hence, this research probed into how online, technology-aided CRP initiated and sustained eight pre-service (four females and four males) and 12 novice (six females and six males) Iranian English-as-a-foreign-language (EFL) teachers' motivation through a qualitative exploratory study. The data from unstructured interviews and discussion groups were analyzed through inductive thematic analysis. The results of inductive data analysis indicated that pre-service and novice EFL teachers gained various social, cognitive, and affective benefits. Socially, the teachers were interactive, collaborative, and supportive to learn from their peers in shared online learning communities. Affectively, they became more engaged, motivated, passionate, and confident. Cognitively, online, technology-aided CRP contributed to the teachers' flexibility and adaptability. The findings suggest that teacher educators implement this mode of inquiry not only to promote pre-service and novice teachers' professional sustainable development but also to maintain their motivation.
Keywords: Technology-Aided Collaborative Reflective Practice, Pre-service and Novice Teachers, Teachers' Motivation

Introduction

In recent years, language teacher education has witnessed several changes in the development of language teachers' knowledge (Hayes et al., 2024). Knowledge and skills are

commonly transferred from expert teacher educators to novice teachers through lectures and other traditional formats (Arefian, 2022a). More recently, teacher training is perceived to include the competencies acquired via reflection, communication, application, and collaboration among peers and colleagues (ElSayary, 2023). EFL teachers need to socialize their practices, collaborate with others, reflect on their experiences, and generate new ideas in their professional training courses. Specifically, pre-service and novice teachers need to learn how to develop continuously, systematically, and collaboratively to facilitate their professional development. One of the most popular techniques for teachers' professional development is reflective practice, which creates ample opportunities for teachers to monitor their practices, become aware of their knowledge, notice their weaknesses, learn from their experiences, and plan to act (Rogers, 2002). Through reflective practice, pre-service and novice teachers can gain agency to bring their theoretical knowledge into practice, observe actions logically, be more self-directed to reform their own practices, and, more importantly, collaborate more dialogically to learn collectively, which appear critical skills needed during the initial years of teaching experience (Yuan & Mak, 2018).

As reflective practice can be a crucial tool in teacher education programs (Nguyen, 2013), teacher educators should prepare pre-service teachers to become capable of utilizing and applying this practical tool in their future practices to learn autonomously and gain feedback from experienced colleagues in a collaborative manner. Hence, CRP can integrate communication and cooperation into systematic reflections within learning-oriented groups (Alvarado Gutiérrez et al., 2019). In this case, pre-service and novice teachers can explore their experiences, practice theories, generate knowledge, and evaluate practices both individually and collectively (Yuan & Mak, 2018). However, the participatory nature of reflection has been partially neglected in the literature and left unsupported due to the constant emphasis on individualistic reflections (Yuan & Mak, 2018). Also, the absence of sufficient training, collaboration, and motivation can be a source of incapability for pre-service and novice teachers to reflect (Ye et al., 2022).

The CRP model, implemented in the current study and proposed by Gellel (2010), triggers reflection in communities of practice through short-lived experiences, social activities, and discussion groups. Thus, CRP fosters interaction enhances teachers' decision-making, and boosts pedagogical effectiveness (Mede, 2010). Also, it can help them illuminate and shape their beliefs, support the formation of understanding and reflection ability in a community of practice, and build on a socio-cultural theory (Daniel et al., 2013; McCullagh, 2012). Moreover, it can transform and enhance instructional practices and critical reflection (Mezirow, 1991; Schnitzler, 2020), experiential learning, personal beliefs and emotions (Kemmis et al., 2014), and contextual atmosphere positively (Tabach & Schwarz, 2018). Thus, CRP can directly or indirectly have a vital role in guiding EFL

teachers' positive emotions, such as motivation, commitment, and mindfulness, among others.

The advent of positive psychology (PP), which emerged from humanism and student-centeredness (Csikszentmihalyi & Csikszentmihalyi, 2006), gave rise to how teachers can thrive internally and focus on their strengths to live happier lives (MacIntyre, 2021). This can happen by shifting their focus from negative emotions, such as stress, burnout, anxiety, depression, pessimism, and skepticism (Benevene et al., 2020) to concentrate more on positive emotions and feelings, including perseverance, confidence, resilience, connection, creativity, enjoyment, and motivation, among others, (Seligman & Csikszentmihalyi, 2014). In this case, EFL teachers, who encounter numerous challenges while working with students psychologically and socially, teaching a second language technically, and using pedagogical content knowledge professionally, need to enhance their affective mood and motivation through enhancing their positive emotions socially and reflectively to become more creative and attentive personally and socially, gain growth mindset and optimism cognitively, and be more engaged and gritty professionally in their teaching practices (Fathi et al., 2023). As the role of positive emotions for EFL teachers has received scant attention, more studies need to cast some light on the role of CRP in their motivation as a crucial positive emotion for EFL teachers in virtual spaces (Kruk et al., 2021).

Hence, experiencing reflective and collaborative learning through CRP can significantly influence pre-service and novice teachers' intrinsic, extrinsic, and altruistic motivation, which are the current forms of motivation adopted in this study, following Ye et al. (2022). While intrinsic motivation is an innate desire and satisfaction derived internally to learn without gaining any rewards, extrinsic motivation underscores the desire to try and work hard to obtain external achievements, benefits, or profits. Altruistic motivation refers to individuals' time and energy in helping others reach greater well-being (Kifle et al., 2022). Accordingly, these motivation types are the most commonly used sources of teachers' engagement in many countries (Brookhart & Freeman, 1992; Kyriacou & Coulthard, 2000). As the high level of motivation in the initial years of teaching experience may be decreased over time, and teachers may lack sufficient motivation to teach initially (Hornstra et al., 2023), pre-service and novice EFL teachers require incentives to maintain and enhance their motivation. Also, CRP can be done during online and virtual interactions with other teachers, which turns out to be approachable, convenient, and time-saving. In this case, pre-service and novice EFL teachers can develop their instructional knowledge, practice, and experiences, foster their personal and emotional traits, such as motivation, transform and reform their previously held beliefs and theories, and learn to possess continuous professional development reflectively and collaboratively through online interactions and technology-aided reflections (Esfandiari & Arefian, 2023). Thus, this study explores pre-service and novice EFL teachers' online, technology-aided CRP processes, applications, and benefits in

motivating them to grow professionally, personally, and socially. In line with the above argumentation, the following research question was investigated in the present study:

> How does online, technology-aided collaborative reflective practice affect triggering and maintaining pre-service and novice Iranian EFL teachers' intrinsic, extrinsic, and altruistic motivation levels?

Literature review

The Role of Online, Technology-Aided Collaborative Reflective Practice (CRP) In L2 Teacher Education Programs

A significant feature of teacher training programs is developing capable individuals to reflect on their experiences and incidents to develop autonomously (Avalos, 2011; Borko, 2004; Harlow & Cobb, 2014; Tan, 2006, 2007), going beyond just receiving theoretical content knowledge from a knowledgeable person through a top-down system. Also, currently, different professional and educational institutions try hard to involve technology-aided professional development programs to save time, cost, and energy for EFL teachers, attract more international audience and participants, run a self-paced learning environment for busy EFL teachers, and enhance EFL teachers' motivation to develop professionally at their convenience (Arefian, 2022b; Monyai, 2024; Tafazoli, 2024). In such a case, reflective practice, defined as a serious, systematic, and mindful mode of thinking conducted analytically through evidence-based investigation (Rogers, 2002; Walsh & Mann, 2015), can help pre-service and novice teachers guide their professional development process continuously after graduating from a teacher training university. Consequently, various reflective procedures have been provided by different scholars, such as productive, descriptive, dialogic, and critical reflection, to proceduralize the reflective learning of teachers (Boud, 2010). Moreover, CRP, the most recent variant of reflection, originated from the Vygotskyan paradigm and shifted towards constructing knowledge and skills socially and collaboratively in communities of practice (Daniel et al., 2013; McCullagh, 2012). Thus, teachers' learning cannot be perceived to occur in a vacuum; it can happen through collaboration, scaffolding, and communicating reflectively and systematically with other colleagues, students, and stakeholders (Vygotsky, 1978).

Specifically, pre-service and novice teachers can do dialogic and collaborative reflection via technological devices with peers and other experienced colleagues to experience transformative learning, greater understanding, meaningful interpretations, and purposeful adaptations and modifications in their professional practices, beliefs, and awareness even when they are out of schools or academic contexts (Arefian, 2023a). The use of technology-aided CRP can guide, develop, and transform EFL teachers' knowledge, actions, and relations online (Kemmis et al., 2014). EFL teachers' knowledge can be enhanced by rigorous reflections to find weaknesses and take action to resolve them while

they are from long distances. Collaborative actions can also be used to learn, monitor, and adapt beliefs and actions collectively in a team virtually. Through social media, EFL teachers can build strong social relations to facilitate connections and rapport with others. Also, they can reach self-awareness and understand the educational members during their first practices harmoniously with few clashes since teachers are systematically guided through online reflections and collaboratively supported through technology-aided interactions (Prilla et al., 2012). Specifically, implementing this novel approach can help pre-service and novice EFL teachers, who are new, lack enough experience, and need adequate scaffolding and support from experienced colleagues and stakeholders, learn how to develop professionally in a continuous manner through a technology-oriented reflective and collaborative learning environment. When they enter an online community through social media applications, such as WhatsApp, virtual online platforms, and other forms of technology, where teachers of multiple and diverse disciplines join, it can be hard for them to interact personally and professionally, share experiences and knowledge, and learn from other teachers with respect online. Therefore, online, technology-aided CRP can fill this gap by connecting teachers of different subjects together within a new and modern learning zone.

Through online, technology-aided CRP, pre-service and beginning EFL teachers can have more profound and critical reflection, express their thoughts and actions clearly, practically activate experiential learning with others, and reflect with peers and mentors systematically within an online learning milieu (Beitler, 2012). Teachers can form an online community of practice to reflect collectively (Clarke, 2009; Tabach & Schwarz, 2018), foster and maintain continuous professional development (Avalos, 2011; Borko, 2004), obtain a professional and collective identity, and provide a motivating, supportive, and safe learning environment (Seaman et al., 1997). Although the advantages mentioned above have been found to be related to teachers' teaching performance variables, such as motivation, socialization, self-understanding, and achievement (Arefian, 2022a), among others, scarce research attention has been devoted to investigating how online, technology-aided CRP influences pre-service and novice EFL teachers' motivation to develop professionally within an online professional development program. Thus, the investigation of online, technology-aided CRP is likely to prove promising in initiating, maintaining, and progressing pre-service and novice EFL teachers' motivation.

L2 Teachers' Intrinsic, Extrinsic, And Altruistic Motivation

Although teachers' beliefs and values have been found to be a crucial source of their attitudes and behaviors that can guide their practices, emotions also can play a vital role in language learning and teaching (Li, 2020), and teachers need to consider the significance of affective aspects in their teaching practices. After an extensive exploration of language teachers' negative emotions, such as disengagement, anxiety, burnout, dissatisfaction, and

dropout (Fathi et al., 2023), EFL researchers and experts who applied positive psychology have shifted their focus and became inspired to delve into EFL teachers' positive emotions, namely pleasure, happiness, enthusiasm, engagement, hope, and motivation (MacIntyre, 2021). Hence, teachers' motivation can be regarded as a primarily important psychological variable for cognitive, social, and emotional engagement, success, grit, satisfaction, and fulfillment, and can be an essential factor in EFL teachers' instructional practices (Jin, 2024; Li & Xu, 2024).

While there are numerous definitions of motivation in positive psychology and education, the general concept refers to a driving tendency, desire, or motive filled with energy (Dörnyei, 2009). Two prominent aspects of motivation include directions toward an external and internal event and the degree of desired attitude (Urhahne & Wijnia, 2023). An individual's motivation will indicate the underlying motive and logic behind choosing something, the duration of continuing activities, and the attempts and energy of performing activities (Dörnyei & Ushioda, 2011). Most notably, the motivation of pre-service and novice EFL teachers in the context of teacher education has been described as "what attracts individuals to teaching, how long they remain in their initial teacher education courses and subsequently the teaching profession and the extent to which they engage with their courses and the teaching profession" (Sinclair, 2008, p. 37). Also, motivation is operationalized as intrinsic, extrinsic, and altruistic in this study. Hence, motivation can be affected intrinsically through possessing an interest in something personally, through a supportive, friendly, and safe environment socially and contextually; and with the emphasis on long-term engagement, motivation can also be extrinsically oriented to receive a concrete benefit (Arefian, 2023a; Dörnyei & Ushioda, 2011). Finally, altruistic motivation underscores the tendency to devote oneself to the success and achievement of others.

Moreover, according to OECD (2005), motivation features and factors are associated with the capacity to be mentally and cognitively satisfied and have social contributions (Watt & Richardson, 2008). More comprehensive, influencing factors affecting teachers' motivation in teacher education can be professional aspects: professional learning (improvement and relations) (Sinclair, 2008), environmental dimensions (atmosphere and support) (Brookhart & Freeman, 1992), intrinsic benefits (possessing self-evaluation and mental incentives) (Richardson & Watt, 2006), and extrinsic advantage (finance, community, and social support) (Brookhart & Freeman, 1992).

Pre-service and novice EFL teachers tend to become more intrinsically, extrinsically, and socially motivated through CRP. Hence, intrinsically, the process involves working with others socially and systematically, showing and observing others' enthusiasm and commitment in an online community of practice (Baleghizadeh & Gordani, 2012), learning from one's own actions, and gaining feedback from others with acceptance, and reflecting to change and transform their own practices with enthusiasm through a technology-aided

environment. Extrinsically, teachers can publish and present in different formal and informal journals and events, gain recognition from the educational public, and achieve a profit, a reward, or a gift within an online community. Altruistically, teachers can add empathy and compassion to their teaching practices, devote time and energy to enhancing learners' achievement, and exert more energy through technology-aided interaction (Burks & Kobus, 2012). Although a few previous studies have investigated the social aspects of reflective practice, the influence of online, technology-aided CRP on teachers' motivation has been considerably ignored (Arefian, 2023a). Therefore, this study qualitatively explored the experiences of some pre-service and novice EFL teachers' online, technology-aided CRP in motivating them to develop professionally (Beahm et al., 2024).

Method

Research Design

A qualitative exploratory case study was selected to investigate and explore the challenges, benefits, and feelings the language teachers experienced dynamically during their practice (Pacho, 2015). Exploratory case studies are valuable to obtain a more in-depth understanding of a complex problem, incident, or event (Ponelis, 2015). This leads to a greater awareness of the phenomenological and contextual factors. Comparing and contrasting pre-service and novice teachers in terms of perceived challenges throughout instructional experiences were described in detail. As the researcher's interpretation plays a significant role in qualitative research, unstructured interviews were used to fill this gap since they offer self-report descriptions of participants (Ary et al., 2010). Thus, this case study explored how online, technology-aided CRP could foster and maintain pre-service and novice EFL teachers' intrinsic, extrinsic, and altruistic motivation in Iran.

Participants and Setting

In this research study, eight pre-service (4 females and four males) and twelve novice (6 females and six males) Iranian EFL teachers were chosen through a purposive sampling to provide rich and saturated data and enhance the vivid vision of a particular setting (Ary et al., 2010). Thus, 25 pre-service and novice teachers were initially invited to participate in the study, and only 20 were accepted to join the project voluntarily. They all lived in Tehran (the capital of Iran), and their ages ranged from 19 to 26 (M = 23). The pre-service teachers' experience was only up to 1 year, and the novice teachers' had 1 to 2 years of experience. All pre-service and novice teachers were EFL teachers who had studied or graduated from Farhangian teacher training universities dedicated to training teachers for the Ministry of Education of Iran and majored in Teaching English as a Foreign Language (TEFL). Table 1 describes the demographic information of teachers.

Table 1

L2 teachers' breakdown of demographic information

Status	Gender	Age	Level of experience
Novice Teacher 1	Male	19	2
Novice Teacher 2	Male	19	1
Novice Teacher 3	Male	20	2
Novice Teacher 4	Male	25	1
Novice Teacher 5	Male	23	1
Novice Teacher 6	Male	20	2
Novice Teacher 7	Female	20	2
Novice Teacher 8	Female	24	2
Novice Teacher 9	Female	23	1
Novice Teacher 10	Female	20	2
Novice Teacher 11	Female	19	1
Novice Teacher 12	Female	20	1
Pre-service Teacher 1	Male	19	-
Pre-service Teacher 2	Male	24	1
Pre-service Teacher 3	Male	26	-
Pre-service Teacher 4	Male	19	1
Pre-service Teacher 5	Female	20	-
Pre-service Teacher 6	Female	21	-
Pre-service Teacher 7	Female	22	1
Pre-service Teacher 8	Female	19	-

It takes four years to complete a Bachelor's degree before starting a school career. Pre-service EFL teachers were studying at Farhangian Teacher Training University in Iran and were in the third or fourth year of their university training. After graduation, they will be sent to the public and private sectors to teach English. Also, novice EFL teachers graduated from teacher education programs, and their experience ranged from 1 to 2 years because researchers have argued that novice teachers' years of experience tend to be fewer than two years (Gatbonton, 2008; Rahimi & Zhang, 2015). In teacher training programs, pre-service and novice EFL teachers had general language proficiency and skills, pedagogical content

courses, psychology of learning and teaching, education, assessment, research, practicum, and other teaching and learning-related courses. Reflective practice is essential in Iranian EFL teacher training programs and courses. Teachers are usually trained during their practicum or courses to reflect on their new experiences, and a supervisor guides their practices.

Data Collection and Analysis

In qualitative field notes, a few potential participants should be selected to offer rich, individualized, and particular data and be observed and monitored for practice patterns in a particular event (Ary et al., 2010). This study began with a course to train the teachers to conduct online, technology-aided CRP and work in online teams with other teachers from January 2022 to May 2022. The training included two one-hour-long separate online sessions, and the second researcher did the training. The training sessions included a thorough understanding of different reflective tools and the required knowledge, procedures, and processes of implementing online, technology-aided CRP with others. The teachers learned how to observe others, plan in a team, reflect collaboratively, act jointly, and change collectively through an online learning environment. All were present during the online sessions, and at the end of the term, they had a question-and-answer section and a short quiz to solve the problems related to its implementation, procedure, rules, and practices. Subsequently, after the training sessions, the teachers were guided and supported through social media applications (mainly WhatsApp), with the researchers available to answer the questions related to any perceived concerns online. Accordingly, the researchers randomly placed them into four virtual groups (each group with two pre-service and three novice teachers) to conduct online, technology-aided CR through online discussion groups via WhatsApp. They had to follow online, technology-aided CRP within their online discussion groups, practice together in their educational and institutional contexts, and reflect individually and collectively through technology for two months. Teachers were seated for four conversation sessions (each for one hour) through an online discussion group (Ary et al., 2010; Dornyei, 2007).

Additionally, the second researcher and a supervisor partially monitored and guided the virtual groups in case of any problems and collected the data through field notes. The focus was to understand how online, technology-aided CRP made teachers more motivated intrinsically, extrinsically, and altruistically implicitly from their experience. After that, they were given time for a 15-minute unstructured interview with open-ended questions adopted from the literature. Teachers were asked, for example, to respond to the following interview questions: (1) Can online, technology-aided CRP help you become more motivated from your perspectives? Please explain it; (2) can you trigger and maintain your motivation through online, technology-aided CRP? In what ways? and (3) Can you identify some sources

of motivation when you are engaged in online, technology-aided CRP? They used English to express themselves and talk during the process, and their native language (Persian) was also used during the data-gathering process.

The researchers transcribed and translated the collected data from Persian to English to analyze and categorize them thematically. Another external translator checked the quality of the translation by checking the content, accuracy, and correctness, and it gained 95% interrater reliability. After solving the identified problems related to translation, the data were analyzed through reading it numerous times by the researchers to identify the key concepts. Then, the categories were extracted and linked through coding, and the sub-categories were put together under another major category or theme (Strauss & Corbin, 2008). Once we decided to check the interrater agreement of the coding process, a Ph.D. holder in applied linguistics analyzed the findings and reached 90% agreement. Also, further investigations (rechecking transcripts, coding, categorization, etc.) provided the foundation for achieving more reliable and valid data.

Findings

Personally, Socially, And Professionally Motivated Teachers

The analysis of interview data showed that online, technology-aided CRP helped novice and pre-service teachers to develop personally, socially, and professionally. On the personal side, it increased their self-confidence and motivation to monitor, adapt, and change practices since the teachers learned how to reflect on their practices to identify weaknesses, devise plans, modify actions, and collaborate with others professionally to contribute to shared understanding and collective awareness within an online setting. For instance, pre-service teacher 1 noted, "*I became interested when I noticed that my personal and instructional beliefs and values of teaching can be identified and changed through reflecting and collaborating dynamically and virtually.*" Online, technology-aided CRP practices also lowered the teachers' anxiety and increased their motivation by working actively in an online stress-free atmosphere. Thus, online collaborative and reflective learning environments effectively lowered anxiety, stress, and negative emotions, enhanced motivation through receiving constructive support and feedback from others, sharing responsibilities and working in a team, and gained a growth mindset view towards instructional practices through a virtual setting. Novice teacher 3 has the following: "*I could make sense of collegiality and ownership wholeheartedly as we were a team to think, share, learn, respect, modify, and grow our knowledge and practice together.*"

Online, technology-aided CRP also offered various valuable strategies to meet the needs of the specific setting since teachers reflected on the contextual wants, needs, and desires of students and collaborated with others to negotiate to establish criteria and plan needed policies and actions to answer those needs through online, technology-aided CRP.

Hence, pre-service and novice teachers gradually became flexible and adaptable to change beliefs, practices, and standards with the help of technology. They did so by acquiring how to apply this online collaborative and reflective strategy in their practices, progressively turning out to be open to innovative actions through taking risks and reforming their own practices, and increasingly learning to negotiate personal thoughts and practices with others to achieve collective understanding, as Novice teacher 2 explains it in the following extract.

> *As a novice teacher who is fresh to a real practical teaching environment, the process will be beneficial in letting me become accustomed to the situation quickly and openly. It also gave me high self-confidence because the colleagues I worked with shared their personal experiences with us.*

Socially, novice teachers knew how to interact with other teachers in reflective groups or online communities of practice because they used a systematic collaboration that controlled and guided their virtual social practices with others implicitly. The virtual social practices collectively boosted the teachers' instructional practices by sharing, reflecting, and changing their online practices. Moreover, the teachers expressed their emotions and concerns while interacting with others to direct and self-regulate their emotions to possess more positive emotions. This can lead to increased burnout and attrition among novice teachers, since they can control and regulate their emotions by replacing negative and false judgments with constructive and positive feelings. Also, novice teachers created opportunities for further continuous improvement during online collaborative learning by finding and sharing relevant resources influencing the quality of learning and teaching.

Moreover, they respected others using appropriate language and digital discourse during online, technology-aided collaborations and participated vigorously in an online community of practice. They discerned the power of striking up virtual conversations with others to identify gaps, focus on strengths, have a model, set goals, and use new strategies. Online, technology-aided CRP, therefore, offered an online productive environment where beginning teachers could collaborate with more knowledgeable and experienced colleagues to raise thought-provoking and innovative questions. Moreover, modifying their personalized practices by reflecting on others' instructional practices socially and virtually was another benefit because they could form a professional team to "*learn continuously, and provide each other support and help that could lead to higher motivation*" as pre-service teacher 7 noted. Accordingly, they enjoyed scaffolding and supportive feedback received from more peers to reach their potential development, as is reflected in the tenth novice teacher's observations in the following extract.

> *We constantly evaluated our classroom situation, got guidance from colleagues, and reviewed practices to make changes, if necessary, so that with* online, technology-aided *CR, we could achieve the goal of teaching, which is learners' learning and participation. Hence, it really motivated me personally and socially.*

Professionally, EFL teachers learn from mistakes by reflecting on their initial practical experiences, encouraging them to learn from their own mistakes and learn by trial and error in an experience-based learning approach. Furthermore, online collaboration, negotiation, and prediction of real-class incidents shaped the teachers' beliefs by linking the knowledge of previous to new experiences. The teachers received instructional support from peers and colleagues and improved their quality of teaching and learning by satisfying the needs of the specific contexts. Therefore, teachers prepared for the classes enthusiastically, observed different classes eagerly, recognized and shared problems with other teachers mindfully, sought solutions to perceived issues openly, and enhanced mutual understanding and respect through social media, as novice teacher one observed in the following extract.

> *As I am a novice teacher and lack sufficient professional experience in EFL teaching,* online, technology-aided *CRP encouraged me to adopt a novel approach and method to teaching, gave me opportunities to take relevant actions and learn from mistakes enthusiastically, and enhanced the quality of teaching and learning with eagerness online.*

Virtual collaborative practices helped teachers be motivated, become familiar with their specific, local work settings, adapt personally, professionally, and pedagogically, explore underlying beliefs and assumptions of online learning and teaching, and enhance a positive learning environment. Novice Teacher 10 explains it: "*The* online, technology-aided *CRP helped me learn, develop, and change professional teaching, personality, and approach. This supportive online network was great food for thought and emotion. Also, it put all educational participants together in harmony.*"

Motivational Benefits Gained Through the Effective Implementation of Online, Technology-Aided CRP

Online, technology-aided CRP offers personal, cognitive, affective, social, and professional benefits with the help of social media. As expected, its advantages outweighed its disadvantages, considering improving teachers' instructional knowledge and practices. Teachers became responsive to their previous practices, constructive in reforming practices and improving the quality of teaching, and interested in online professional development professionally. Therefore, teachers were more responsible, motivated, and dedicated to exerting more effort and energy to enhance the quality of teaching and learning emotionally. Also, teachers shared responsibilities with other peers, relating professionally in an online professional community of practice and engaging socially and mentally in their daily instructional practices via virtual apps. This enhanced the quality of independent reflective practice with a more team-and group-based form of online professional development based on motivation.

Teachers also followed a virtual systematic and collective procedure to guide the practices. In addition, establishing better rapport with teachers through online communication, telling stories, having fun, and playing games were the other positive benefits leading to greater motivation to learn in a technology-oriented community of practice. The increase in the quality of learning and education by reformulating professional practices and changing professional identity were other vital benefits since teachers could achieve professional and collective identity to enhance educational practices through technology-based interactions. Online, technology-aided CRP helped them experience a better, social life through interaction with others, respectfully criticizing and helping them improve their critical thinking, and learning how to work their issues out if they were on the other side remotely. However, some co-workers' criticism might not be valid, and feedback may be given cautiously, considering co-workers might be embarrassed. However, online, technology-aided CRP is time-consuming and requires time, commitment, and motivation.

Moreover, it can be time-consuming for some of them due to limited time and discouraging for those who are not adaptable. Also, EFL teachers must learn the rules of working with others in an online community to avoid interruptive disputes or clashes. For example, novice teacher 5 explains the merits and demerits of CRP in the following extract.

Its benefits were improving professional performance and discovering and developing unique professional positions. Additionally, its challenges were the differences and misunderstandings that happened. Some did not tolerate criticism. Some considered themselves flawless. Some did not have group literacy. Assuming all the cases were correct, the evaluation and conclusion were done, and some did not know how to correct and change.

Online, Technology-Aided CRP Enhancing Intrinsic, Extrinsic, And Altruistic Motivation

The virtual social and collective aspects added to technology-based reflective practice revealed significant positive features to teachers, such as becoming motivated to form an online community to develop socially, obtaining more practical teachers' experiences and knowledge, establishing virtual professional relationships, supporting each other, and accepting others' criticism utilizing virtual negotiations. Hence, online, technology-aided collaborative practice can instill intrinsic, extrinsic, and altruistic motivation in teachers by enhancing knowledge, gaining recognition, boosting instructional practices, working with enjoyment, and exerting grit and passion online. This led to the online social construction of teaching experiences and knowledge generation that can be dynamic and nonlinear, as teachers reflect, observe, share, and act continuously and cyclically within an online setting. As stated by novice teacher 9, *"We know that reflection is not just thinking about our actions; cooperation is not just a simple meeting with colleagues. Instead, reflecting cooperatively*

and socially in virtual settings is very purposeful, and in this way, we can continue developing". As a result, pre-service teachers gained numerous benefits from others' online experiences and reflections realized through virtual interactions, which enhanced teachers' motivation directly and indirectly. The encouragement and positive feedback teachers received during technology-aided collaborations, along with virtual feedback on the areas that needed more development, pushed teachers forward to enhance their knowledge and practices.

Moreover, teachers' enjoyment and excitement were enhanced by reflecting and sharing positive experiences within online discussion groups. In addition, supportive teachers' digital talk and discourse through online, technology-aided collaborative reflections triggered motivation to learn, relearn professional knowledge, and do and redo practical practices collectively. Pre-service teacher eight shares his experience of CR concerning professional development and motivation as follows.

> *In every job, people like to be developed professionally. Thus, teaching is no exception. My teaching skills were developed dynamically and socially in an online professional community of practice in which participants came together to learn from others' experiences, knowledge, and help. This could be motivating as we were developed socially, cognitively, professionally, and emotionally.*

Online, technology-aided CRP created good opportunities for teachers to improve their professional career relationships with colleagues. Teachers enhanced their motivation by having a meaningful, focused virtual collaboration to reach their instructional objectives. Secondly, they learned from their successful or unsuccessful practices by noticing pleasant and unpleasant experiences via online, technology-aided CRP to share them openly with others, thereby initiating greater motivation. Since the teachers believed that active online collaboration among them proved particularly important for creating a growth-based learning environment and increasing teacher learning progress, the ecological and contextual features of their specific settings set the ground for enhancing pre-service and novice EFL teachers' motivation. Accordingly, this learning mode allowed them to plan, act, observe, and reflect on their practices collectively, as reflected in the following extract from novice teacher 11.

> *I had my first experience of entering a class and teaching students. When I entered the class, I smiled gently and was very kind. It turned out that students became rude after a while, and the class went out of my control. After that, I consulted other teachers online, collected relevant data, read advice, and implemented it in a class by sharing the results with other teachers. It motivated me to go through this technology-aided professional approach.*

Teachers' motivation is, therefore, considerably affected by online, technology-aided CRP. First, teachers' motivation is initiated by setting goals and objectives and expecting high-quality performance. It made teachers' daily instructional practices more interesting by

shaping previous practices and taking new actions and decisions in response to perceived problems or needs. Secondly, teachers' motivation is continued and protected by working socially, encouraging others collectively, and being supported externally online. Novice teacher eight shared her experience with the researchers: "I think that when I set *personal and professional goals and build some standards for my effective performance, I may become more motivated. Also, my colleagues were really supportive during meetings and discussion groups, which led to the sustenance of motivation".* Hence, online collaboration with other teachers offers encouragement and reward, recognizes novice teachers, makes them more agent and responsible for their practices, and renders teaching an online, technology-aided collaborative practice for them.

Moreover, teachers could perceive their small and big achievements through online, technology-aided CRP, which can motivate them. The appropriate use of online, technology-aided CRP resulted in running more independently guided practices without needing mentors or supervisors. Since teachers were the crucial and active agents in the process, they could run it autonomously quickly. Thus, working in an online community of practice to implement online, technology-aided CRP can also affect teachers' online professional identity by gaining different roles and responsibilities, such as facilitators, knowledge seekers, feedback providers, implementers, monitors, and collaborators. Pre-service teacher 2 has the following to offer regarding professional identity.

> *At first, it was somehow deceptive since I thought it would be boring, time-consuming, demotivating, and unhelpful. Nevertheless, when I experienced this approach, I saw its positive effects, like finding and solving challenges and problems, changing the teaching approach positively, and adopting a professional identity in an online community of practice.*

Also, motivation is affected when teachers think of success and development in their work or become more motivated to achieve greatness with small achievements. Hence, online, technology-aided CRP can satisfy teachers' motivation, gradually leading to outstanding final achievements. Besides, pre-service and novice EFL teachers can teach better and, as a result, be more motivated through CRP. Novice teacher 2 explains this point as follows.

> *The* online, technology-aided *CRP could enrich my understanding of myself and others; after some time, you feel like you do not need a book or course guidance to show you the best way to teach and behave in class. We concluded that when a problem arose, we connected to the same things that happened before and the online feedback and cooperation done to solve that problem.*

However, novice and pre-service teachers stated that the burden of online, technology-aided CRP during their hectic training time could lead to fatigue and boredom as it needed considerable time and energy. Therefore, they suggested a balance be stricken to avoid such

negative feelings. Also, they needed to learn to show more tolerance for others during group work because some of their peers may make negative and destructive comments about their performance. As indicated by novice teacher 4, "*I became exhausted to managing teaching, learning, developing, and so on, so, I guess that* online, technology-aided *CRP should be managed and reduced. Also, there should be a more positive voice in my colleagues' comments without imposing themselves and their ideas.*"

Discussion

This study investigated how pre-service and novice EFL teachers' online, technology-aided CRP could enhance their motivation to grow professionally, personally, and socially. The study's findings showed that teachers received numerous benefits from online, technology-aided reflective practice, such as gaining agency, becoming systematic and inquisitive, helping others, and developing professionally. Online reflection, as the findings showed, can build teachers' confidence in gaining more agency through individualizing their practices by taking the courage to act independently and be accountable. This is an important tool to enhance teachers' positive psychology as they can foster their growth mindset, agency, and ownership. The findings also confirmed that pre-service and novice EFL teachers became autonomous and independent, took action, and reformed practices continuously, which resulted in more motivation as a crucial element of teachers' positive psychology. Thus, online, technology-aided CRP practices improved teachers' self-confidence and adaptability to identify weaknesses, take decisive actions, and enhance their instructional practices. These positive traits motivated teachers personally and enhanced their level of positive emotions. At the same time, the online, technology-aided CRP enhanced teachers' collective agency as a vital factor in boosting collective professional actions. Hence, while enhancing their agentic identities through online, technology-aided CRP, teachers become motivated to change their personal, social, and professional aspects. These findings confirm previous research studies (Hornstra et al., 2023).

More importantly, given the opportunity to apply online, technology-aided CRP, pre-service and novice teachers can form or join an online community of practice where they express their past professional and personal experiences and negotiate their beliefs, practices, and feelings. In addition, they can state their concerns and seek assistance from experts and peers, create a supportive and motivating environment where they care, trust, and help each other, and reflect collectively by observing, monitoring, collecting data, and performing through virtual collaborations. Other studies confirm the significance of reflection on cooperation and collaboration (Arefian, 2022b). Hence, technology-aided collaboration and reflection can boost teachers' positive emotions, namely satisfaction, sense of belonging, well-being, motivation, and so more, to enhance instructional teaching practices collectively by learning to work with others in an online team, learning to use appropriate digital

discourse, reflect on and predict critical incidents, set goals and use new strategies, and support others' weaknesses by constructive feedback or a model. Teachers can also enhance each other's motivation, self-efficacy, and well-being personally as they create a friendly, welcoming online learning environment for their online professional development (Arefian, 2022b; Dörnyei & Ushioda, 2011; Urhahne & Wijnia, 2023). They learn from their mistakes professionally rather than escape them, which can develop a greater growth-mindedness. These positive traits reinforced by online, technology-aided CRP can enhance pre-service and novice EFL teachers' motivation to teach during their first years of teaching careers.

As the study's findings showed, novice and pre-service teachers are motivated to teach intrinsically, extrinsically, and altruistically, which is confirmed in some previous research (Yee et al., 2022). Teachers can trigger, maintain, and develop their motivational resources through this form of development. For this matter, online, technology-aided CRP can offer the initial motivation by setting high goals and expectations to grow professionally by interacting, reflecting, and negotiating practices, decisions, and strategies. Also, it can help teachers sustain high motivation by collaborating and working with others socially, personally, and professionally within a virtual environment (Ye et al., 2022). Additionally, teachers can maintain motivation by positively and constructively regulating their thoughts and emotions positively and constructively. These can lead to greater intrinsic and extrinsic motivation. Also, during their first practice, the theoretical and academic knowledge and support received from teacher education programs should be applied practically in actual classes. Some teachers may be confused, unmotivated, and reluctant to teach because they feel incapable or inexperienced. However, luckily, as online, technology-aided CRP puts theory into practice and theorizes the practices by helping teachers notice the daily teaching practices, they can learn practically and become motivated to be developed in an online professional community of practice (Arefian, 2023a). This can fill novice and pre-service teachers' experience gaps with theoretical knowledge, practical experience, professional behavior, and innovative transformations (Kemmis et al., 2014; Tabach & Schwarz, 2018). The cyclical and flexible process of online, technology-aided CRP enhances teachers' motivation as teachers adopt a growth mindset perspective concerning their online professional development.

Teachers become more motivated as they observe others and show their grit and passion in developing instructional knowledge and practices to enhance their pedagogical knowledge and practice. They can observe their peers' or experienced colleagues' classes, record and observe their own courses, ask questions from mentors and supervisors regarding their classroom practices, and reflect critically on teaching practices collectively using social media (Borko, 2004). They also try to reach professional practice by negotiating their understanding with other, more experienced teachers and changing them constructively online, which can influence their motivation. Teachers can become able to regulate their

emotions and have more positive ones through reflection and collaboration, as they can understand the particular negative emotions, reflect on the causes, plan ahead, act wisely, and receive support to change them into positive ones through the implementation of online interactions (Arefian, 2023b). In this case, pre-service and novice EFL teachers can lower their burnout and attrition rate since they foster their level of motivation by reflecting and collaborating to enhance their teaching practice and knowledge, solve their problems, and take more agency, which is supported by other investigations utilizing technology-based platforms (Yuan & Mak, 2018).

Consequently, when novice and pre-service teachers enhance their practical and theoretical understanding of teaching and learning a new language, they gradually foster their motivation for teaching and learning. Novice teachers become self-directed and independent and do not need a supervisor or mentor to monitor and give feedback constantly. However, they can openly seek help from all educational members and experts to solve their problems and enhance their teaching quality without embarrassment. Overall, online, technology-aided CRP can influence pre-service and novice EFL teachers' motivation differently. Therefore, teachers' important positive psychological traits, such as motivation, cognitive, social, and emotional engagement, success, grit, satisfaction, joy, happiness, and fulfillment, can be enhanced considerably through this mode of online, technology-aided CRP (Arefian, 2023b; Jin, 2024; Li & Xu, 2024).

Although online, technology-aided CRP offered numerous advantages for pre-service and novice teachers' personal, emotional, social, and professional development, it proved tiring, challenging, and complex for some other teachers as they received destructive feedback, lost their face and stuck to the tradition. Experienced teachers may emotionally and professionally impose on novice teachers, forcing them to follow a particular teaching and learning path. Hence, there should be more positive and open-minded feedback from experienced teachers to novice teachers, and novice teachers must show more respect for and express a positive attitude towards experienced teachers' pedagogical, personal, and professional feedback (Fathi et al., 2023).

Conclusion

To develop continuously and professionally, teachers should reflect on their daily practices to gain awareness of their actions, monitor their practices systematically, collect data and guidance from potential resources, and practice novel approaches in classes through an online learning environment. Thus, online, technology-assisted CRP is a professional strategy that assists teachers, especially beginners, build the required practical understanding of their specific setting. EFL teachers may feel tired or burned out during their initial and, possibly, later teaching careers. Here, teachers need a practical approach to trigger and support their motivation. Hence, the effect of online, technology-assisted CRP on

maintaining and enhancing novice teachers can shed light on the processes, applications, and results.

This study qualitatively explored the experiences of eight pre-service and twelve novice EFL teachers. Online, technology-aided CRP has provided practical and valuable opportunities for EFL teachers to strengthen their online professional relationships with colleagues. Through focused virtual collaboration, EFL teachers became able to boost their motivation and work towards achieving their instructional goals. Additionally, they gained insights from both successful and unsuccessful experiences shared via online CRP, leading to a more open exchange of ideas and increased motivation. The active online collaboration among teachers was proven to be vital in improving a growth-oriented learning environment and facilitating EFL teacher development. The unique ecological and contextual factors of their respective online setting have played a key role in enhancing the motivation of pre-service and novice EFL teachers.

The findings of the thematic analysis revealed that CRP helps teachers personally (personality, emotions, and cognitions), socially (inter-personal, intra-personal, and environmental), and professionally (instructional, psychological, and contextual). One major limitation of the study was the impossibility of randomly selecting language teachers. Another limitation was the analysis of teachers' other personal characteristics, such as cognitive styles, in light of teachers' CRP. In the future, researchers may consider selecting language teachers randomly to implement CRP better to understand teachers' motivational incentives and other psychological features.

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