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From Reflective Practice to Teacher Identity Development: A Qualitative Inquiry into Pre-Service Teachers' Human and AI-Enhanced Individual and Collaborative Reflective Practice Perceptions and Experiences

Sakire Erbay-Cetinkaya

Trabzon University, Turkiye, 0000-0003-2594-1205
Corresponding author: Sakire Erbay-Cetinkaya (sakirecetinkaya@trabzon.edu.tr)

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Abstract

The current study aimed at exploring pre-service teachers' perceptions and experiences of a multi-dimensional reflective framework engaging them in individual and collaborative reflection with peers, ChatGPT, and faculty expert through focused observations and critical incident analysis. The results of the larger study aiming at exploring the impacts of the professional development framework were reported somewhere else, yet the current research partially focuses on their perceptions and experiences. The data gathered from a cohort of 33 participants (F=19; M=14) through a self-administered questionnaire were analyzed using thematic content analysis conducted manually first and then with assistance from ChatGPT as a co-pilot to ensure reliability of the former. There was a near-consensus regarding the role of the process to enhance teacher awareness of various classroom dynamics, foster a deeper understanding of their strengths and areas for improvement, i.e., sharpened noticing skills, thereby preparing them for future challenges and fostering the cultivation of a sustained discipline of critical and reflective thinking. Despite those widely acknowledged benefits, they were concerned about time and effort needed, quality and depth of feedback, and structural and logistical challenges. It ends with implications to avoid turning that well-intentioned idea into overwhelming pressure for pre- and in-service teachers.

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Introduction

Reflective practice as the focal point of the current research, stands out on a global scale as an approach to both pre-service teacher training and continuous professional development education (Korthagen & Vasalos, 2005; Zwozdiak-Myers, 2012). The following sections introduces conceptualization, key activities, theoretical framework, and a brief review of the documented literature to provide a solid foundation for the current research.

Reflective Practice: Conceptualization

Originally introduced by John Dewey in 1933, reflection should be understood as the deliberate and thoughtful examination of one's beliefs, assumptions, decisions, and actions to replace routine and impulsive actions with evidence-based actions. In other words, reflective practice is conceptualized as "a cognitive process accompanied by a set of attitudes in which teachers systematically collect data about their practice, and, while engaging in dialogue with others, use the data to make informed decisions about their practice both inside and outside the classroom" (Farrell, 2015, p. 123). Those teachers engaged in such a reflective practice "can develop a deeper understanding of their teaching, assess their professional growth, develop informed decision-making skills, and become proactive and confident in their teaching" (Farrell, 2018a, p. 2). The practice could also help teachers recognize their strengths and weaknesses, i.e., increased self-awareness (Yalcın-Arslan, 2019). Therefore, a reflective teacher could be described as an individual "who critically examines his or her practice, comes up with some ideas as to how to improve his/her performance to enhance students' learning and puts those ideas into practice" (Akbari et al., 2010, p. 212).

One well-known dichotomy related to reflection as a form of critical thinking covers reflection on action and reflection in action (Schön, 1983). The former involves retrospective thinking on a teaching experience after it has occurred where teachers deeply think about the classroom events, reasons for them, and alternatives to improve the situation, which all help future planning. On the other hand, the latter is immediate and real-time reflection where teachers think and adapt to the unexpected situations on the spot. In line with that distinction, the current study primarily engaged pre-service teachers in reflection-on-action through focused self and peer observations as well as critical incident analysis. They were asked to revisit their teaching experiences and moment to learn from them.

Activities Facilitating Reflective Practice

There is a longstanding recognition in pre- and in-service English teacher education that reflective practice could help current or future teachers reshape their professional knowledge and practice (Farrell, 2018b; Zeichner & Liston, 1996). Such practices are valued, for they help teachers free from their routines, which could lead to burnout (Dewey, 1933; Schön, 1983). Some of these practices include keeping teaching journals, forming critical friendship, joining in teacher development groups, conducting classroom observations, and conducting action research (Farrell, 2018b). Among such activities, conducting focused classroom observations and doing critical incident analysis need to be elaborated further, for the current research engaged the participants with them.

Classroom observation as one common procedure to help language teachers investigate their classroom teaching "involves visiting a class to observe different aspects of teaching (Richards & Lockhart, 2007, p. 12). It should be regarded as a way to gather information about teaching rather than evaluate it. It could be divided into two broad categories as self-observation and observation carried out with a peer (Farrell, 2018b). Self-observation involves teachers recording their lesson, utilizing either written accounts or audio or video recording, to reflect upon their own teaching. On the other hand, the second category requires the need of a peer to revise and reconstruct one's own teaching. Whichever form is preferred, research has highlighted several benefits of the procedure, as synthesized by Farrell (2018b, p. 173):

- A way of developing self-awareness of one's own teaching.
- A means of collecting information about teaching and classroom processes.
- A way of examining classroom events in details.
- A chance to see how other teachers teach.
- An opportunity to get feedback on one's teaching.
- Observer sees how another teacher deals with many of the same problems that he or she faces on a daily basis.
- Can collect information about the lesson that the teacher who is teaching the lesson might not otherwise be able to gather.
- Observer sees the teacher using effective teaching strategies that the observer has never tried.
- A mean of building collegiality in a school.

Focused observation should be understood as a targeted form of observation with a clear focus where teachers examine specific pedagogical elements such as teacher action use, teacher instructions, forms of questions, student interaction, to list but a few (Richards & Lockhart, 2007).

On the other hand, as Tripp (2012) notes, the concept critical incident should be regarded as the reflective interpretation of classroom events which teachers see important to remember and report, for they could shape their understanding and classroom practice. In other words, the meaning attached to the event rather than the event itself makes it critical. Analyzing those particular instances is believed to help particularly novice teachers builds a link between what they have learned during pre-service teacher training and what happens in the actual field, i.e., classroom, thereby contributing to their professional growth while teaching (Farrell & Baecher, 2017). Those analysis could also help teacher trainers to better understand the way how those teachers think.

Theoretical Framework

The current study is grounded in Donald Schön's theory of reflective practice, as was presented in his seminal work The Reflective Practitioner: How Professionals Think in Action (1983). The theory highlights that professionals, whether they are teachers or professionals from other fields, need to critically examine their practices both during (reflection-in-action) and after (reflection-on-action) their practice. Schön (1983) argues that effective professionals engage in such continuous reflections rather than solely rely on technical knowledge to understand and navigate unpredictable situations in their practice area. In other words, not only formal training

but also thoughtful reflections on their real-world experiences could help them grow professionally. Reflective thinking helps professionals who contribute to the very functioning of the society in various areas including education, respond thoughtfully to what happens in their professional areas, thereby fostering their professional growth.

Donal Schön's theory of reflective practice closely aligns with the experiences of the pre-service teachers in the current study, who were engaged in basically two forms of reflective practice so that their self-awareness of their actions and underlying assumptions could deepen, they could connect theory with their real-life classroom practices, and they could make informed decisions, which could all enhance their teacher professional development and identity construction. Therefore, that theory could offer a valuable lens to the researcher in her exploration of how focused observations and critical incident analysis as two forms of reflective practice could influence pre-service teacher professional growth during the participants' school practicum experiences.

An Overview of Earlier Studies and the Current Research

The existing literature has documented that reflective practice has been exploited for the professional growth of teachers within various education contexts such as United States, Ukraine, Iran, Saudi Arabia, and various other Asian countries (see, for instance, Kharlay et al., 2022; Khoshsima et al., 2016; Sibahi, 2015; Vaughn et al., 2017), although European and North American countries are following this trend behind (Farrell, 2016). To illustrate, the study of Kharlay et al. (2022) shows that Ukrainian EFL teachers and mostly the experienced ones tend to practice reflection inconsistently mostly through peer interactions, rather than engage in systematic reflections such as journaling.

Recent studies have shown that technology starts to be utilized to encourage reflective practice in teacher training. Among them Artificial Intelligence (AI, henceforth) tools attract much attention. ChatGPT as one well-known intelligent learning engine could manage input and offer outcomes quite fast with a reasoning and comprehension potential (Yu, 2024). It benefits not only learners but also teachers in diverse ways. One recent area for utilization is AI-driven individual and collective reflective practice that should be understood as a promising new approach in the attempt to enhance the quality of pre- and in-service English language teacher education. It has the potential to play an empowering role particularly in under-resourced settings where English teachers may not have regular access to guidance or feedback from mentors or teacher educators (Arefian et al., 2024).

One related representative study that inspired the current research belongs to Arefian et al. (2024), who engaged both novice and experienced English teachers in a ChatGPT-supported collaborative reflective practice process. They valued AI as a critical fiend, mentor, and teacher educator, for it assisted them in exploring their beliefs, assumptions, and actions. The AI-enhanced reflective practice was found to promote their pedagogical skills to devise appropriate lesson plans, helped them link theory and practice, increased their teacher creativity, and sharpened their noticing skills, thereby contributing to more powerful and self-aware teachers. Yet, the process was not without its limitations, for the participants underlined negativities such as lack of digital literacy skills, ChatGPT outcomes with no meaning and contextual sense, and Internet access problems.

Reflective practice has been also exploited in Turkey in particularly pre-service teacher training (Korucu-Kıs & Yukselir, 2021). The studies particularly on the role of reflective practice for in-service teachers have mixed results. To illustrate, Turkish in-service English teachers self-reported to be engaged in reflective practice (Kömür & Gün, 2016). However, the study of Erogluer and Su-Bergil (2024) reported low level of reflective practice among in-service teachers. Still, private sector teachers were found more aware and sensitive about the issue due to the managerial and parental expectations. Yet, as the focus of the study is the professional growth of pre-service teachers, related studies are summarized below. Reflective practice through video recording microteaching sessions, writing reflective journals, and evaluating lesson plans were found to make methodology courses during pre-service teacher training more beneficial, thereby contributing to Turkish pre-service teachers' reflective practices in teaching English to young learners (Gungor, 2016). Digital technologies such as blogging could also assist pre-service English teachers in reflective practice, in that they develop their reflective thinking skills and self-efficacy (Cirak-Kurt & Yildirim, 2021).

It is obvious that reflective practice plays a constructive role in the professional growth and identity development of pre-service English teachers. However, pre-service English teachers' reflections in Turkey are focused on concrete factors such as environment and behaviors (Turhan & Kırkgöz, 2018; Yalcın-Arslan, 2019; Yesilbursa, 2011) although improvement occurs in time to cover more inner-level aspects (Yalcın-Arslan, 2019). As Tripp (2012) notes, "unless our reflection involves some form of challenge to and critique of ourselves and our professional values, we tend to simply reinforce existing patterns and tendencies" (p.12). Therefore, reflective practice needs to be integrated into pre-service teacher training in a way to encourage critical and analytical thinking in a collaborative and challenging fashion. Taking that point into account, the researcher as an experienced teacher trainer devised a multi-dimensional reflective framework where pre-service English teachers systematically engaged with self-reflection as well as collaborative reflection practice during their practicum. They were asked to conduct focused observations on their own, peers' and school mentors' classroom actions, critically reflect upon them, and report them to the teacher educator.

On the other hand, the process required collaborative reflection, in that they were asked to note critical incidents on a weekly basis, report them, take peer and AI feedback, shared them in the classroom to get comments and suggestions, and lastly hand in their overall written reflections to the teacher trainer to get feedback. The results of the larger study were reported somewhere else, yet the current research partially focuses on the pre-service teachers' perceptions and experiences through answering the following research questions:

1. How do they perceive reflective practice in their professional development?
    1.1. How did they perceive the contributions of focused observations on their teacher identity development?
    1.2. How did they perceive the contributions of critical incident analysis on their teacher identity development?
    1.3. How do they evaluate the broader value and drawbacks of human and AI-enhanced individual and collaborative reflective practice in language teachers' professional development and identity construction?
2. How did pre-service English teachers describe their experiences with reflective practice during their

teaching practicum?

2.1. What challenges did they face during the process?

2.2. What way-outs did they use to manage the inherent challenges?

Methodology

Although the broader study was devised as action research to improve the teacher educator practices of the pracademic and contribute to pre-service teachers' professional journey, the current research reporting partial data gathered through self-reports falls within the category of a case study, which involves gathering data on "one person or a single discrete community such as a school" (Breakwell, 2023, p. 89). As noted by Yin (2018), case studies are valued when the goal is to explore behaviors that cannot be controlled and examine contemporary events. Another key strength of a case study is its ability to utilize multiple types of evidence, including such documents, artefacts, interviews, direct observations, and participant observation, to list but a few. Therefore, case study was opted for in the current study to explore the participants' behaviors and perceptions regarding reflective practice, a contemporary pedagogical issue.

Setting and Participants

The current study took place at the English teacher education program of a Turkish state university, where fourth-year pre-service teachers applied what they have learned at the faculty through a year-long school practicum where they made weekly school visits, taught classes, and received feedback from their peers, school mentors, and faculty supervisor. The study involved 39 English pre-service teachers (23 female, 16 male), aged 21–31 (M=22.9), mostly from the local province. Their teaching experience varied, with nearly half lacking real classroom practice beyond faculty demos at the start of the study. Others had informal or private teaching experience. They were placed in primary (n=10), secondary (n=14), and high schools (n=15) for practicum, each supervised by a teacher educator responsible for around 12 trainees through meetings and observations. Only 33 participants completed and send the self-administered questionnaire to the researcher (F=19; M=14).

Design and Execution of Self- and Collaborative Reflective Practice Framework

Over a 16-week period, pre-service teachers engaged in a structured reflective practice process integrated into a teacher education course, i.e., Reflective Thinking and Practice. Following an initial workshop on reflective principles and the multi-dimensional feedback model (self, peer, and AI via ChatGPT), they used a guided framework to conduct focused observation and report and analyze critical incidents from their practicum on a weekly basis. They self-reflected on their focused observations where they observed their own, peers', and school mentors' actions; however, they were supposed to get peer and AI feedback on their critical incidents. Critical incidents were shared voluntarily in class, and both written reports covering self-reflections on observations and self, peer, and AI-oriented ones on critical incidents were submitted for expert feedback. The whole reflective process could be found in Figure 1.

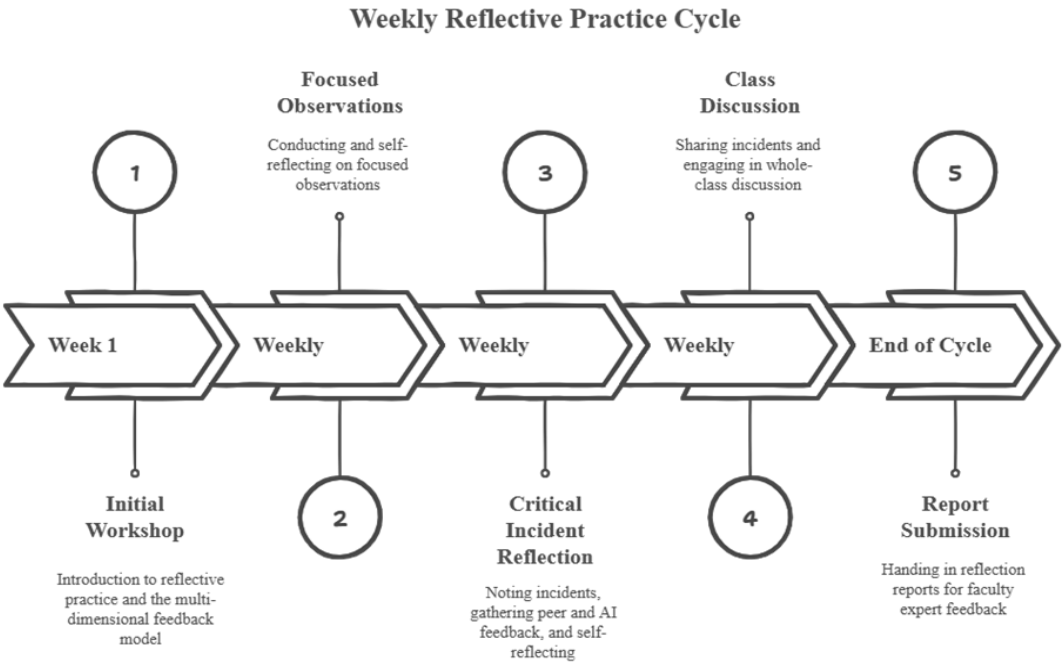

Figure 1. Weekly Reflective Practice Cycle (Created with NapkinAI©)

Data Gathering and Analysis

A self-completion questionnaire was utilized to gather the qualitative data of the current research, which should be understood as a self-administered survey in which the participants read and understand the items, complete it themselves, and send it to the researcher (Bryman, 2012). It was preferred, for it is reported to be time and cost-effective, to be convenient for the participants, to eliminate interviewer effect and thus biased data (Bryman, 2012). Several moves were taken to remove the inherent limitations of self-administered questionnaires. First, as the researcher would not be present to clarify possible issues, clarity of items was ensured through asking expert opinion from a colleague with research experience and field knowledge. Second, to ensure that the right person answered the questions, the researcher adopted an open attitude through establishing rapport with the participants. Her pracademic role and familiarity with the participants for two years were expected to ensure that the right person answered the questions honestly. Lastly, as there was no opportunity to probe the respondents as happens in interviews, the pracademic elaborated on the questions with clarifications as well as inviting them to ask her anything they want immediately through WhatsApp©, a free messaging and voice-over-IP (VoIP) application.

Inductive qualitative content analysis that derives categories from the data rather than apply some pre-established categories to the data (Hayes, 2023) was conducted to analyze the data from the self-reports. While doing so, both quantitative and qualitative content analysis was conducted, for the researcher both counted the codes and later identified categories with similar meanings to reach a deeper understanding of the issue (Hayes, 2023). In line with the content analysis typology of Hsieh and Shannon (2005), the data analysis in the current study falls into the category of conventional content analysis that involves coding the data and reaching the broader categorizations and themes. In such analyses, the outcome could be compared with related theories in the end. After the data were prepared, they were coded as the starting point through the attempt of the researcher to make

marginal notes. Then themes were created, and a sense of linkages was ensured. The interpreted data were supported with exemplary excerpts from the crude data. After manually coding the data, the researcher utilized ChatGPT as a co-pilot to ensure reliability of her manual analysis, for it has been reported to reach a comprehensible understanding of qualitative data (Perkins & Roe, 2024).

Lastly, related ethical considerations for social research were taken into account. Those ethical measures included voluntary participation with informed consent, post-study debriefing, anonymized data, and no personal information collection. The study was approved by Trabzon University's Ethics Committee (Protocol Code: 2024-10/1.15, 11.10.2024).

Findings

The findings of the current study are reported in line with the theme of the research questions, namely participant perceptions and experiences.

Pre-service Teachers' Perceptions of Human and AI-enhanced Individual and Collaborative Reflective Practice

The participants were asked their perceptions of both conducting weekly focused observations and analyzing critical incidents. They were found quite positive about the reflective tasks on focused observations for a number of reasons, which fall into three broad themes, as depicted in Table 1.

Table 1. Participant Perceptions of Weekly Focused Observations

Themes/Categories	Indicators	Participant Codes
Reflective Awareness and Self-Understanding	Increased awareness of previously unnoticed or ignored classroom dynamics (professional growth areas)	P1, P2, P3, P5, P6, P7, P8, P10, P11, P13, P15, P17, P18, P19, P20, P21, P23, P24, P25, P26, P28, P29, P30, P31, P32, P33
	Recognition of personal strengths and weaknesses	P1, P5, P13, P16, P21, P22, P25, P26, P27, P31, P32, P33
Professional Knowledge and Skills Development	Bridging theory and practice	P1, P2, P8, P11, P14, P26, P27, P31
	Growth in instructional knowledge and skills	P2, P3, P4, P5, P9, P23, P33
Confidence and Future Orientation	Increased preparedness for the future	P9, P22, P31
	Growth in teacher confidence	P3

As the table summarizes, the first frequent category that captures the role of focused observations in teacher professional growth is increased reflective awareness and self-understanding. Almost all (n=26) reported that the process helped them recognize previously unnoticed classroom dynamics such as teacher action zone, teacher

questions, teacher assumptions and beliefs underlying their actions, to list but a few. Additionally, several (n=12) reported that the observation process helped them recognize their personal strengths and weaknesses. To illustrate, the following two excerpts touch upon that increase in professional awareness:

> Overall, understanding the reasons behind an educational practice and the underlying patterns greatly helped me make sense of and deepen my professional awareness and development. (P2)
>
> It enabled us to do what we were already doing consciously. By grounding our naturally developing teaching practices in a scientific basis, it allowed us to carry out every action deliberately. Beyond the information read from a book and quickly forgotten, or memorized under complex headings, this knowledge became lasting and meaningful thanks to the tasks. (P11)

The second emerged category, i.e., professional knowledge and skills development, shows that the field practice helped some participants (n=8) connect theory and practice and make sense of what they learned in the campus. An almost equal number of participants (n=7) stated that conducting focused observations on a weekly basis contributed to their instructional knowledge and skills. To illustrate, the following excerpt shows how such reflective awareness contributed to the pedagogy of the participant:

> After learning what the term “teacher action zone” means, I started using the method of randomly drawing students’ names from a bag, and in this way, I was able to reach every student in the classroom. Also, the areas I focused on in class became more evenly distributed. On the other hand, I realized that I have some dominant roles that differ from the ones I ideally want to see in myself. For instance, I was honestly surprised by how much care I put into material design—I seem to have the role of a material designer. Lastly, although I’m still working on it, I think it also helped me improve in giving feedback. For example, I used to never implement peer approval, but as I gained experience, I started to include it as well. (P33)

A third theme, confidence and future orientation, shows how those scheduled focused observations on a weekly basis contributed to some participants (n=3) through preparing them for the future and increasing their teacher self-confidence (n=1):

> Instead of just covering the topics theoretically and through readings, actually applying the concepts made them more permanent in my mind. Putting the concepts into practice gave me experience and broadened my perspective. It also encouraged me to apply these in my future teaching career. (P14)
>
> These observations and reports enabled me to make decisions in the classroom more consciously and played an important role in shaping my teaching identity. (P6)

In the current study, as the second reflective practice activity, the participants were also asked to report critical incidents, get peer and AI feedback on them, self-reflect upon them, share them in the classroom and then report them to the faculty expert to get written feedback. The following table summarizes their perceptions of the role of critical incident analysis on their professional growth. Most were found positive about the reflective practice process, yet a few noted that the process had limited contribution due to its inherent challenges (P1, P12, P30) while one wrote that the process did not contribute to his professional growth (P22). Positive attitudes result from diverse reasons which fall into three categories, as is seen in Table 2.

Table 2. Participant Perceptions of Critical Incident Analysis

Themes/Categories	Indicators	Participant Codes
Professional Awareness and Preparedness	Increased preparedness for similar and future situations	P1, P2, P3, P5, P6, P8, P9, P10, P11, P14, P16, P18, P21, P24, P25, P32
	Improved understanding of potential classroom issues	P1, P2, P6, P11, P13, P14, P17, P18, P32
	Improved problem-solving skills	P6, P23, P31, P32
	Bridging theory and practice	P6
	Enhanced classroom management	P12
Reflective and Critical Thinking Development	Development of reflective thinking discipline	P1, P2, P4, P6, P8, P15, P19, P20, P23, P24, P26, P27, P28, P31, P32
	Improved critical writing skills	P6
Personal and Emotional Growth	Tolerance towards imperfection and reduced pressure to be a flawless teacher	P3, P33
	Awareness about their own strengths and weaknesses	P17, P33
	Empathy	P6, P16
	Boosted self-confidence through shared experiences	P3
	Flexible teacher identity creation through reflective practice and openness to change	P7

First, professional awareness and preparedness emerged as a dominant theme. Almost half (n=16) reported that critical incident analysis enhanced their readiness to handle comparable and forthcoming challenges in their own classrooms. Alongside similar lines, several (n=9) noted that that attempt helped them understand classroom dynamics better such as teacher action zone, teacher questions, teacher assumptions, to list but a few. Concerning these, four stated that such analyses improved their problem-solving skills. The process seems to have helped them bridge the gap between theory and practice (n=1) and enhanced their classroom management skills (n=1). The following excerpt illustrates the contribution to the teacher's conscious awareness and preparedness for future challenges:

> This process allowed me to analyze events in detail and evaluate both my own reactions and the outcomes of the events. I developed a more conscious awareness, especially regarding classroom management, student behavior, and teacher-student communication. Critical writing strengthened my problem-solving skills and increased my empathy by enabling me to view events from different perspectives. Additionally, by linking theoretical knowledge with practical situations, I had the opportunity to develop more effective teaching methods. Critical evaluations supported my professional development and helped me become better prepared for similar situations I may encounter in the future. At the same time, I observed potential classroom environments and problems that I might face in my future career and gained experience on how to handle such situations. (P6)

Second, the domain of reflective and critical thinking development captures the cognitive gains of the participants. Almost half (n=15) emphasized that weekly engagement with the multidimensional feedback mechanism in critical incident analysis promoted their ability to analyze their own teaching. One underlined the progress in their ability to write more critically and analytically.

The third theme, personal and emotional growth, represents the socio-emotional impact of the reflective process. They highlighted that identifying critical incidents, sharing them with peers and AI, and getting feedback fostered tolerance towards imperfection and reduced the pressure to be a flawless teacher (n=2), helped them realise their own strengths and weaknesses (n=2), fostered empathy (n=2), boosted their self-confidence (n=1), and encourage them to be a flexible teacher open to change (n=1). The following excerpt illustrates those socially and emotionally positive impacts of the process on the participant:

> It helped us see that some situations do not happen only to us and prevented us from feeling alone. In some cases, even our mentor teacher did not know exactly what to say or do, what was right or wrong, which showed me that I don't have to be a perfect teacher and positively affected my self-confidence. Some incidents I heard from my friends made me think about what I would do if I were in that situation. I believe that if I ever face such a situation, it will help me approach it more calmly. (P3)

To gain a deeper understanding of the participants' overall perspectives, they were asked to reflect on the broader value and drawbacks of reflective practice on professional growth and identity development beyond those two specific task types. All stated that such reflective processes had the potential to contribute to language teachers' professional development. Similar to the documented perceptions on the specific process in the current study, the reported benefits fall in mainly three categories, including professional growth and development, cognitive and reflective skills, and collaborative and social benefits. The first theme should be understood as increased professional awareness (n=13; P2, P3, P8, P9, P10, P11, P12, P13, P19, P21, P25, P26, P27), recognition of blind spots/teacher weaknesses and strengths (n=10; P2, P5, P6, P15, P22, P23, P24, P26, P31, P33), continuous professional development (instructional effectiveness) (n=8; P1, P2, P6, P9, P14, P17, P28, P29), theory-practice integration (n=2; P2, P30), increased teacher self-confidence (n=P14), and increase teacher responsiveness (n=P24). The second benefit theme is cognitive and reflective skills, which covers the promotion of multi-perspective and critical thinking (n=12; P2, P3, P4, P7, P18, P20, P23, P25, P27, P30, P31, P32), improved problem-solving skills (n=7; P6, P15, P22, P24, P28, P32, P33), and informed decision-making (n=2; P9, P11, P31). The third and last benefit theme, collaborative and social benefits, covers codes of establishment of a community of practice (n=2; P3, P5), and empathy development (n=1; P2). The following excerpt illustrates recognition of teacher strengths and weaknesses and instructional effectiveness:

> Critically reflecting on my own experiences helped me recognize both my strengths and the areas I need to improve. It allowed me to evaluate the methods and techniques I used, as well as my ability to manage moments of crisis. Observing the lessons of a more experienced teacher and learning about their views on the profession was also a very effective process in helping me develop a professional identity. (P15)

Lastly, reflective practice in a broader sense was not found flawless, for several underlined some inherent challenges. Several (n=10) pointed out that reflective process does not harm teachers' professional well-being

(P14, P16, P17, P19, P20, P21, P22, P26, P27, and P32). However, there were several others (n=13), who reported that such processes that require deep thinking and critical evaluation may result in loss of self-confidence (P1, P2, P4, P6, P7, P9, P11, P15, P24, P25, P29, P31, and P33). This emotional and mental fatigue may decrease their motivation (n=4; P1, P2, P6, P25) and serve as a stress-breeding rather than a developmental factor (n=P6, P23). Additionally, several (n=11) drew attention to the time-taking nature of the process (P6, P10, P12, P13, P15, P18, P23, P24, P28, P30, and P31). The following two excerpts illustrate emotional fatigue and loss of self-confidence:

> When teachers try to deeply understand and solve every problem their students experience, internalizing these issues too much can eventually lead to a loss of motivation. For example, a teacher who constantly observes their own mistakes may become overwhelmed by negative feelings as they notice their shortcomings. This situation can turn the thought of "I must be a better teacher" into an obsession, causing both physical and mental exhaustion. This can be summed up by the proverb, "Too much of anything is harmful." Another potential drawback is the risk of biased or insufficient evaluations. Teachers may overanalyze the events they experience and focus excessively on details, which can make it difficult for them to see the bigger picture. (P2)

> Although it has many positive aspects, I think it has led to a lot of self-doubt for me. I've become so skeptical of every step I take that I'm no longer confident in myself. Even when I do something well, the thought of "what if I'm doing it wrong?" constantly lingers in my mind. Honestly, I think this is the most negative aspect of the experience for me. (P29)

Pre-service Teachers' Experiences on Human and AI-enhanced Individual and Collaborative Reflective Practice

The participants were asked whether they had any negativities in the human and AI-enhanced individual and collaborative reflective practice process. Four participants (P2, P21, P24, and P28) self-reported that they did not have any negative experiences during the process. Yet, the others underlined some inherent challenges, which fall into four categories, as is presented in Table 3 in a descending order.

Table 3. Encoded Challenges

Themes/Categories	Indicators	Participant Codes
Time and Effort-related Challenges	Time-consuming process	P1, P4, P6, P13, P14, P16, P20, P23, P25, P26, P30
	Academic workload and fatigue	P3, P6, P9, P13, P15, P16, P19, P25
	Decline in task efficiency over time/reduced productivity	P9
	Last-minute printing difficulty	P8
Quality and Depth of Feedback	Limited and shallow peer feedback	P1, P4, P5, P7, P12, P13, P17, P20, P30, P31
	Unsatisfactory initial AI-generated suggestions	P8, P10, P15, P18, P31, P32

Themes/Categories	Indicators	Participant Codes
	Shallow faculty expert feedback	P12, P17
Structural and Logistical Challenges	Difficulty in finding different peer reviewers every week	P3, P4, P11, P12, P13, P15, P18, P26, P29, P33
	Difficulty in identifying noteworthy critical incidents over time	P3, P22, P25, P27, P30
Cognitive and Reflective Challenges	Difficulty in reflecting critically	P23

Among those challenge categories, time and effort-related challenges stand out. Several (n=11) reported that the reflective process was time-taking, for it covered several steps, including conducting focused observation and reflecting upon it, noting down critical incident and reflecting individually upon it after getting peer and AI feedback, sharing critical incident sin the classroom, and writing a final reflective report to get feedback from the faculty expert. Other departmental responsibilities seemed to complicate the matter even further, for some (n=8) reported that they felt academic fatigue, and one noted that this reduced their productivity (n=1) in the end. Lastly, one touched upon the technical challenge to print out the written report to hand in to the faculty expert, for there were not enough printing facilities around. The following excerpt illustrates both time-related and structural and logistical challenges:

> Since we are in our final year, our schedule was quite intense, and doing assignments every week could be challenging at times. Also, while it was easier to identify a critical incident at the beginning, as I got more accustomed to the class and built a better rapport with the students, things started going more smoothly, making it harder to find critical situations. (P25)

Feedback quality issues emerged as another significant concern, for several (n=10) found peer feedback limited or superficial; some (n=6) were not satisfied with AI feedback, and some two underlined the lack of depth in faculty expert feedback. The following excerpts illustrate low satisfaction levels with AI and peer feedback:

> I did struggle a bit with the AI. Sometimes it gave me very cliché feedback or responses that felt like it was just trying to please me. Some of the suggestions it offered were overly optimistic—beyond what our current conditions or standards could realistically support. I managed to get decent responses eventually by explaining the school environment, classroom setting, and student profile to it, but it definitely wasn't easy. (P10)

> In particular, I did not always receive the detailed and critical feedback I expected when sharing my critical incidents or discussing my tasks. Sometimes my peers gave short and superficial comments, which made it difficult to analyze the incidents in depth. ChatGPT also occasionally provided long-term and more general suggestions, which were not concrete enough for the immediate situation. (P31)

Structural and logistical difficulties were also prevalent. Several (n=10) complained about the recurring challenge to find a different peer every week to get their reactions and suggestions on their weekly critical incidents. Some (n=5) reported to have struggles to consistently identify meaningful critical incidents every week over time. Apart from these challenge areas, one underlined the challenging nature of reflective practice. The following excerpts

exemplify those difficulties.

> As I mentioned above, what was more difficult than completing the tasks was finding a peer to give feedback. Since we had to find a different person each week, this was quite challenging. Also, because our internship day was very close to the assignment submission deadline, we often left the assignments to the last day. As a result, getting feedback became even harder. Some people even asked for feedback just a few hours before class. This situation was quite exhausting. (P11)
>
> However, I realized that I had difficulty finding critical incidents towards the end. At the beginning, everything was new, and I constantly encountered situations I was experiencing for the first time. Things like the teacher's reactions to the students and their approach to us constantly caught my attention. But after a while, these behaviors became normalized, and it became harder to find a critical incident worth writing about. (P27)

Apart from those challenges, they were asked to report the ways they utilized to deal with the challenges of the reflective process. Despite the range of challenges they experienced with the reflective process, the self-reported strategies they employed were relatively few and showed little variation. Those who were unsatisfied with AI feedback noted to have rephrased their prompts for improved AI creativity in its outcomes (n=6; P8, P10, P17, P31, P32, and P33). On the other hand, few focused on improving time planning (P1, P23), staying up late to meet deadlines (P13, P15), postponing or skipping other responsibilities (P13, P16) as a reactive approach, and completing assignments immediately after school visits (P14) to keep up with the process. A small number tried to solve their problems through careful peer selection (P1, P13), getting peer and faculty staff support (P28), encouraging peers to think critically (P31), and examining example reflections to develop a truly reflective and critical stance (P23). The following except illustrate how the participant increased the feedback quality form the peers and AI: "I made an effort to ask AI clearer and more specific questions. I also encouraged my peers to focus on details and think critically. In this way, I managed to receive more meaningful feedback" (P31).

Discussion and Conclusion

The study explored pre-service English teachers' perceptions and experiences regarding a multidimensional reflective teaching process engaging them in self-peer, and AI-supported reflection through focused observations and critical incident analysis on a weekly basis. The findings show that there was a near-consensus among the participants regarding the benefits of reflective practice for teacher professional development and identity construction in line with the recent study of Arefian et al. (2024). They found focused observation tasks productive particularly for enhancing their awareness of various classroom dynamics and fostering a deeper understanding of their strengths and areas for improvement. These potentials and sharpened noticing skills are documented both theoretically and empirically by Farrell (2018b), who noted that focused observation is a way to ensure self-awareness of one's own pedagogy as well as classroom dynamic that they may not otherwise observe and by Arefian et al. (2024), who explored the impact of ChatGPT-aided individual and collective reflective practice. Additionally, as highlighted by Richards and Lockhart (2007), the process helped the participants examine specific pedagogical elements such as teacher action use, teacher instructions, forms of questions, student interaction, to list but a few.

Similarly, they valued critical incident analysis and multi-dimensional feedback mechanism, for the process increased their awareness of potential classroom issues, thereby preparing them for future challenges and fostered the cultivation of a sustained discipline of critical and reflective thinking. These findings support the findings of Arefian et al., (2024), who found that ChatGPT-aided reflective practice assisted teachers in exploring their beliefs, assumptions, and actions. As is noted by Tripp (2012), such reflective interpretation of classroom could shape teachers' understanding of classroom practices, and the process helps them establish the link between what they have learned during pre-service teacher training and what happens in the classroom (Farrell & Baecher, 2017). Overall, the potential of reflective practice in a broader sense to ensure a deeper understanding of classroom realities and assess their own potential with strengths and weaknesses has been well-documented in the related literature (Akbari et al., 2010; Farrell, 2018a; Yalcın-Arslan, 2019), thereby allowing the researcher as a teacher educator to suggest its systematic incorporation into mainstream teacher education.

Despite those widely acknowledged benefits of that well-intentioned process, it was not without its limitations, for they reported a number of practical, emotional, and pedagogical challenges, which could complicate the reflective process. They were mostly concerned about time and effort needed, quality and depth of feedback, and structural and logistical challenges. Particularly, their dissatisfaction with ChatGPT outcomes support the findings of Arefian et al. (2024), whose participants complained about ChatGPT outcomes with no meaning and contextual sense. Considerable time commitment and sustained effort were required; however, when the process made it difficult for them to keep up with the other departmental responsibilities, they reported to have felt overwhelmed and fatigued.

Based on the findings of the current study, several pedagogical implications could be suggested to ensure the productivity and sustainability of reflective practices in teacher education. First, as the reflective process is demanding in terms of time and effort, redundancies such as overlapping tasks need to avoided and helpful templates should be offered to help them focus on more easily and minimize emotional and physical burden. Additionally, these tasks could be scheduled less frequently to reduce workload and fatigue, thereby increasing motivation and engagement. Such measures could avoid turning that well-intentioned idea into overwhelming pressure through the end of the process.

Second, the participants were found concerned about quality of feedback and reflections of both peers and ChatGPT as a popular AI tool documented with quite fast with a reasoning and comprehension potential (Yu, 2024). Therefore, related skills need to be targeted during pre-service training through integrating awareness raising and skill enhancement tasks to ensure insightful, in-depth, and practical feedback. The literature has documented that pre-service English teachers' reflections in Turkey are low-quality, for they mostly focus on concrete factors such as environment and behaviours (Turhan & Kırkgöz, 2018; Yalcın-Arslan, 2019; Yesilbursa, 2011) although improvement occurs in time to cover more inner-level aspects (Yalcın-Arslan, 2019). At that point, AI could play a constructive role. To get more constructive, meaningful, and focused AI-generated feedback, teachers need to be empowered with effective prompting skills. Teachers need to be taught how to interact with AI and ask focused questions. That collaboration with AI enhanced with effective prompting skills could play an empowering role particularly in under-resourced settings where English teachers may not have regular access to

guidance or feedback from mentors or teacher educators (Arefian et al., 2024), thereby being inclined to teacher burn-out.

Third, although the participants appreciated the process, some structural and logistical issues such as finding a different reviewer and critical incident every week prevented them from fully making of the process. Therefore, a better peer reviewer rotation could be ensured with clear protocols, varied formats such as group-based peer review, and technology utilization such as learning management systems automating the process, for digital technologies have been documented to assist the reflective process (see, for instance, Arefian et al., 2024; Cirak-Kurt & Yildirim, 2021). Lastly, several participants complained about the emotional burden, for adopting a critical stance all the time may result in over-empathy and emotional fatigue, thereby decreasing their well-being. Such emotional burdens could be avoided through regular peer and faculty staff emotional check-ins, encouragement for adapting a balanced feedback mechanism focusing on strengths and weaknesses, and flexibility in deadlines, which could all contribute to the creation of a healthy community of practice.

Despite the valuable insights gained from the current study, it is not without its limitations that need to be acknowledged. First, the cohort sample does not allow the researcher to generalize larger beyond the current sample. Second, reliance on self-reported data may not eliminate social desirability effect. Third, one-term reflective practice process may not be enough to fully capture the long-term effects. Therefore, future studies with longer durations could employ more robust research designs with larger and varied samples to ensure a complete understanding of the issue, thereby increasing the generalizability of the findings.

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