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Investigating the digital proficiency of English as a foreign language (EFL) educators in association with their professional identity

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In the realm of English language teaching, EFL teachers' professional development is crucial for effectively navigating evolving educational environments that require the integration of technology into the educational landscape amid continuous technological advancements. A case study involving 5 EFL teachers from various domains and educational backgrounds was intended to dismantle the factors that influence EFL teachers' digital competence and how this competence is reflected in their professional identity (PI). DigCompEdu framework (Redecker & Punie, 2017) and teachers' personal interpretative (TPI) framework (Kelchtermans, 1993, 2009) guided the thematic analysis. Organizational communication, professional collaboration, and reflective practice were disclosed as contributing factors to support EFL teachers' PI development. Besides, task perception and job motivation were unraveled as digital competence reflected in EFL teachers' PI. In general, the accentuated data analysis pointed out EFL teachers possessed multiple identities that are alternate in social interaction and pedagogical implication. The findings are deemed valuable to inform the EFL teachers' excessive values and beliefs of digital competence in relation to their PI. Educational institutions, government, and other nested education stakeholders are suggested to equip practical supports towards EFL teachers' digital competence development. Finally, limitations of the study and suggestions for further research are discussed.

Keywords: CALL, digital competence, EFL teacher's professional identity, teacher's professional development.

Introduction

The advancement of new technologies and web tools in the 21st century as the current technological disruption in the education sector brings a profound change that permits educational institutions, educators, and educational stakeholders to redefine the quality of learning. UNESCO's Education for Sustainable Development (ESD) directs the improvement of access to quality education on sustainable development at all levels and in all social contexts. This involves educational reorientation and enhancement of people's knowledge, skills, values, and development as societal transformation for sustainable development (Anthony et al., 2020). Teachers endeavor to develop their knowledge, pedagogy, instructional skills and expect to do their best if they are more committed to their profession (Ostad et al., 2019).

Consequently, the emergence of technologies in the realm of education also emphasizes the teachers' continuous professional development in order to be integrated with new and changing technologies as well as its possibilities, opportunities, advantages and disadvantages. In the realm of English language teaching, language teachers are deemed to play a "central" role in shaping the future of Computer-Assisted Language Learning (CALL), as asserted by Hubbard (2008). They can actively participate in CALL-related activities and envision the professional identity they aspire to cultivate.

In addition to aiding language teachers in enhancing their technological skills, Computer-Assisted Language Learning (CALL) also exerts an influence on their professional development. The workplace, to some degree, can be viewed as an environment where technology training and learning coalesce (Nguyen, 2022). The act of engaging with this imagined identity can contribute to the reconstruction of a new and evolving professional persona (Meihami & Esfandidari, 2021). Therefore, teachers' professional development is of key importance in teaching, learning and administration since it will be very beneficial to better overcome challenges and new circumstances, refine teaching methods, etc. (Fransson & Norman, 2021).

Likewise, teachers' continuous professional works in their sector could depict a personal variable influencing digital competence (Boldrini et al., 2019). It has been considered that digital competence is one of the most influential factors in teachers' professional careers and as one of the fundamental professional qualifications (Guillen-Gamez et al., 2021). Previous studies have given evidence that teachers are key factors for the success of ICT integration and school innovation (European Commission, 2013; Lund et al., 2014; McKenney, 2013). Meanwhile, digital competence is influential for technology integration in the educational field (Hatlevik, 2017) and therefore, it considers teachers as the 'true gatekeepers' (Ertmer et al., 2012) who should become role models and facilitators of learning. Consequently, teachers need to master adequate

digital and information literacy ability to present readiness of ICT integration in schools (Quaicoe & Pata, 2020).

Concomitantly, studies investigating EFL teachers' professional identity in this digital era have gained growing attention. In particular, most of the studies have endeavored to investigate corresponding features to teacher identity rather than depict a comprehensive explanation of it (Han, 2017; Leigh, 2019; Miller et al., 2017; Nguyen, 2016). On the other hand, in the realm of EFL context, due to the conceptualization of identity that is complicated, dynamic, and fluctuate in nature, most of the studies of EFL teachers' professional identity have been done quantitatively to explore the relationship between EFL teachers' professional identity with constructive mental concepts such as self-esteem, self-efficacy, etc. (Celebi & Eraldemir-Tuyan, 2022; Dilek & Altas, 2022; Mora et al., 2016; Moslemi & Habibi, 2019; Motallebzadeh & Kazemi, 2018; Ostad et al., 2019). Whereas, it has been asserted that digital qualifications are essential for educators as part of professional and pedagogical qualification (Hamalainen et al., 2021). The evidence of EFL teachers' digital competence in their professional identity warrants empirical investigation. Therefore, to fill the related empirical void, the study delves into the following questions:

1. What are contributing factors of digital competence influence to EFL teachers' professional identity development?
2. What aspects of digital competence are manifested in EFL teachers' professional identity?

Literature review

Digital competence in relation to EFL teachers' professional identity

The effective use of digital resources has associated with some terms including 'information literacy' (Zurkowski, 1974), 'media literacy' (Christ & Potter, 1998), 'computer literacy' (Tsai, 2002), and 'multi-modal literacy' (Heydon, 2007) and those terms have been considered as components of digital literacy's inclusive view (Gruszczynska & Pountney, 2013). Further, these approaches were assumed as a set of basic competences to equip pre-service teachers in the process of transferring their future classroom practice (Admiraal et al., 2016). However, criticisms related to these approaches have been issued in the existing literature such as limited skills focus, lack of authenticity, failure of emerging technology utilization in different socio-cultural contexts, ineffectiveness of reductive design and ignorance of broader view regarding ethics, digital citizenship, health, good attitude or behavior, welfare and collaborative elements (Gruszczynska et al., 2013; Lund et al., 2014).

Correspondingly, most recent studies have emerged to reconceptualize the present skills-focused digital literacy into digital competence models that recognize future teachers' necessities of broader and the more diverse knowledge, abilities and dispositions (Falloon, 2020) since twenty-first century education deems digital competence as the prerequisite to conduct an effective learning environment (Maderick et al., 2016). Generally, digital competence is

considered as multidimensional competence that involves ability to mobilize skills that enable one to search for, select critically, obtain, process and transform digital information into knowledge as well as ability to communicate the information by utilizing different sets of technological and digital supports (Flores-Lueg, 2019). Those skills and knowledge are significant for citizens to contribute to citizenship in a knowledge society (Ilomäki et al., 2016).

In the same vein, besides digital competence, identity has also become a great conception that teachers should link to clearly insist professional norms. Teacher identity reveals predictable consistency at different points in time which is able to be identified as a stable dynamical behavior rather than constructing random transformation (Henry, 2016). In accordance with Pennington (2015), EFL teacher professional identity constructs a distinctive combination of personal attributes of teachers embedded with subject knowledge, standards, and methods specific to their field which include both core and peripheral components (Beijaard et al., 2004). The core and peripheral components of teacher identity are probably mediated by a self-other relationship, meaning that one's position in a certain group (social role) and one's individual self-image (role identities) perform as the foundation of identity (Sinha & Hanusein, 2017). The core shapes the essential, distinguishing, and common characteristics of EFL teachers' professional identity (Hashemi et al., 2021). Whereas the altered characteristics include ecology, context sensitivity, and individual dependent characteristics that are presented at teachers' works in the form of self-reflection, interpretation, and elevation of multiple roles over time (Henry, 2016).

Concomitantly, being made up of core and peripheral components, language teachers' professional identity is a coherent and complex totality (Henry, 2016), multiple, alternately, short-term and over time discursively in the context of social interaction and material interaction (Barkhuizen, 2016). Regarding this, persons who deliver education programs will have different perceptions, comprehension and value (Helleve et al., 2009). This value develops through a dynamic and continuous process to explore the self and the others concerning the personal, professional, and social dimensions of one's being (Beijaard, et al. 2004). Nonetheless, teachers may also capture the usual features of their social role and role identities at a certain point of time (Hashemi et al., 2021).

Finally, addressing the pursuit of emerging issues in EFL teachers' professional identity and digital competence, it has been enunciated that foreign language teachers' professional competence integrates both digital skills adoption and ICT as the competences in utilizing ICT (Sysoyev et al., 2015). In addition, ample empirical evidence has observed that digital competence plays a prominent role in teachers' professional development (Boldrini et al., 2019; Guillen-Gamez et al., 2021; Hamalainen et al., 2021; Quaicoe & Pata 2020). It has been reported that digital competence determines how teachers incorporate their point of view related to decision making in the educational curriculum (Teo & Zhou, 2017), therefore teachers' digital empowerment is essential for schools' digital innovation (Lund et al., 2014) and school's ability to become digitally proactive (McKenney, 2013). In addition, teachers should also be able to become digitally competent to decide pedagogical implementation in terms

of digital technologies utilization in education and learning opportunities creation thus it is possible to encourage the elaboration of learners' digital competence (Krumsvik, 2014). Consequently, teachers' competence to integrate ICT in teaching practice is essential to ascertain learning's equity and quality in professional practices (UNESCO, 2018).

DigCompEdu framework

Many frameworks examining teachers' digital competence have been developed by some institutions that also consider the context diversity either nationally or internationally compatible, those are: ICT Competency framework for teachers (UNESCO, 2011); ISTE (Crompton, 2017); and the Digital Teaching Professional Framework of the Education and Teaching Foundation in Britain (Education & Training Foundation, 2019).

In the literature review, teacher digital competence frameworks have also been issued in the last decades, for instance, Digital European Literacy (Martin and Grudziecki, 2006); SAMR-Substitution, Augmentation, Modification and Redefinition (Puentedura, 2006); TPACK-Technological Pedagogical Content Knowledge (Mishra and Koehler, 2006); Teachers' digital competence model (Krumsvik, 2014); the teacher-centered DECK framework (Fisher et al., 2012); DigiLit Leicester (Hall et al., 2014); and Digital Literacy Model (Ng, 2012).

Whereas Educators are expected to own and develop various competences in the realm of technology development and technology integration, and therefore a more comprehensive and versatile framework is required (Redecker & Punie, 2017). Promoting six different proficiency levels including professional engagement, digital resources, teaching and learning, assessment, empowering learners and facilitating learners' digital competence, the DigCompEdu framework is in line with the Reference of English proficiency levels that is presented in the Common European Framework (Benali et al., 2018; Redecker & Punie, 2017) while Bloom's taxonomy was adopted as a consideration during the process of determining the levels (Redecker & Punie, 2017). These levels explain teachers' steps and roles for digital technologies integration into their professional practices (Benali et al., 2018).



Figure 1. The DigCompEdu framework (Redecker & Punie, 2017)

DigCompEdu is carried out at national, European and International level (Redecker & Punie, 2017). It views educators' skills holistically including pedagogical knowledge, learning methods, and techniques (Redecker & Punie, 2017) in details 22 competences that are organized in six areas. This study focused on the first area of DigCompEdu which is professional engagement that covers four competences including organizational communication, professional collaboration, reflective practice, and digital continuous professional development (CPD).

DigCompEdu does not only highlight technology utilization, but also the greatest teachers' problems in terms of technology application in teaching-learning process and digital competence concentration in teaching-learning strategies (Lucas et al., 2021). Deeming the centralization of the contextual, methodological and pedagogical dimensions that teachers should acknowledge (Lucas et al., 2021) as well as the superiority of educators' digital competence including the integration between knowledge, skills, and attitudes rather than only considering their knowledge, DigCompEdu is considered as a more comprehensive framework than other digital competence frameworks (Caena & Redecker, 2019).

Teacher's personal interpretative framework

This article draws on teachers' personal interpretative framework (hereafter TPI) as it was proposed by Kelchtermans (1993, 2009). Kelchtermans (2009) asserts that teachers have excessively issued values and beliefs about educational aims and their responsibilities in that pursuit. The framework was originally developed to conceive teachers' professional development and is based on the concept of subjective educational theory and the professional self (self-understanding). Matching to the aims of the study, the concept of 'a professional self' was adopted to explain the dynamic and changeable nature

of certain phenomena. The concept of professional self depicts the way teachers perceive themselves. It focuses on interplay between teachers' self-image, self-esteem, task perception, job motivation and views of future perspectives (Kelchtermans, 1993, 2009; Vanassche & Kelchtermans, 2014).

Self-image is closely linked to self-esteem, which involves an individual's subjective emotional assessment of their value. Conversely, self-image refers to how a person perceives themselves based on their interpretation and understanding of how others perceive them. Self-esteem is the subjective emotional assessment that individuals make about their own value or worth.

Job motivation is interconnected with a teacher's drive and choice to pursue a teaching profession. Job motivation encompasses the reasons behind individuals choosing to enter the teaching profession and their subsequent decisions regarding whether to remain in it or leave. Task perception, a component of professional self-understanding, is evident in teachers' perspectives on what is expected or not expected in their role since it is a fundamental aspect of professional self-awareness. It is shaped by personal values that align with the educational context, encompassing official tasks and expectations. Finally, the future perspective focuses on what emerges to acknowledge the dynamic nature of self-understanding. In this circumstance, the foundation for action and agency is formed and which are related to future expectations and past experiences (Kelchtermans, 2009).

Method

Research design and context

This case study followed Yin's (2003) design, which was intended to unravel the relation between EFL teachers' digital competence to their professional identity including exploring factors that influence EFL teachers' digital competence to their PI and examining how digital competences are manifested in their PI.

Participants

The research participants involved 5 EFL teachers (2 university faculty members, 2 secondary school teachers, and 1 English tutor). The participants were selected through purposive sampling by considering their English proficiency level, experiences in teaching EFL (more than 10 years), and wide array of technologies utilization to assist their language teaching.

Table 1. Participants’ demographic information

Participant code	Gender	Educational qualification	Teaching experience (years)	Educational institution	Location
P1	Male	Bachelor	11	English course	Pare (a small town)
P2	Female	Master	16	Senior high school	Kediri (a small town)
P3	Female	Bachelor	24	Senior high school	Kediri (a small town)
P4	Female	PhD	31	Private university	Kediri (a small town)
P5	Female	PhD (candidate)	16	Private university	East Nusa Tenggara (western part of Indonesia)

Data collection and analysis

Semi-structured interviews were conducted to investigate the participants’ experiences and point of views of the technology integration and manifestation to support and improve their professionalisms. Before conducting the interview, the researchers studied the relevant literature to review a list of questions of the existing research questions and frameworks/theories to develop an interview guide (Cattaneo et al, 2022; Hashemi et al., 2021; Redecker & Punie, 2017; Schwendimann et al., 2015). The interview guide covered four main domains: professional engagement (tendency to impart knowledge and experience, effective role model, being knowledgeable and up-to-date); communication and collaboration (with learners, parents, third parties, other educators and system learning locations); teaching and learning (digital resources selection, assessment, EFL materials development); and learners’ empowerment (see Appendix for interview guideline).

Before the interview, the researchers requested participants’ consent or agreement, confirming their comprehension of their rights and the potential risks associated with the procedure. After participants signed the consent forms, it means that they agreed to accept it and they were ready to be interviewed. Furthermore, to maintain the trustworthiness, the researchers required the participants to verify the accuracy of the translated data transcription. The participants were also required to cross-check their own initial data gathering after data analysis. We also compared the results of the analysis and interpretation to ensure the coding accuracy and consistency.

The data collection period occurred in a month (October 2023). There were one-sessions interviews which lasted for 30–45 minutes. A friendlier and more conversational approach to interviews was implemented to gain deeper insights about participants personality, character, and opinion. The interviews were audio recorded to be further analyzed by following inductive thematic analysis (Braun & Clarke, 2006) to explore the relevant data and address the

research questions. In determining the themes, we adopted the parameters of professional engagement in DigCompEdu framework (Redecker & Punie, 2017) and teachers' personal interpretative framework (Keltchtermans, 1993, 2009) as explained in the literature review. The DigCompEdu framework (Redecker & Punie, 2017) guided thematic analysis for the first research questions (RQ1) investigating the contributing factors of digital competence influence to EFL teachers' professional identity development. The teacher personal interpretative framework (Keltchtermans, 1993, 2009) guided thematic analysis for the second research question (RQ2) investigating digital competence manifested in EFL teachers' professional identity.

In practice, we meticulously followed several steps, including familiarizing ourselves with the data, creating initial codes, identifying emerging themes, reviewing these themes, naming and defining them, and finally reporting our findings. The emerging themes were categorized based on their relevance to and alignment with the specific research questions at hand. Certain data reduction techniques were utilized to choose and structure the pertinent data that reflects the underlying revealed state (Yeh et al., 2021). During this stage, the pertinent data were organized into tables, while any irrelevant data were excluded from the dataset. Data triangulation (Denzin, 2009) was also committed by considering three data points (people, time, and space) that are interrelated, discovering data points which represent different data of the same event, and which share commonalities in different settings.

Findings

Contributing factors of digital competence influence to EFL teachers' professional identity development

The first findings disclosed the contribution of EFL teachers' digital competences into their PI by referring to the DigCompEdu framework focusing on the area 1, which is professional engagement. The findings indicate that teachers employ digital technology tools for various purposes, learning activities, references, platforms, apps and materials based on their personal values and beliefs. EFL teachers' digital competences as shown in the data analysis cover three competences of the professional engagement area of DigCompEdu including organizational communication, professional collaboration and reflective practice. The data on their digital competencies is shown in the figure below.

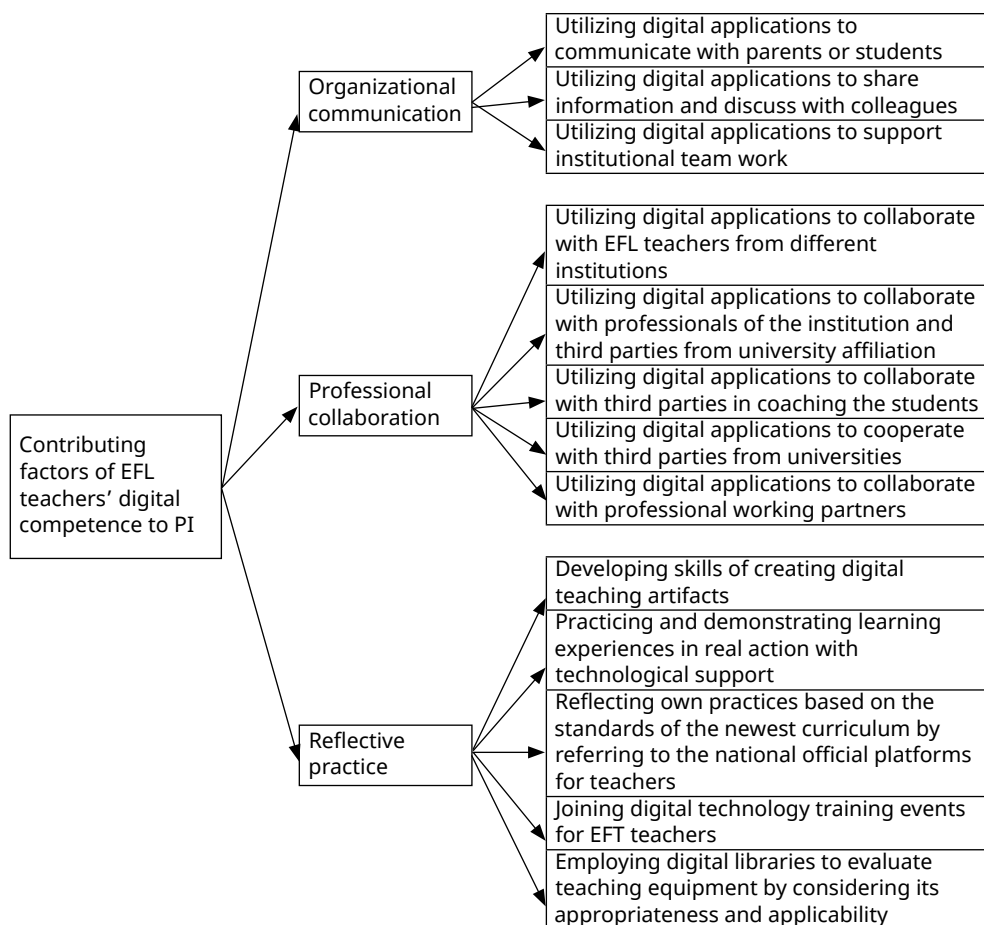


Figure 2. Contributing factors of EFL teachers' digital competence to PI

Organizational communication. EFL teachers apply digital competencies by using digital tools to aid their organizational communication. These communication techniques focus on different objectives, applications, and intended recipients. [Table 2](#) (below) outlines the specific digital competencies of EFL teachers for effectively handling their organizational communication.

The findings declare that the participants utilized digital technologies to assist the organizational communication strategies with certain objectives, applications, and intended partners. They emphasized different objectives in managing their communication with parents, students, and third parties in terms of informing the learning progress, keeping in touch with students' parents, sharing with colleagues and managing the group's projects. The participants shared a commonality in establishing the technology devices they apply to hold on to the online communication. The WhatsApp application was employed mostly by considering its effectiveness and accessibility.

Table 2. EFL teachers’ organizational communication

Participant	Sample data	Codes	Sub-theme
P1	"We have WhatsApp groups and we communicate there in either private or regular programs. For kids, parents mostly handle the communication. Therefore, we communicate via WhatsApp groups to inform them of their learning progress within two weeks including their scores, progress, and attendance. We are mostly into WhatsApp groups and social media."	Utilizing digital application to communicate with parents or students	Organizational communication
P2	"The simplest thing is the existence of applications such as WhatsApp groups as tools that are quite popular. We show students' learning progress to their parents."	Utilizing digital application to communicate with parents or students	Organizational communication
P3	"There is a community of students' parents and there is a WhatsApp group for keeping in touch with students' parents".	Utilizing digital application to communicate with parents or students	Organizational communication
P4	"Well, the internet infrastructure in our area is not sophisticated. We usually access unpaid platforms then we share with our colleagues to decide the good ones. We usually have small groups (of the WhatsApp application) to share what we've got (from the internet sources) and then we try it in our classrooms. Although we found some obstacles, the sharing colleague will help. We have small groups that have the same work."	Utilizing digital application to share information and discuss with colleagues	Organizational communication
P5	"Well, the easiest thing in relation to technology is the WhatsApp application, for instance, when we make a research group and this will continue until the service program."	Utilizing digital applications to support institutional team works	Organizational communication

(return)

P1 shared the influence of his reflective teaching praxis into his beliefs of taking a specific decision to utilize digital technology devices to cooperate with both students and students’ parents to inform the learning progress. In this respect, P2 and P3 shared their common beliefs with P1 in terms of utilizing digital applications to communicate with both students and students’ parents. However, they have distinct purposes or goals.

Students’ socioeconomic and institution’s geographic conditions also became the primary consideration of employing the exact technology devices as well as managing the collaboration effectively. In this context, P4 recognized that her institution is located in the eastern part of Indonesia, where the internet infrastructure is not advanced. Therefore, they were required to address this challenge by implementing affordable digital technology tools and fostering meaningful online collaboration with colleagues. Conversely, P5 shared her

rationale for using digital technology devices to coordinate with her research group.

Professional collaboration. EFL teachers made decisions about how to employ their digital competences to facilitate professional collaboration and cooperation, based on a range of different situations. The specific demonstration of digital competences aimed at fostering professional collaboration through the digital environment is illustrated in Table 3.

Table 3. EFL teachers’ professional collaboration

Participant	Sample data	Codes	Sub-theme
P1	“I have a WhatsApp group in which English tutors gather. We share links of materials, e-book, and learning videos.”	Utilizing digital applications to collaborate with EFL teachers from different institution	Professional collaboration
P2	“Then, we have a special digital group to share with university affiliation in order to share soft copies of textbooks for teaching. We have an online forum of faculty members of the same subjects in the parallel class. Therefore, we usually discuss the way of measuring and monitoring students’ learning progress. For students of survival level, we mostly follow our colleagues’ methods of teaching. We have cooperation with universities in Australia that give us help in terms of teaching...”	Utilizing digital applications to collaborate with professionals of the institution and the third parties from university affiliation	Professional collaboration
P3	“I asked the person (via WhatsApp chat) to be the coach since I have limited knowledge of the world outside. I usually asked other EFL teachers (via WhatsApp chat) to help me coach my students to join English competitions at university level.”	Utilizing digital applications to collaborate with third parties in coaching the students	Professional collaboration
P4	“As an example, at this moment, we have cooperation with the university. The information will be quickly delivered by using technologies.”	Utilizing digital applications to cooperate with third parties form universities	Professional collaboration
P5	“I endeavor to keep my relationship with working partners, moreover with someone that I’ve ever made collaboration with. Sometimes I only say “Hi” (via WhatsApp group) and it will be continued with discussion sessions and finally we come up with ideas.... Especially when alumni gain interest in writing scientific papers or doing research...”	Utilizing digital platforms to collaborate with professional working partners	Professional collaboration

The second sub-theme is related to the teachers’ beliefs towards the implementation of digital technology devices to engage digital competencies in professional identity in terms of making meaningful collaboration with professionals. They accentuated various situations that underlie their decision of conducting

professional collaboration using technology in terms of managing collaboration and cooperation with professionals from internal or external parties and with various aims.

Three participants shared the same commonality to utilize technology devices to collaborate with professional EFL teachers although they possessed different self-values. As an example, P1 asserted his belief behind his decision to collaborate with EFL teachers from other institutions was to share learning references. P3 maintained that her decision was to share roles of preparing students for special events. In the same vein, P5 demonstrated her importance by aligning her personal goals with the desire to collaborate with professional partners, initiating this process through casual conversations and progressing to structured discussion sessions aimed at generating collaborative ideas.

On the other hand, P2's situation led her to collaborate with universities and other third parties, leveraging digital technology to broaden their teaching programs and enhance their teaching methodologies. Besides, P4 shared her communal beliefs to utilize technology devices especially in terms of improving teaching practices by sharing teaching artifacts and teaching methods through technology application.

Reflective practice. EFL teachers' digital competences were also evident in their own teaching methods. Their reflective approaches to pedagogical practices were elements that contribute to their PI construction. [Table 4 \(below\)](#) highlights the indication of EFL teachers' reflective practices by the influence of their digital competences.

The final sub-theme of professional collaboration in teacher's digital competencies is reflective practice. The findings indicate that participants expressed various self-value regarding their preferences to critically assess and develop their pedagogical practices. P1 actively developed his pedagogical practice by modifying the teaching materials to meet learning needs.

Conversely, P2 participated in the "Driving Teacher" implemented by Indonesian Ministry of Education and Culture. She described how she extensively used technology to experiment with and showcase her learning experiences within the context of her actual teaching responsibilities. Meanwhile, P3 is also a civil servant EFL teacher in a Senior High school. She was also provided with teacher development programs by the institution and Indonesian Ministry of Education and Culture. Technology utilization was considered very important to reflect her teaching as she had to actively reflect on her teaching practices based on the newest standards of national curriculum by referring to the official national teachers' platforms.

Otherwise, the rest of the participants are faculty members. P4 actively developed her pedagogical practice by joining digital technology training events, especially the events that were held by the British Council. The events were very beneficial to critically reflect and improve pedagogical practice. Last, P5 shared her values to reflect on her own teaching, continually evaluating teaching materials to ensure they were improved, appropriate and applicable.

Table 4. EFL teachers’ reflective practice

Participant	Sample data	Codes	Sub-theme
P1	"I usually adopt materials from the sources. Before implementation in the classroom (online and offline), I modify it."	Developing skills of creating digital teaching artifacts	Reflective practice
P2	"In terms of becoming the "Driving Force" teacher in the institution, for instance when we learn about differentiated learning, we are also asked to practice and demonstrate contextual and real action."	Practicing and demonstrating learning experiences in real action with technological support	Reflective practice
P3	"The newest reference is freedom of teaching platform (official platform of Indonesian Ministry of Education and Culture). This platform is used for searching the same materials for the newest curriculum in Indonesia. In order to log in to the platform, we should have an account. In the platform, teachers can upload their activities, for instance they have best practices, new teaching styles, etc. they can upload it there.... This platform is intended to add teachers’ references."	Reflecting own practices based on the standards of the newest curriculum by referring to the national official platforms for teachers	Reflective practice
P4	"I also often join the British Council events because there are a lot of new digital technologies that are practicable and simple, thus we can try it in our teaching."	Joining digital technology training events for EFL teachers	Reflective practice
P5	"Because I’ve been teaching for a long time, I usually open the previous materials then I evaluate which one should be improved, should be modified and so on. I do not have exact technology to utilize, only pdfs and books. Sometimes I make handouts, power points and also find examples from YouTube that are appropriate and applicable then I share the link to students."	Employing digital libraries to evaluate teaching equipment by considering its appropriateness and applicability	Reflective practice

[\(return\)](#)

Digital competence manifested in EFL teachers’ professional identity

This section discloses excessive issues of EFL teachers’ values and beliefs about digital competencies towards their PI. The data analysis draws on teachers’ personal interpretative framework (Keltchtermans, 1993, 2009) that conceives teachers’ professional development based on the concept of professional self. In exploring EFL teachers’ beliefs of digital competencies manifested in their PI, two major themes emerged from the data coding: 1) task perception; and 2) job motivation.

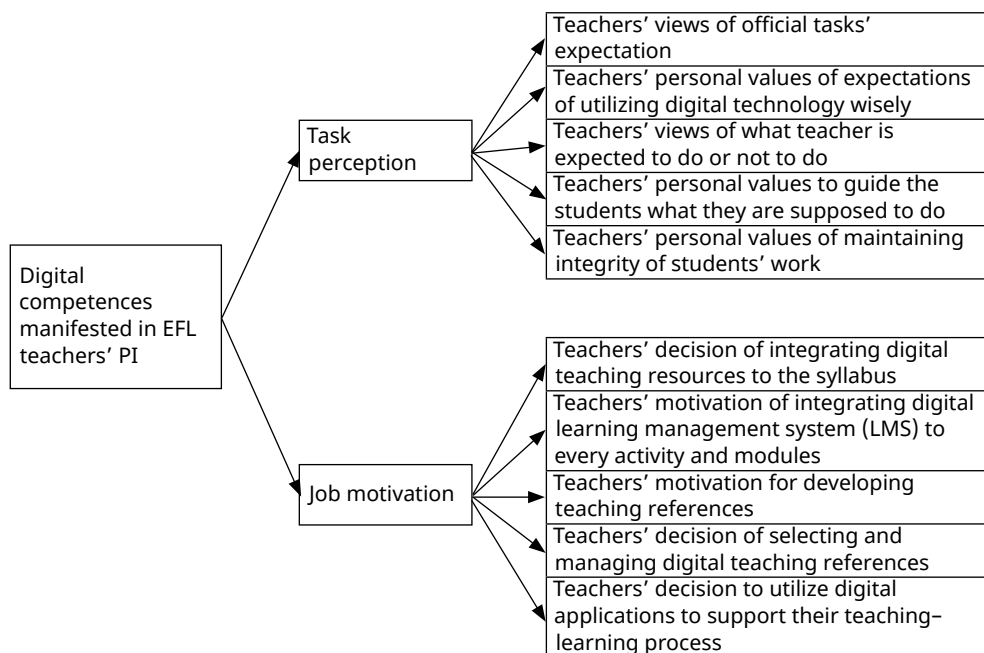


Figure 3. Digital competences manifested in EFL teachers' PI

Task perception. EFL teachers' perception of tasks was shaped by their views on digital learning environments, influencing their expectations regarding students' professional roles in completing tasks. [Table 5 \(below\)](#) presents an overview of EFL teachers' perception of tasks, focusing on how they understand their professional roles.

P1 expressed his thoughts on what he expects from students' assignments as a way to assess their learning development. Following that, P2 discussed her own beliefs regarding the responsible use of technology. She emphasized the importance of providing students with appropriate guidance to ensure they don't rely excessively on digital tools before completing their tasks. In the same vein, P3 considered that she should critically assess their acts in controlling the students' behavior in maintaining technology utilization in their learning experience.

Additionally, P4 articulated her beliefs about encouraging students to make thoughtful decisions regarding the incorporation of technology tools into their educational tasks. Moreover, P5 expressed deep concerns about plagiarism and emphasized the importance of upholding academic integrity in all assignments. She made it clear that students must take specific measures to avoid plagiarism issues.

Job motivation. EFL teachers' motivation incorporated the reasons behind individual decisions of their teaching profession. The findings indicate that EFL teachers' digital competences were reasonably applied to support professional tasks. The specific sub-themes and codes are recorded in [Table 6 \(below\)](#).

Table 5. EFL teachers' task perception

Participant	Sample data	Codes	Sub-theme
P1	"... We correct things that are lacking, things to add, things that are good enough".	Teacher's views of official tasks' expectation	Task perception
P2	"As teachers, we have to be a role model for the utilization of technology wisely. We have to remind the students or give them real examples. But the most important thing is to show them how to implement technology wisely based on certain needs..... We have to provide guidance for assignments so that it can prevent the students from utilizing unnecessary tools of technology. The instructions must be clear so that the students know what to do."	Teacher's personal values of expectations of utilizing digital technology wisely	Task perception
P3	"While the students are assigned to find information on certain topics, I go around. When I know that my students chat around, I directly remind them..... Because it is hard to control my students' actions while scrolling their smartphones, I modify the tasks and assignments. Therefore I use g-form and sometimes I use paper."	Teacher's views of what teacher is expected to do or not to do	Task perception
P4	"As an example, while the students are doing their assignments, they usually want to understand what they have to do. Therefore, I should provide clear guidance because I think the teacher should lead them first. Furthermore, because this is related to technology, I have to give them some advice, share and stimulate them about things they are supposed to do. There are many things they know and the teacher should give the chances."	Teacher's personal values to guide the students what they are supposed to do	Task perception
P5	"I always emphasize integrity (integrity of thinking, giving opinion and expressing something) especially in terms of writing or publishing works. I will not score their assignments if there is an indication of plagiarism. I also always emphasize that I will appreciate the originality even if it is just a simple work. I appreciate it more than a very good work but that is a result of plagiarism."[BREAK]"In order to avoid plagiarism, I convey to the students the way to not be indicated plagiarism. What are their ideas then they should express with their own words to avoid plagiarism issues. At least, by this method, students will learn what they are studying. If they can paraphrase, they can express something by their own words, it means that they know the strategies. I do not only forbid them, but the students also need guidance and solutions."	Teacher's personal values of maintaining integrity of students' works	Task perception

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The
JALT CALL
Journal
vol. 20 no.2

Table 6. EFL teachers’ job motivation

Participant	Sample data	Codes	Sub-theme
P1	“We have authority to create our own curriculum. Therefore, we search and select learning resources from the internet. The integration between the resources to our curriculum is through the syllabi.”	Teacher’s decision of integrating digital teaching resources to the syllabus	Job motivation
P2	“The teacher development programs in our country are very massive nowadays. The integration of digital technology is demanding since the majority of the programs integrate the learning management systems in every activity and modules. Moreover, we have to implement knowledge from the teachers’ development program in our institution thus we need to be adaptable to the technology utilization in teaching and learning.”	Teacher’s motivation of integrating digital learning management systems (LMS) to every activity and modules	Job motivation
P3	“I have just joined some workshops related to the newest curriculum of our country. These workshops mainly discuss how to add teachers’ references by the learning management system provided specifically for Indonesian teachers.”	Teacher’s motivation for developing teaching references	Job motivation
P4	“In practice, I often utilize Sci-Hub because there are huge needs but the institution could not support it. I use many references from Sci-Hub for article journal references and theories. Moreover, we also have specific groups with university affiliation to share soft copies of textbooks to teach.”	Teacher’s decision of selecting and managing digital teaching references	Job motivation
P5	“When the teaching and learning process pressure me to utilize technology, I applied one application, that was Edmodo. It is very helpful to share information related to learning references and assignment completion and collection. On the other hand, I use google scholar as references for my research because it is the easiest one.”	Teacher’s decision to utilize digital applications to support their teaching-learning process	Job motivation

(return)

EFL teachers also hold shared beliefs regarding their motivation to use digital technology when making decisions for their professional tasks. For example, P1, an English course tutor at an independent institution, has the autonomy to determine the curriculum and select learning resources suitable for the course program. Because of this, P1 is motivated to incorporate digital libraries into the syllabus design.

P2, serving as an English teacher at a state senior high school, received support through an official teacher’s professional development program in the form of a Learning Management System (LMS). This support proved beneficial as it provides resources that can be integrated into her teaching activities and modules. Additionally, following participation in workshops dedicated to enhancing teaching materials, P3 was inspired to enhance the teaching resources available through digital libraries.

P4, an English faculty member at a private university in the eastern part of Indonesia, encountered limitations within her institution that hinder faculty members from accessing teaching references, primarily due to restricted internet connectivity. To address this challenge, P4 had to determine alternative methods to access the necessary teaching resources.

Lastly, P5, a senior English faculty member at a private university, emphasized that technological advancements have led to environmental changes in her teaching methods. Consequently, she acknowledged the necessity of adaptation and has chosen to integrate digital applications to improve and bolster teaching and learning activities.

Discussion

Contributing factors of digital competence influence to EFL teachers' professional identity development

This study aimed to investigate contributing factors of digital competence to support EFL teachers' professional identity development. The observed data from interviews disclosed the contribution of organizational communication, professional collaboration and reflective practice to EFL teachers' professional engagement. This study adds to the existing literature that language, pedagogy, and organizational roles are conceptualizations of EFL teachers' professional identity (Ardi et al., 2023) and are crucial for their professional growth (Jiang, 2022).

First, in discussing the contribution of organizational communication to support EFL teachers' professional identity, technologies are employed to improve the organizational communication with parents, students and colleagues. The involvement of the organizational and professional in their professional identity development point out the requirement of collaborative efforts from the institution, students, and teachers as an ecological undertaking to perceive the utilization of EFL mobile technology-based instruction (Cahyono et al., 2023). This communication to certain organizations and levels of society facilitates EFL teachers' self-learning and multiple communities for professional development (Nguyen, 2016) since the community of practice becomes a key role in forming their professional identity (Sarani & Najjar, 2013). Moreover, in this respect, EFL teachers' roles change discursively in social interaction between parents, students, colleagues of the internal community and the broader community. This transformation in the ways EFL teachers communicate leads to EFL teachers' for having multiple identities in terms of communication using technology devices that might change in short-term and over time in social interaction (Barkhuizen, 2016) depending on target people and target of communication.

Second, digital technology engages EFL teachers' collaboration with other educators, professionals, working partners and third parties expanded from pedagogical practices and programs collaboration. This is in line with the previous study of Cattonar et al. (2007) that there is a notable connection between

how strongly pedagogical collaboration is perceived and the level of intra-school cohesion, particularly concerning the development of PI. Therefore, the English teacher forums or communities can boost EFL teachers' motivation and engagement by sharing information updates and practice of ICT utilization in English classrooms (Jamil et al., 2023). Otherwise, the active involvement, participation, and negotiation of EFL teachers within CALL communities of practice have the potential to shape and reshape their professional identity in the realm of CALL (Meihami & Esfandidari, 2021).

Third, a technological support also encourages teachers' self-reflection to their own teaching practices and assists demonstration of their learning experiences. Digital competence has also been associated with EFL teachers' self-reflection in assessing and developing their pedagogical practices and decision to create teaching artifacts. In this respect, digital competence that is incorporated to the developing skills of creating digital teaching artifacts determines the insertion of beliefs in decision making in the educational curriculum (Teo & Zhou, 2017). In this context, their professional works were supported by an educational environment which is actively promoting advanced digital competence and digital transformation. Their workload indicates that their working as professionals is parallel to their school activity (Boldrini et al., 2019) and represents personal variables influencing digital competence.

Regarding the technological support to EFL teachers' pedagogical practices, teaching artifacts and assessments, it was also stated by the participants that digital libraries play a significant role in fostering ideas for development and creativity in creating English teaching materials and assessments. The employment of digital libraries to determine the appropriateness and applicability of teaching artifacts indicates that developments in teaching EFL with an advanced level of digital competence may depend on factors of innovative assessment practices, effort to link theories with practice, and reflection (Røkenes & Krumsvik, 2016). Reading digital references also contribute to ideas development and creativity to develop teaching materials (Wulandari et al., 2021). In harmony with Bandrés et al. (2021), teachers' point of view related to decision making in creating digital teaching artifacts shows their different perspective on the effectiveness of technological integration for the development of 21st century skills.

In addition, in terms of having efforts to gain technological support for EFL teachers' pedagogical practices, several participants acknowledge that digital technology training plays a central role in supporting the integration of digital technology into pedagogical practices. This is in line with Santos et al. (2021) that digital technology training or CALL teachers' preparation program events can play a constructive and positive role in the development of EFL teachers' professional identity. The incorporation between learning new contents and pedagogy in the technology training programs and teachers' reflective practice contemplate their professional experiences that bridging the formation of EFL teachers' professional identity (Richards, 2023; Sulistyo et al., 2017). These CALL teachers preparation programs are attributed to the program's capacity to inspire and encourage EFL teachers to incorporate the knowledge gained

from the programs into their teaching practices (Nguyen, 2022; Meihami & Esfandidari, 2021) and to configure their professional selves (Ardi et al., 2023). It has been compromised to provide more training in ICT to enhance teachers' digital competence (Santos et al., 2021; Bandrés et al., 2021, Biesta, 2017; Villegas et al., 2018).

The other important area to discuss is the significant effect of age on the overall digital competence. Age becomes one variable that indicates EFL teachers' digital competence in some previous literature (Hinojo-Lucena et al., 2019; Lucas et al., 2021) specifically on the ability to select and create digital resources for teaching, yet others found its negative impact (Guillen-Gamez et al., 2020; Tondeur et al., 2017). In this study, there are three participants aged between 30–40 years old. The other 2 EFL teachers (participant 3 and participant 5) are over 50 years old and have been teaching for more than 20 years. The two oldest teachers clearly stated that they found difficulties to implement technology devices in their teaching. They asserted that they could not spontaneously employ technology devices, but they needed help, and this advancement took much time to prepare.

Participant 3 maintained that even she joined CALL teachers' preparation programs or technology training workshops; however, without practicing it would be easily forgotten. In practice, due to being an old EFL teacher, she utilizes technology devices in teaching activities only about fifty percent of time. In addition, participant 5 argued that while she may lack proficiency in using computers, she strives to learn from her younger colleagues as technology continues to advance rapidly. In sum, both of participants agreed that age variance can possibly lead to digital competence. In other words, age variance determines the differences in digital competence (Hinojo-Lucena et al., 2019; Lucas et al., 2021; Tondeur et al., 2017) while technical competence and self-confidence of employing technology determine technology proficiency (Al Khateeb, 2017).

One of our participants is from the eastern part of Indonesia in which the technology has not been very well developed. Khatri (2019) states that mobile telecommunication providers cover mainly areas in Java because of the high need for the internet to support urban areas. Unequal internet access appears to be a common problem of the quality of education in all parts of Indonesia, especially educational institutions located in rural areas including the eastern part of Indonesia. Participant 4 could not achieve the effective technological adoption in her teaching although she perceived digital technology training from her previous university abroad and professional training of technology to assist ELT such as British Council etc. This finding against Santos et al. (2021) who point out that effective technological adoption is not always aligned with access to technology but teachers' attitude to associate digital tools with their digital competence. Besides, the unavailable infrastructure leaves out the effective technological adoption by teachers.

Digital competence manifested in EFL teachers' professional identity

In inquiring EFL teachers' digital competence manifested in their professional identity, this study has enriched the body of literature by confirming teachers' excessive values and beliefs of their digital competence based on the concept of Teachers' PI. Task perception and job motivation were found as interplays conceiving teachers' digital competence in their professional development. EFL teachers shared communal beliefs about what is important in effective language teaching and what language teachers' professional identity they should embody (Celebi, 2021) and teacher's self-motivation to continue learning is crucial for their professional development (Wulyani et al., 2019). The findings also echoed the previous study of Wang (2021) that numerous factors influence the utilization of educational technology, including experience in teaching and learning, emotional considerations, teacher beliefs, motivation, and socio-cultural factors.

First, unraveling EFL teachers' views on their professional self-understanding of task perception, EFL teachers' personal experiences determine their values and beliefs that affect how they clearly view and expect students' tasks. In harmony with Kao and Lin (2015), teachers' professional identity incorporates internal factors such as personal life experience, personal values and future expectations of technology utilization in education and external factors. In this respect, EFL teachers' self-understanding and personal values towards the implementation of digital technology into English tasks also determine their expectations of its utilization and negative impact. This directs them as a precedent of maintaining its utility wisely, in other words, maintaining students' integrity. As a result, teachers strengthen their personal values in their own actions to maintain students' integrity is a powerful shield to strengthen their commitment as professionals and construct their professional identity (Thomson & Palermo, 2014).

Furthermore, in relation to EFL teachers' self-understanding of task perception, it has been noted that teachers' subjective experience, critical self-evaluation and cultural observation result in personal values to build students' future citizen characteristics that are viewed and expected from students' tasks. In harmony with this perspective, Elseikh (2016) maintains that the discursive constructions between teachers' experiences influence how they consider themselves as future teachers and professionals in preparing students as future part of society in the years to come. In this regard, the personal and professional experiences that are deeply rooted in the individual's personal beliefs especially in expecting students' tasks influence the development of language teacher identity (Bukor, 2015).

Second, disclosing EFL teachers' job motivation as a decision to their teaching profession, EFL teachers desired to improve their pedagogical practice by integrating the digital teaching resources into the syllabus and teaching activities as well as developing online teaching references to serve an effective language teaching. The development of teaching resources and decision of selecting and managing digital resources point out the interrelationship between EFL teachers' professional identity and degree of investment in their academic and

professional activities (Mora et al., 2016). How EFL teachers integrate, manage, select and develop digital resources to their pedagogical practice as a part of professional identity development direct to their knowledge development. Zivkovic (2016) examined that self-esteem can predict teachers' professional identity, in which one of the indicators is knowledge development.

In harmony with Ostad et al. (2019), self-motivation towards the teaching profession drives language teacher's commitment to their job as they endeavor to improve instructional skills, knowledge, and pedagogy since they desire to do their best. The tendency towards encouraging teachers to enhance their expertise, teaching methods and pedagogical approaches reflects some of the essential components of their professional identity (Ostad et al., 2019). These enhancements lead to their satisfaction towards their profession. The more teachers' satisfaction and commitment to their profession, the more effectively their professional identity develops. Consequently, this leads to higher job satisfaction and increased dedication among teachers (Ostad et al., 2019).

In addition, it has been asserted by a participant that one exertion of digital teaching resources integration to improve pedagogical practice is by employing a digital LMS provided officially by the Indonesian ministry of education and culture as an official platform for teachers' professional development in Indonesia. The LMS connects teachers from other communities and engages them in multiple communities. As a result, these professional communities expand their pedagogical practices and discourses to other communities that are sufficient to develop teachers' professional practice and identity (Nguyen, 2016).

Conclusion and implications

The inevitability of colossal transformation to online learning has mediated dynamic alteration to EFL teachers' professional identity development. Digital competence has been noticed to robust conceivable benefits for supporting EFL teachers' professional identity development in this 21st century learning era. This study carries out theoretical benefits to highlight EFL teachers' digital competence as a part of their professional development especially to add to the existing literature of DigCompEdu.

Data analysis accentuated how, in general, digital competence was observed as a contributing factor to EFL teachers' professional development. In this respect, it not only supports their professional communication and collaboration, but also pedagogical practice development and professional self-understanding or reflective practice. This refers to the fact that EFL teachers have multiple identities that are possible alternately in social interaction and pedagogical implication, therefore the community of practice performs a fundamental role in shaping their professional identity. In doing so, EFL teachers should consider their different perspectives and beliefs in decision making. This might involve them achieving a higher level of digital competence, for instance by joining digital technology in education training events.

This study has also enriched theoretical perspective contribution on the

concept of TPI framework by confirming teachers' excessive values and beliefs of digital competence towards their professional identity development. Data analysis unraveled how EFL teachers direct their personal values in determining ways technology devices are utilized by students to perform their task. Teachers' personal and professional experience served as fundamental roots to influence their professional identity development especially to strengthen commitment to their job and to consider themselves as future teachers and professionals. This study also recorded EFL teachers' job motivation to serve as effective language teachers by integrating, managing, selecting and developing digital references to improve their pedagogical practices as a part of their professional identity development.

These findings, therefore, shed light on how EFL teachers enact the interplay between digital competence and professional identity development. First, the narrated experiences voiced from the live practices can be a precedent for the future enactment of EFL teachers' professional development. Second, the findings of the present study can draw beneficial implications for EFL practitioners to direct connectivity into their contextual experiences. Third, the outlined beliefs and values from the participating teachers spotlights as the baseline for institution, government, and other nested education stakeholders to provide practical support toward teachers' digital competence development.

However, apart from the constructive contribution, we realize that this study has some limitations. The data collection relying on teachers' narratives from the interview has made the data restricted in terms of lack of heterogeneity. This calls for an extension to carry out similar issues using varied instruments of data collection including teaching artifacts (syllabus, teaching materials, teaching media, online resources, etc.) to enrich the data. Next, the inability to observe EFL teachers' actual experiences behind the screen and beyond their stories has limited the study to observe and to access the whole aspect of teachers' professional development. Therefore, future study is suggested to picture similar issues using ethnographic study that immerses the researchers in teachers' context. Finally, in this study, plenty of online tools and platforms appear as potential environments to improve their pedagogical practice, hence whether they employ it to improve their target language proficiency remain absent. Therefore, future study is suggested to contribute to this issue.

Acknowledgement

The author expresses her gratitude to Lembaga Pengelola Dana Pendidikan/LPDP (Indonesia Endowment Fund for Education), Ministry of Finance, the Republic of Indonesia, for providing financial support for magister study at Universitas Negeri Malang, Indonesia.

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Appendix

Interview guideline

1. How do you use digital sources and resources for continuous professional development?
2. How do you integrate technology to support the learning process and to foster the connectivity between theory and practice?
3. How do you serve as an effective role model of technology utilization in the learning process in terms of recognizing reliability and being responsible for technology use?
4. How do you use digital technology to foster connectivity with learners, parents, and system learning locations (i.e., school, workplace and branch courses)?
5. How do you use digital technology to collaborate with colleagues, professional trainers and external partners?
6. How do you use digital technology to monitor and assess students' learning as well as provide effective feedback?
7. How to prepare learning activities that require students to utilize digital technology?