

Uncovering Digital Competence in Language Instruction: A Study of Pre-Service English Teachers in Saudi Arabia

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Abstract—the role of technology as a catalyst for change and development has become irrefutable in various language learning settings. However, not all language teachers are mindful about using technology in their language teaching practices, owing to their lack of adequate digital competencies. The purpose of this research is to promote digital competencies and related components among the study participants. This investigation applies the Framework of Competency Profile for digital teachers. The results were obtained by quantitative analysis, using data collected from a sample of 151 language learners, all enrolled in BA English language programmes across 8 universities in Saudi Arabia. These learners are considered pre-service English language teachers, as they are near graduation. The findings demonstrated participants' highest and lowest digital competences, leading the researcher to identify practical implications, particularly regarding how to conduct training to compensate for low competencies. The findings also revealed that there is no correlation between levels of study and digital competencies. There was also no influence of gender on digital competencies. From these findings, the researcher concluded that the identification of competencies is essential for instructors, educators, administrators, and policymakers, in order to design more effective and appropriate training programmes for teachers in each context. Finally, the findings provided realistic analysis of the components and sub-components related to digital competencies among the target audience.

Index Terms—Saudi teachers of English, CALL, computer-enhanced language instruction, teachers' digital competences

I. INTRODUCTION

Technology is constantly altering many procedures for professionals in various fields, including those in language teaching. The development of social media and communication tools has transformed 21st century education and the skills necessary for teaching. Digital competencies have moved from recommendations to requirements as they become increasingly normalised (Hepp et al., 2015; Ismailova et al., 2018) in the daily life of people around the globe. However, it is argued that this technological transition is not fully realised in the field of education, including language learning and language teacher training (Biletska et al., 2021). Accordingly, several calls have been made to explore the influences of digital competences more deeply among future (pre-service) foreign language teachers, considering any differences in gender and level of study (Fraile et al. 2018). It is claimed that teachers and individuals in teaching professions may face more challenges in handling some digital skills than professionals in other fields, i.e., weaknesses in problem-solving skills (Hänäläinen et al., 2019).

Several researchers have shown the impact of digital competencies among future language teachers, but their studies were considered inadequate and invalid for generalisation (Lázaro-Cantabrana et al., 2019; Alarcón et al., 2020). Digital competence refers to the ability to create sound practices, using digital tools appropriately in different settings (Saienko & Lavrysh, 2020). Krumsvik et al. (2016) found that there is a relationship between the digital competences of language teachers and their demographics. Çebi and Reisoğlu (2020) also concluded that training teachers supported their development in different areas, taking into consideration differences in gender and perceived levels of digital competence. Significant progress has emerged in education because of the Fourth Industrial Revolution, which has supported emerging technologies, artificial intelligence and the Internet of Things. Ally (2019) affirms that future teaching, including language learning, will be autonomous and adaptive to meet the demands of every individual learner.

The present research has adopted a quantitative methodology, using a comprehensive questionnaire based on Ally's (2019) competency profile for digital teachers. This research also aims to draw the attention of future teachers to the significance of technology in language teaching, the necessary skills for the 21st century and the competencies required by digital teachers to function effectively. The current research offers support for professionals to be better users of digital resources in their language learning classes, integrating new tools in different learning settings, as well as forming connections between those tools and conventional teaching methodologies. In sum, this research seeks to explore the level of digital competences among pre-service language teachers currently, in terms of their skills and readiness. This study ascertains which digital skills are most desirable to develop for better implementations and practices in online and hybrid language teaching. The research questions discussed in the current research are as follows:

RQ1: What are the highest digital competencies currently existing among pre-service English language teachers (with excellent capabilities)?

RQ2: What are the lowest digital competences currently existing among pre-service English language teachers (with weak capabilities)?

RQ3: Is there any relationship between the level of study (i.e., beginner/intermediate/advanced levels) and the willingness to possess more digital competences among pre-service English language teachers?

RQ4: Is there a difference between male and female pre-service English language teachers, in terms of possessing more digital competences?

II. LITERATURE REVIEW

A. *Language Competence and Digital Competence*

Language competence refers to the instinctive knowledge of grammar and vocabulary that enables individuals to use, understand and produce language. Language competence is a multidimensional system comprising specific semantic, syntactic, morphologic and pragmatic knowledge relating to the target language (Saxton, 2010). According to Troesch et al. (2016), language competence enables individuals to communicate with others, interpret their behaviours and messages, achieve their needs and establish friendly ties with peers. Therefore, such competence is seen one of the core capabilities that has shown a profound impact on the acquisition of second language learning (Abdulrahman & Abu-Ayyash, 2019). Language competence is assessed by language inventories, language tests and measuring the mean length of utterances. As part of communication and understanding language, McLaughlin (2006) distinguished between senders, who are responsible for encoding language, and receivers, who comprehend language. Similarly, Barre et al. (2011) differentiated receptive and expressive skills, both of which are needed for language competence. Receptive skills include understanding a message from one another, while expressive skills involve a message to another person where feelings, likes, dislikes etc. are expressed.

In addition, 'language competence' is often used interchangeably with 'linguistic competence', a term coined by Chomsky since the 1960s. He distinguished between competence, what people know about language and performance, how they use their knowledge of language in real contexts. Chomsky's conception of linguistic competence was later extended by Hymes (1976) who added the positive role of communication in language learning. Accordingly, communicative competence is a skill that enables users to communicate based on changing situational and normative conditions of psychological, social and linguistic nature. Matthews (2006) explained that Chomsky considered speakers of a given language as 'competent' if they had knowledge of that language's grammar, with the possibility that they could also pursue language acquisition. Reflecting changes in the field of language acquisition, the Common European Framework of Reference for Languages (CEFR) defined linguistic competence as also including communicative, sociolinguistic and pragmatic competences. Gràcia et al. (2022) argued that linguistic competence is determined via active participation at different communication situations using expressive linguistic and non-linguistic resources and creating coherent messages with different communicative intentions either for oral or written communication.

The second key aspect of this research is digital competence, which has been diversely defined and described for different purposes. One common definition is 'the confident, critical and responsible use of the technologies from the society of information for work, entertainment and education' (Council of the European Union, 2018, p. 9). Ilomäki et al. (2016, p. 655) defined digital competence as 'an evolving concept related to the development of digital technology and the political aims and expectations of citizenship in a knowledge society'. It is a multidimensional concept that combines several areas, including media and communication, technology and literacy and information science. In agreement with Instefjord and Munthe (2016), digital competence consists of three types of knowledge: technology proficiency, pedagogical, compatibility and social awareness.

'Digital competence' usually includes communication technology and digital literacy. However, the usage of 'literacy' and 'competence' may differ according to different geographic locations. For instance, digital competence' is preferred in continental Europe, while 'digital literacy' is more common in the UK (Spante et al., 2018). For many researchers, 'digital competence' includes ethical and safety issues, as well as their social dimensions (Foulger et al., 2017). In view of this lack of consensus on whether the terms 'literacy' and 'competence' are similar or dissimilar, a possible distinction was suggested by Ilomäki et al. (2016). They claimed that 'competence' involves skills required for understanding today's society, while 'literacy' deals more with the fulfilment of needs relevant to computer, information and media knowledge. The United Nations Educational, Scientific and Cultural Organisation (UNESCO 2004, p. 13) defines literacy as follows:

the ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential and to participate fully in their community and wider society.

In addition, digital competence has been identified by the European Commission as one of the eight core areas essential for life skills, which are seen as precursors for personal fulfilment and development, active citizenship, social inclusion and employment in a knowledge society (Napal Fraile et al., 2018). Adabas and Kaygin (2016) recommend

additional qualities for university graduates, including teachers, to obtain better employment opportunities: communication in the mother tongue and in foreign languages, sufficient knowledge of technology and technological tools, learning to learn, creating a sense of initiative and entrepreneurship and expressing cultural awareness. In addition, McGarr et al. (2021) argued that digital competence should meet individuals' competences in collaboration, communication and social and cultural knowledge (including citizenship), along with users' capacities for creativity, critical thinking, productivity and problem solving.

B. Digital Competence and Future Language Teachers

As a result of digitalisation and technological development, digital competence has become a prerequisite of the present; individuals must be capable of using it. The shift towards digitalisation increasingly affects the regular routine of individuals; for language teachers, this includes their continuous professional development and academic practices (Engeness, 2021). Ayranci and Başkan (2021) redefined teaching competences to include knowledge and skills related to digital competence. In fact, digital competence has become an indicator for quality education in the prosperous societies and economies of the 21st century (Maderick et al., 2016). Furthermore, digital competence has already been established as part of school textbooks, assessment tests and classroom practices.

Satisfactory awareness and knowledge of digital competence includes the recognition of positive and negative roles technologies play in learning, for both students and teachers; such tools can add power and innovation. Ferrari (2013) stressed that digital competence is a key principle to personal development in our digital era and an indicator for the possibility of integrating digital technologies into the educational process. Ferrari (2012, p. 30) defined digital competence as follows:

the set of knowledge, skills, attitudes, abilities, strategies and awareness that are required when using information and communication technology (ICT) and digital media to perform tasks; solve problems; communicate; manage information; collaborate; create and share content; and build knowledge effectively, efficiently, appropriately, critically, creatively, autonomously, flexibly, ethically, reflectively for work, leisure, participation, learning, socialising, consuming and empowerment.

In the past decade, there has been an increase in the number of frameworks for teachers' digital competence, showing how technology can be used as a catalyst for learning, such as the European Commission's DigComp 2.0. These frameworks provide educators guidelines and practical steps for how digital technologies can be executed to enhance education (Johannesen et al., 2014). DigComp serves as a reference framework for digital competence, featuring a list of sub-competences, with multiple levels of achievements (Ferrari, 2013). Redecker (2017) categorises the knowledge of digital competence into six major areas: 1) professional engagement, 2) digital resources, 3) teaching and learning, 4) assessment, 5) empowering learners and 6) facilitating the digital competence of learners. Furthermore, part of understanding digital competence is familiarity with its associated standards. UNESCO released the ICT competence standards, known as the Literacy Global Framework, for teachers to develop their digital awareness and understanding globally (Law et al., 2018). ICT underpins numerous skills, mostly related to using computers and portable devices to 'retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet' (European Parliament and the Council of the European Union 2006). The main dimensions of UNESCO's ICT competence framework comprised technology literacy, knowledge deepening and knowledge creation, with six secondary aspects of teachers work: understanding ICT in education curriculum assessment, pedagogy, ICT, organisation, administration and teacher professional learning (Yang et al., 2021).

As far as future language teachers are concerned, they are expected to be tech-savvy, using various forms of technology in everyday life and being able to implement such tools in the process of language teaching (Guillén-Gómez et al., 2020). The field of teaching and learning in the present time is moving with unprecedented speed to adopt the latest inventions and emerging technologies (Castaño-Muñoz et al., 2018). This development has led to establish what is known as 'knowledge society' for the promotion of economic growth including its associated practices: to identify, produce, process and transform information for the human development and social and economic progress (Zhao et al., 2021). Indeed, digital competence for language teachers is crucial to this growth; it helps them to be more willing to accept, integrate and adapt new technologies. Those skills, and recommended practices, can be modelled and delivered for language learners in classes and out-classes as those tools are expected to positively increase performance and information literacy among individuals (Hatlevik & Hatlevik, 2018), which ultimately everyone is willing to contribute to the economic social growth. Meirovitz et al. (2022) emphasise that future teachers, including English language teachers, need to be autonomously using various digital tools with self-confidence to attain desirable pedagogical outcomes and to become more able to suitably spread the culture of utilising such tools more effectively in classes.

C. Professional Development for Digitally Competent Language Teachers

The term professional development has been variously defined since the 1990s. Parker (1990) defined professional development as those processes that deal with the improvement of job-related knowledge, skills or attitudes of teachers, empowering them to design instructional programmes and to improve students' learning outcomes. Earley and Bubb (2004) considered professional development a set of activities to be skilfully planned and conducted to promote the expertise and knowledge of teachers. Professional development focuses on constructing capabilities among educators. It also concentrates on enriching individuals and teams and establishing schools as commodities of professional learning

(Osmond-Johnson et al., 2019). Chu et al. (2017) asserted that the professional development of teachers is essential to enhance teachers' knowledge and skills, and should be one of the top priorities of the 21st century. However, this practice is still surrounded by several challenges, such as establishing innovative practices in teachers' programmes, altering conventional institutional practices and promoting educators' resilience and commitment to constant learning (Caena & Redecker, 2019).

As stated earlier, unprecedented technological advancement has taken place in the last decade of the 21st century. This instant growth has resulted in an enormous need for language teachers to consider such latest technologies and how they can be integrated in the teaching profession (Maiier & Koval, 2021). Language teachers' professionalism refers to owning and taking control of ample amounts of knowledge, information skills, understanding of students, curriculum, legislation and various pedagogical practices and teaching activities (Zakharov et al., 2022). Professional development of teachers also includes giving attention to the encouragement of learners to use various learning resources on a frequent basis and to make use of the available tools throughout the process of learning. Professional development, in a digital context, involves the ability to select, analyse and assess digital resources for foreign language teaching; to maintain the privacy of personal information; to create, store and share digital information safely; to select and use authentic information from the internet; and to maintain the privacy of personal information (Maiier & Koval, 2021).

Professional development includes pre-service and in-service language teachers. In addition, pre-service (future) teachers should understand that continuous use of available tools and social media do not mean they are digitally competent (Li & Ranieri, 2010). They have further opportunities to enhance their digital practices. According to Elstad and Christophersen (2017), many educators are not adequately prepared to use technology for instruction and language teaching practices. They argue that individuals may seem technology-capable, yet they have a lack of in-depth understanding of technology, the ability to use specific tools for specific purposes and the skills that are needed for each technology (Biggins et al., 2017). Teachers are supposed to be professionals able to design digital environments (Falloon, 2020). They must be able to create various online modules according to the desires of the students and the modules' requirements, including the use of Massive Online Open Courses (MOOCs) and LMS (Engeness, 2021). These demands on future teachers, necessitate sufficient digital education, well-improved digital identity and professional lifelong learning (Instefjord & Munthe, 2016).

Adequate training can provide future teachers with robust understanding and deep knowledge concerning information and data literacy, communication and collaboration, digital content creation, safety and possible problem solving in this context (Çebi & Reisoğlu, 2020). Teachers undertaking training need be positioned at the centre of professional development for creating collaborative activities and targeting individuals' needs (Karlberg & Bezzina, 2020). These practices are responsible for making high-quality, cutting-edge teachers and effective educational systems. McGarr and McDonagh (2021) suggested that the existence of a sound level of digital competence among pre-service teachers should be seen as a condition for entering teacher education programmes. Schools and higher education institutes are responsible for the provision of sufficient IT-related infrastructure, digital resources and good connection to the Internet, as they play a key role in creating a successful environment for language teachers' digital competence (Hökkä & Eteläpelto, 2014; Gaskell, 2018). Wu et al. (2022) have drawn attention to the outcomes of such training programmes, which seek to enhance teachers' perceived usefulness of ICT and relevant digital tools, information processing skills and information ethics and possible risks. There are suggested techniques to promote this practice, encouraging teachers to discuss cases and communicate with experts in educational technology (Chen et al., 2019). It is also recommended that teachers should join online and in-person learning communities to increase their digital skills (Schaik et al., 2019).

III. METHODOLOGY

Context, participants, and data collection

This research was conducted in the context of Saudi Arabia over a period of one academic year (two academic terms). Digital learning in Saudi universities has become a vital component in the Kingdom's Vision 2030 plan. There are also clear signs of moving towards adapting more technologies in various educational stages, including universities, enabling students to learn with these tools in a more professional way. Moreover, training teachers on the technological skills associated with teaching represents an important goal to support a knowledge-based economy and to boost professional development for teachers in Saudi Arabia. In general, digital transformation in Saudi has been accelerated, including the establishment of new programmes for language teachers, enhancing their digital skills, relevant learning tools, curriculum materials and enrichment resources.

One hundred fifty-one male and female future language teachers agreed to participate in this study by completing the research questionnaire, which was built on the Framework of Competencies Profile of Future Digital Teachers (Ally, 2019). A Likert scale was designed, ranging from very weak to excellent. All participants were university students studying English as a foreign language at advanced levels (i.e., academic levels five, six, seven and eight) at colleges of Arts, Education, and Language and Translation. Students at academic level eight (last term at the college) normally do practicums or internship in schools. They typically graduate with linguistic competencies ranging between independent user and proficient user, according to CEFR, which is equal to 5.5–6.0 in IELTS scores. The participants came from various universities located in five different places in Saudi Arabia, representing different cultural norms (i.e., cities and

districts). This cultural diversity reflects variation in digital competences and using technology in general. Participants were considered future (and pre-service) language teachers because they were set to graduate soon in the field of English language teaching. The researcher tried his best to reach the best students (future language teachers) who could fully understand every single item, its meaning, and its implications.

This research adopted the quantitative research methodology, with data collected mainly through the Framework of Competences Profile of Future Digital Teachers, which was developed by Ally (2019). The data was analysed by SPSS using various statistical analyses, including descriptive analyses and correlation to explore the highest and lowest digital competences among the participants, as well as to figure out the relationships and differences concerning gender and level of study. This framework was suggested based on real experiences, but it has not been piloted on teachers in these local, national and international settings. The framework consists of 92 sentences for participants to complete in order to self-assess their digital competencies. It covers nine major sections: 1) basic characteristics (general); 2) competence of knowing how to use technology (using digital technology); 3) competence of developing learning resources for learners (developing digital learning resources); 4) competence of selecting learning resources for learners (re-mixing digital learning resources); 5) competence of communicating well with learners (communication); 6) competence of facilitating learning for learners (facilitating learning); 7) competence of using pedagogical strategies for learners (pedagogical learning); 8) competence of assessing performance for learners (assessing learning); and 9) competence of becoming a role model for learners (personal characteristics). This framework was adapted, with minor adaptations, to fulfil the objectives and rationale of the research in its local setting. It was shortened to 71 sentence items to make it more responsible and suitable to the allowed time of the participants.

Some items in this framework were deleted for reasons of practicality; either they were considered too general or were difficult for participants to understand or were repetitive. For example, the following items were deleted for being too general: *teach students life skills*; *keep up with emerging learning technologies to use in education*; and *ability to independently learn how to use new technology and software*. Items that were deleted for redundancy or potential confusion included the following: *keep current in the content area to facilitate learning*; *adapt to emerging technologies*; and *ability to change strategies on the fly when supporting the learner to meet the learner needs*. Items were also modified to be more understandable to the learners by adding the pronoun 'I', as well as including more verbs to make certain items more appealing to the participants. Some lexical items were replaced by others such as E3. *Design good digital citizenship model*; I4. *I can enable learners to be a lifelong learner*; and I8. *I can work with learners' individual differences*.

IV. RESULTS

This research investigated four main issues: the highest digital competencies already available among future English language teachers; the lowest digital competences that occurred among participants; the relationship between the level of study and the willingness to possess more digital competences among participants; and the differences (if any) between participants' genders and their possession of more digital competencies. Based on the descriptive analysis, the findings have shown that the participants achieved the three highest scores for the following competencies: motivating students to learn (44.4%); demonstrating flexibility and adaptability during the constant changes of the modern age (43.0%); and encouraging creativity among learners (41.1%), as shown in Tables 1, 2 and 3.

TABLE 1
I CAN MOTIVATE STUDENTS TO LEARN

| | Frequency | Percent | Valid percent | Cumulative percent |
|-------|-----------|---------|---------------|--------------------|
| 1 | 3 | 2.0 | 2.0 | 2.0 |
| 2 | 12 | 7.9 | 7.9 | 9.9 |
| 3 | 29 | 19.2 | 19.2 | 29.1 |
| 4 | 40 | 26.5 | 26.5 | 55.6 |
| 5 | 67 | 44.4 | 44.4 | 100.0 |
| Total | 151 | 100.0 | 100.0 | |

TABLE 2
I AM FLEXIBLE AND ADAPTABLE IN THE MODERN DIGITAL AGE

| | Frequency | Percent | Valid percent | Cumulative percent |
|-------|-----------|---------|---------------|--------------------|
| 1 | 3 | 2.0 | 2.0 | 2.0 |
| 2 | 1 | 0.7 | 0.7 | 2.6 |
| 3 | 35 | 23.2 | 23.2 | 25.8 |
| 4 | 47 | 31.1 | 31.1 | 57.0 |
| 5 | 65 | 43.0 | 43.0 | 100.0 |
| Total | 151 | 100.0 | 100.0 | |

TABLE 3
I CAN ENCOURAGE CREATIVITY

| | Frequency | Percent | Valid percent | Cumulative percent |
|---------|-----------|---------|---------------|--------------------|
| 1 | 3 | 2.0 | 2.0 | 2.0 |
| 2 | 8 | 5.3 | 5.3 | 7.3 |
| Valid 3 | 30 | 19.9 | 19.9 | 27.2 |
| 4 | 48 | 31.8 | 31.8 | 58.9 |
| 5 | 62 | 41.1 | 41.1 | 100.0 |
| Total | 151 | 100.0 | 100.0 | |

On the other hand, the findings have also shown that participants achieved the three lowest scores for the following competencies: modifying learning resources/materials to make them more aligned with learning outcomes (19.9%); designing lessons according to the digital citizenship model when using social media to communicate with learners and peers (21.2%); and developing learning materials to meet learners' specific needs (21.9%), as shown in Tables 4, 5 and 6.

TABLE 4
I CAN MODIFY THE LEARNING RESOURCES TO ALIGN WITH THE LEARNING OUTCOMES

| | Frequency | Percent | Valid percent | Cumulative percent |
|---------|-----------|---------|---------------|--------------------|
| 1 | 5 | 3.3 | 3.3 | 3.3 |
| 2 | 12 | 7.9 | 7.9 | 11.3 |
| Valid 3 | 56 | 37.1 | 37.1 | 48.3 |
| 4 | 48 | 31.8 | 31.8 | 80.1 |
| 5 | 30 | 19.9 | 19.9 | 100.0 |
| Total | 151 | 100.0 | 100.0 | |

TABLE 5
I CAN DESIGN FOR DIGITAL CITIZENSHIP MODEL WHEN USING MEDIA TO COMMUNICATE WITH LEARNERS AND PEERS

| | Frequency | Percent | Valid percent | Cumulative percent |
|---------|-----------|---------|---------------|--------------------|
| 1 | 10 | 6.6 | 6.6 | 6.6 |
| 2 | 10 | 6.6 | 6.6 | 13.2 |
| Valid 3 | 52 | 34.4 | 34.4 | 47.7 |
| 4 | 47 | 31.1 | 31.1 | 78.8 |
| 5 | 32 | 21.2 | 21.2 | 100.0 |
| Total | 151 | 100.0 | 100.0 | |

TABLE 6
I CAN DEVELOP LEARNING MATERIALS TO MEET SPECIFIC LEARNERS' NEEDS

| | Frequency | Percent | Valid percent | Cumulative percent |
|---------|-----------|---------|---------------|--------------------|
| 1 | 1 | 0.7 | 0.7 | 0.7 |
| 2 | 16 | 10.6 | 10.6 | 11.3 |
| Valid 3 | 50 | 33.1 | 33.1 | 44.4 |
| 4 | 51 | 33.8 | 33.8 | 78.1 |
| 5 | 33 | 21.9 | 21.9 | 100.0 |
| Total | 151 | 100.0 | 100.0 | |

As far as the relationship between various levels of study and the willingness to earn more digital competencies, the findings have shown that there is a positive but weak relationship (correlation) between levels of study of participants and their willingness to gain more digital competencies, as shown in Table 7. This correlation is not at all significant since 0.102 is nearer to 0 than it is to 1. This means that there is no significant relationship between the willingness to increase digital competencies and the various academic levels of study of participants (levels 5, 6, 7 and 8).

TABLE 7
CORRELATION BETWEEN LEVELS OF STUDY AND GAINING MORE DIGITAL COMPETENCES

| | | Levels of study | A |
|----------------------|-----------------------|-----------------|-------|
| Level/ year of study | Pearson's correlation | 1 | 0.102 |
| | Sig. (2-tailed) | | 0.212 |
| | N | 151 | 151 |
| A | Pearson's correlation | 0.102 | 1 |
| | Sig. (2-tailed) | 0.212 | |
| | N | 151 | 151 |

Finally, this research explored the differences between male and female participants, in terms of their digital competencies. The findings showed that the mean scores in female and male groups were quite similar (3.87 and 3.78), as shown in Table 8. The standard deviations for both mean scores were between 0.856 and 0.920, which were considered low variance, as they are lesser than 1. This means that these scores fit within a standard normal distribution.

TABLE 8
GROUP STATISTICS

| | Gender | N | Mean | Std. deviation | Std. error mean |
|-------------------------------------|---------|----|--------|----------------|-----------------|
| Possessing more digital competences | Females | 85 | 3.8706 | 0.85619 | 0.09287 |
| | Males | 66 | 3.7879 | 0.92012 | 0.11326 |

Considering the above findings, the statistical analysis of the independent samples test (*t*-test of equality) showed a significance value of 0.436 (2-tailed), as shown in Table 9. As this value is above the required cut-off of 0.05 (level of significance), this indicates that there is no statistically significant difference in the mean scores in relation to the differences between females and males, in terms of possessing more digital competencies. In other words, there is no statistically significant relationship between gender differences and increased digital competencies.

TABLE 9
INDEPENDENT SAMPLES TEST

| | | Levene's test for equality of variances | | <i>t</i> -test for equality of means | | | | | | |
|--------------------------------------|-----------------------------|---|-------|--------------------------------------|---------|-----------------|-----------------|-----------------------|---|---------|
| | | F | Sig. | T | Df | Sig. (2-tailed) | Mean difference | Std. error difference | 95% Confidence interval of the difference | |
| | | | | | | | | | Lower | Upper |
| Possessing more digital competencies | Equal variances assumed | 0.609 | 0.436 | 0.570 | 149 | 0.570 | 0.08271 | 0.14514 | -0.20408 | 0.36950 |
| | Equal variances not assumed | | | 0.565 | 134.676 | 0.573 | 0.08271 | 0.14646 | -0.20696 | 0.37238 |

V. DISCUSSION AND CONCLUSION

The findings have chiefly focused on assessing the components and sub-components associated with digital competencies among participants, specifically the highest and lowest abilities, which are in scarcity. Using technology adequately has become a prerequisite for assessing future language teachers' competencies. The attained results of the current research confirm that 21st century competences need to be gradually increased, including digital competences and their sub-competencies (i.e., solving problems, creating content, engaging in communication, ensuring safety). This is consistent with Foulger et al. (2017), who claim that individuals' competence in language teaching necessitates ethical, safety-related and social considerations. In addition, Instefjord and Munthe (2016) acknowledged that teaching capability in the current age requires individuals' knowledge of how to use technology to improve their personal interaction and pedagogical knowledge. This research has ensured that reaching the maximum benefits of integrating technology into language teaching is a gradual process that requires continuous professional development and training considering the digital domains. In line with this argument, Skantz-Åberg et al. (2022) determined that teachers' professional digital competence development is a complex process, including socio-historical and socio-technical changes over time. Deliberate training should also be designed to raise teachers' professional digital competence to become more aware of formal and informal uses of digital tools in various learning environments (Chu et al., 2017; Caena & Redecker, 2019). Basilotta-Gómez-Pablos et al. (2022) revealed that understanding the training needs of teachers in the digital era takes places by determining their needs as well as specifying aspects of practical and experiential training.

The findings have shown that the participants had high competencies, based on their assessment, regarding essential aspects of the practice of technology-enhanced language teaching: the promotion of motivation, flexibility and fostering creativity among learners. Those competences would ensure better quality language learning for everyone, and particularly those who have issues with infrastructure (Gaskell, 2018). On the other hand, the findings also indicated limited competences in the following: aligning learning resources with learning purposes; nurturing digital citizenship (i.e., using technology to professionally engage and participate in society regularly and effectively); and meeting specific learners' needs. This study argues that these aspects are crucial and must be considered by administrators and teaching faculty at higher education institutions. Falloon (2020) indicated that inadequacy in these competences, or even some of them, would result in negative consequences, in terms of building appropriate online networks and constructive virtual environments. The findings have shown that gaining better digital competencies cannot be measured by the seniority levels of the participants or gender differences. The determining factor here is to acquire more related skills, regardless of age or gender. Individual differences also play a key role because digital competence is seen as a complex

system of multiple sub-skills, including the ability to search, navigate, classify, integrate, evaluate, communicate, cooperate and create/design accurate content (Erstad, 2015).

The present study has reached key conclusions, claiming that more investment should be made into the new generation of language teachers, including student-teachers, to boost their digital expertise by providing deliberate training. Such training should be planned in the curriculum to support digital integration in education and empower teachers' future work (Nguyen & Habók, 2022). It is crucial to replace the traditional culture of learning with a community of inquiry. Digital innovations have given learners more opportunities to practice new ways of learning, including the establishment of a community of inquiry, as suggested by Johannesen et al. (2014). In agreement with McGarr et al. (2021), when learners become aware of related skills to digital competences, they become more able to create a professional community of inquiry that is characterised by respect, collaboration, inquiry and exploration. This research has also concluded that the digital proficiency of teachers will have a direct impact on future learners, in terms of using more educational technologies for useful purposes. However, this study cannot be generalised to various educational contexts with different learning objectives. Future researchers should focus more on future language teachers from different educational settings and geographical backgrounds. Future researchers may also investigate the actual skills of using technology among future language teachers, as the data collected for the present study required participants to self-assess their skills. Future research may explore the discrepancy or likeness between students' self-rated skills and their actual skills.

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