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Toward a Tech-Based Model in Teacher Education in Morocco: (TPACK Framework)

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Abstract:
This study aims to examine to what extent pre-service preparation programs in Morocco incorporate technological knowledge in pedagogical practices. To realize this goal, 30 Moroccan EFL teachers participate in this project to provide insights on their perspectives, structure, application, challenges, and needs as regards technology integration in the teaching learning process. Precisely, a survey was used to collect relevant information to the objectives of this scrutiny from Moroccan EFL teachers, including the frequent utilization of digital tools, confidence in technology integration, and challenges faced during their training. The results obtained from this study are expected to reveal the current state of technology integration in Moroccan teacher preparation programs and highlight areas requiring improvement. The findings will also inform curriculum designers, policymakers, and teacher trainers about the need to reinforce digital literacy components within pre-service programs' curricula.

Keywords: Technology integration; Technological knowledge; Moroccan EFL teachers.

General Background

In the current digitally rich learning and teaching landscape, teaching has become a daunting task. Meeting the requirements of this rapidly changing technological world has pushed many educational systems to regularly fetch novel and innovative ways of teaching. Therefore, integrating technology in pedagogical practices has become indispensable for the effectiveness of the teaching and learning processes. The emergence of several approaches and frameworks, which does not solely highlight the importance of ICT as an alternative tool for replacing old teaching methods but advocating for the necessity of teachers to have an encompassing knowledge and competence to effectively use it (TPACK, for instance) has urged educational systems to consider the integration of technological knowledge in their training programs.

Since independence, Morocco has consistently strived to enhance teacher training programs' quality through emphasizing the importance of considering digital literacy in curricula. However, the effectiveness of these teacher training programs remained questionable, especially that despite the considerable efforts made, Morocco continues to rank low in international classifications of educational quality. Therefore, this study purports to explore Moroccan EFL teachers' perceptions, structure and application, needs and challenges with respect to technology-enhanced pedagogy in their pre-service training. In addition, based on the respondents' perspectives, this project aims to provide policy makers with insights into how to establish a tech-based teacher training program model.

Recent research has shown that in order for educational systems to produce learners able of interpreting, grasping challenges, developing knowledge, drawing informed decisions, and jointly provide solutions (Newton, 2017, Van Lavar et al, 2020), opportunities to develop teaching practices and competencies should be incorporated in teacher preparation programs. Pertinently, Simpson et al. (2022) contend that a "teacher needs to be creative, responsive, and dynamic as students' expectations, and the world changes" (p.161). For fostering creativity, responsiveness, and adaptability to the 21st century students' needs and expectations among teachers, teacher preparation programs should equip prospective teachers with the necessary tools and competencies to efficiently meet these challenges.

Research Objectives

This research is carried out with two objectives in mind. First, to explore EFL teachers' perceptions, structure, application, challenges and needs in terms of digital literacy and technological knowledge in their pre-service training. Second, to highlight the urgent need for a tech-based model in teacher preparation programs that can promote the development of digital literacy among future Moroccan EFL teachers during their pre-service training.

Research Questions

1. To what extent do Moroccan EFL teachers perceive that their pre-service teacher training program effectively integrates technological knowledge and digital literacy?
2. Based on Moroccan EFL teachers' insights, what recommendations can be formulated to promote the pedagogical integration of technological knowledge within teacher preparation programs?

Literature Review

This literature review aims at bringing to the forefront international conceptions about the utilization of technology in pre-service teacher training programs worldwide in general, and in the Moroccan educational context in particular. Beyond any reasonable doubt, the integration of technology in teaching results in enhancing teaching quality and facilitating learning experience (Erguig,2009). However, many initial teacher preparation programs in Morocco still do not adequately address technological competencies. The lack of emphasis on developing prospective teachers' technological knowledge in their pre-service training programs can negatively influence the efficiency of teaching and learning outcomes. Consequently, teachers might embark on their teaching journey unprepared to leverage technology for instructional reasons. To bridge this gap, teacher preparation programs should necessary consider integrating technology-oriented courses along with practical experiences. By so doing, prospective teachers can better employ technology not as a replacement tool for old teaching method but as a way to transform teaching and enhance students' engagement and learning.

The ability of digital literacy to transform perspective teachers teaching potentials has been highlighted by many researchers (Lu et al, 2025, Tondeur,2025). For them, pre-service teacher training programs in the current time should enable candidate teachers from competencies that allow them "navigate continuous digital change in education" (Tondeur et al, 2025, P.1, OCED, 2019). More importantly, the proliferation of digital platforms along with the emergence of AI necessitates the urgent inclusion of digital competencies in teacher preparation curricula. This incorporation would ultimately foster digital skills among future teachers and also would strengthen their abilities to effectively implement them in enhancing learning outcomes.

Incorporating digital literacy in language teacher preparation program matters because it is no longer optional. In fact, for boosting 21st century students' engagement, teachers must be fully equipped with digital skills and tools. Also, they should have certain level of skillfulness in incorporating technology within pedagogy practices.

EFL Teachers Perceptions toward the Incorporation of Technology Knowledge in Classroom Practices

Integrating technology in educational delivery should not be perceived as an abrupt measure. However, successful ICT integration largely depends on teachers' viewpoints and perceptions. Taking into account teachers' consideration into incorporating technology in classes serves as a key determinant of the effectiveness and sustainability of the process. Studies conducted on investigating teachers' attitudes towards integrating technology in teaching practices have mostly indicated that teachers, in general, and language teachers, in particular hold positive and favorable attitudes towards their inclusion. For them, the integration of ICT not as an alternative method of teaching but as an amplifying aspect for teaching practices demonstrated "increased motivation, active learning" (Kizil, 2011.P.22) among learners, "motivates students in the contents to be studied (Mayoura, 2006, as cited in Ilter, 2009), and "allow students to develop critical thinking skills, high levels of understanding and solve problems" (Soano et al., p.79).

In Solano et al (2017) study on exploring the use of educational technology in EFL teaching in primary education in Ecuador, they revealed that teachers showed reluctance to apply technology. For them, technology is difficult to use in English lessons. Accordingly, they suggested offering them training sessions to effectively incorporate technology and feel competent and confident in its use as educators. In this line, Almerich et al., (2016) allege that technology integration in teacher training programs is imperative to reinforce teachers' knowledge on "how to use technology in order to integrate it in the teaching processes" (Solana et al.,2007, p. 83).

Relatedly, Ottenbreit- Leftwich et al (2010) opine that teachers conceive of technology as a support means for their professional growth. This entails that the integration of technology in classroom practices enable them to collaborate and communicate with experts and other educators according to the 21st century skills. This perception is further reinforced by Wang (2023) research. In an attempt to explore in-service teachers' perceptions of technology integration in English as a foreign language' classrooms in China, Wang reveals that teachers believe that integrating technology is useful both for their own professional growth, and meeting their students' needs. For example, they utilize technology to "prepare teaching materials, deliver course content, and manage classes" (Wang, 2023, P.245-246). In Vietnam, for example, Bui and Mai (2023) conduct a study to investigate teachers' beliefs about the effectiveness of technology application in English teaching. The results of the study identified that teachers who participate in their scrutiny hold positive attitudes towards the role of technology to support enhancement in both teaching and learning.

Despite the fact that technological resources and materials are present in most of the world's schools, yet its utilization still poses a challenge in some countries, Morocco included. As a matter of fact, the lack of adequate training and knowledge to incorporate technology in teaching content hinders teachers' improvement of the delivery process. Surprisingly, studies indicated that irrespective of the challenges faced, EFL teachers consistently search for creative ways to benefit from technology in improving their teaching.

Theoretical Framework (TPACK)

TPACK is considered one pioneer model to advocate for the integration of technological knowledge in the teaching-learning process. The spread of technologies has urged the introduction of new tools to education. Accordingly, Mishra and Koehler (2006) developed a the TPACK framework in order to emphasis the pressing need to integrate technology in pedagogical practices. This Framework functions under the assumption that effective 21st century teaching is characterized by the interaction among three core elements, notably technology knowledge, pedagogy knowledge, and content knowledge.

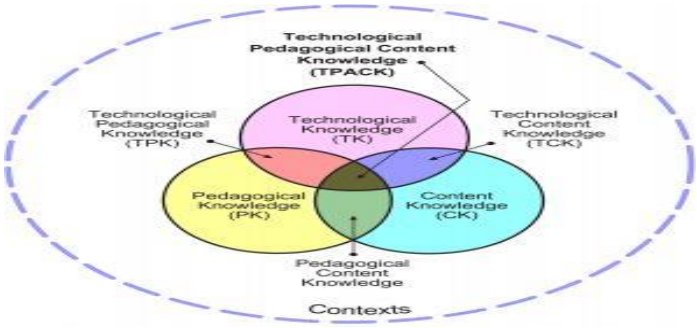

Figure 1 ***TPACK framework (Mishra and Koehler)***

Building upon Shulman's (1986) taxonomy of the types of knowledge efficient teachers should possess, Mishra and Koehler (2006) developed their TPACK framework. The figure above combines both Shulman's taxonomy and Mishra and Koehler's TPACK. It mainly describes the seven interrelated domains of TPACK. The first domain is Content Knowledge (CK). Content knowledge simply refers to the teachers' understanding of the subject being taught. The second domain is Pedagogical Knowledge (PK). In Shulman's view (1986), quality teachers should demonstrate excellent mastery of PK, which is the ability to use pedagogical content and sources in teaching practices. The TPACK third domain is Technological Knowledge (TK). In simpler terms, TK entails the teachers' familiarity with technological tools and technologies.

The fourth domain of the TPACK model is Pedagogical Content Knowledge (PCK). Mirel (2011) contends that PCK is vital for "ensuring that teachers have mastered both the content they will teach and the best ways of teaching it" (p.11). For her, PCK has a great influence on the effectiveness of instructions. Fifth, Technological Content Knowledge (TCK). It is the ability of the teacher to select the appropriate technology for teaching a particular topic so that students better understand the content of their learning with the help of technology. Sixth, Technological Pedagogical knowledge. TPK designates teachers' understanding of how to choose and manage technology for students. In other words, it is the ability of teachers to select appropriate technology that would best ease students work flow throughout their exploration of a given subject.

Finally, the dynamic interplay of pedagogy, technology, and knowledge is technological pedagogical content knowledge TPACK. This framework sums up the heart of innovative teaching. Particularly, TPACK helps teachers consider how can all their types of knowledge intersect in order to effectively teach and engage students with technology. At large, it is an approach that looks at the combination of what teachers know, how they teach, and through which media to better impact students' learning.

This model is believed to be relevant to the aim of this study because it builds upon the premise that integrating technology in teaching should no longer be overlooked. Especially, quality educators are

required to possess different types of knowledge to enable them teach effectively according to the norms of the 21st century education. In addition, this framework helped in guiding and formulating this project survey. During the design of the survey, I referred to the TPACK components to formulate questions that assess teachers' familiarity with digital tools (TK), their ability to adapt teaching strategies in technology-rich environments (TPK), and their perceptions of how technology supports EFL content delivery (TCK). This systematic utilization of the model aimed to ensure coherence between the research objectives and the survey questions.

Methodology

To arrive at the objectives of this research, a survey was designed containing questions related to Moroccan EFL teachers' perceptions, application, structure, challenges and needs related to pedagogically grounded use of technology during their pre-service training.

Instruments

Data was collected from Moroccan EFL teachers via a survey containing both closed-ended and open-ended questions. The first section of the survey aimed at collecting respondents' background information, including age, gender, educational level, years of teaching, and prior formal training in digital technologies. The second section consisted of statements related to Moroccan EFL teachers' perceptions on the importance and benefits of technology-enhance pedagogy.

The third part of the survey was devoted mainly to gather information about the technological tools, frequency, and application of technological knowledge to enhance content delivery during their teacher preparation period. Section four of the survey sought to fulfil two major aims. First, to gain insight into EFL teachers' confidence of incorporating technology into instructions. Precisely, on a five- point Likert scale ranging from not confident to extremely confident, respondents rated their level of confidence in applying technology to plan lessons, assess students learning, and manage their classrooms. Second, to show how often they were encouraged by mentors, trainers, and training stuff to employ incorporate technology.

The fifth section was dedicated to survey challenges and needs of Moroccan EFL teachers while trying to incorporate technology into teaching. Last but not least, the sixth section was reserved to open-ended questions, where Moroccan EFL teachers were encouraged to openly share their opinions on how they perceive as effective ways to integrate digital literacy into pre-service teacher training and examples from their personal and professional experiences on efficient usage of digital tools to enhance student learning.

Major Findings and Results

Participants Background Information

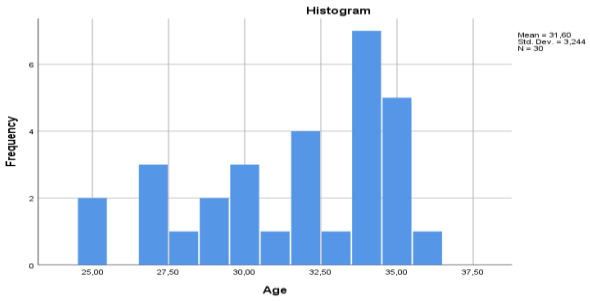

Figure 2 ***Age category of participants***

The figure above clearly demonstrates the age distribution of the population involved in this study. Precisely, the majority of participants fall within the age category of 27 to 35 years old. This indicates that the group is fairly homogenous. Moreover, this age distribution also reveals that participants are within their early to mid-career stages.

This study draws upon responses collected from both female and male in-service EFL Moroccan high school teacher (N=30). Male EFL teachers comprise 16.7% and female EFL teachers 83.3% as indicated in the table below:

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	5	16,7	16,7	16,7
	Female	25	83,3	83,3	100,0
	Total	30	100,0	100,0	

Table1 ***Participants' gender***

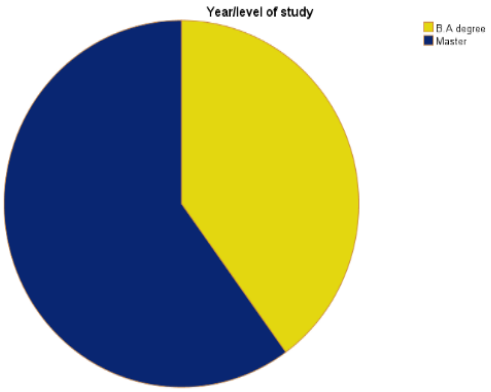

Figure 3 ***The distribution of educational level of participants***

As far the educational background of this study participants, the figure above reveals that respondents hold relatively high academic qualifications. More precisely, 40% of the participants are B.A holders, while 60% hold Master's degree. This distribution signifies that the majority of the participants have completed post-graduate education, thereby they are considered elements that may bring advanced practical use and application of technology in Moroccan EFL classrooms.

With respect to prior formal training in digital technology, the findings indicate noticeable variations among participants. 36.7% of the population under study reported having received formal training on how to integrate digital technologies in teaching practices in EFL classrooms. 63.3%, on the other hand, indicated that they had limited or no prior exposure to such trainings. This disparity suggests that participants have different levels of technological preparedness and competence.

Table 2 ***Prior formal training in digital technologies***

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	36,7	36,7	36,7
	No	19	63,3	63,3	100,0
	Total	30	100,0	100,0	

Moroccan EFL Teachers Perceptions on the Importance and Benefits of Integrating Technological Knowledge in Pre-service Teacher Training Programs

Research on psychology have clearly shown the correlation between attitudes and behaviors. For this reason, participants were asked about their perceptions on the importance, and benefits of integrating technological knowledge in pre-service teacher training programs to anticipate their level of preparedness for its effective incorporation. The overall results indicate a strong positive attitude toward incorporating technology to enhance pedagogical practices. Most respondent either agreed or strongly agreed that digital literacy is essential for future teachers and that it should be a core component of pre-service teacher training programs. This agreement reflects teachers' recognition of the growing role of technology in modern pedagogy and the need to prepare future educators for technology-enhanced classrooms. Similarly, a high level of agreement was found in the statement that digital literacy helps teachers create more engaging lessons, suggesting that teachers view technology not only as a technical skill but as pedagogical asset that can enhance students' motivation and participation.

Despite the generally positive perceptions, the responses to the statement "I feel confident that my training program prepares me to use digital tools effectively in the classroom" show slightly lower levels of agreement compared to other statements. This finding indicates a gap between teachers' awareness of the importance of digital literacy and their perceived preparedness to implement it in practice. In other words, while teachers value technological competence, many feel that their pre-service training did not equip them sufficiently with competencies to confidently use digital tools. This suggests a need for stronger emphasis on practical digital skills development within teacher education curricula. This entails that further support and willingness to integrating more technology training sessions, workshops, real classroom applications could bridge this gap.

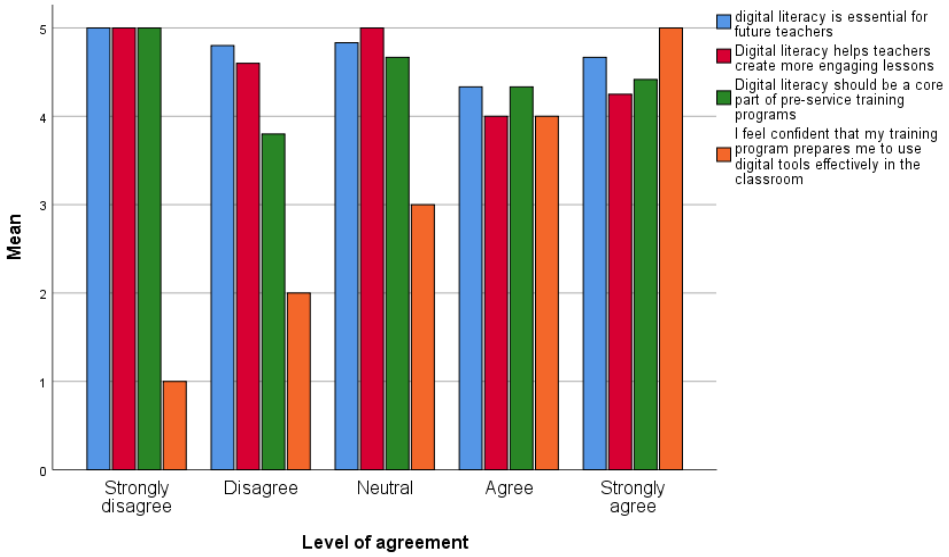

Figure 4 ***Participants mean of their level of agreement of the importance of incorporating digital literacy in pre-service training***

Skills and Application of Moroccan EFL Teachers of Technology in their Pre-service Training

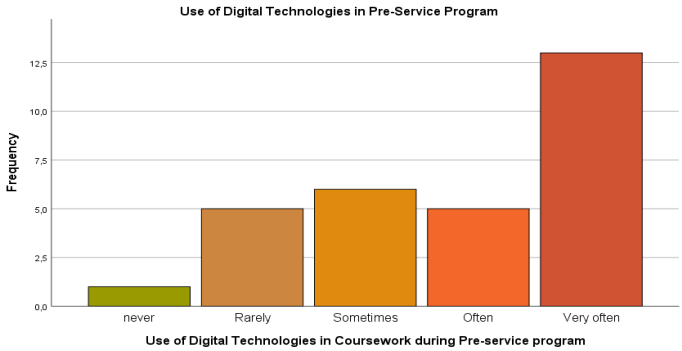

Figure 5 ***The frequent use of digital technologies among participants during their pre-service training***

The figure above illustrates how frequently participants of the study used digital technologies in their pre-service teacher training program. The data reveals a noticeable variation in usage patterns. Only a small number of respondents reported that they never use digital technologies, and a slightly larger but still limited group indicated that they rarely used them. A moderate number of participants selected sometimes and often, showing that integrating digital tools are part of their learning experience. These results reflect consistent but not constant use of such tools in their teacher preparation program coursework.
The largest group reported using ICTs very often, making it the most frequent response. This indicates that a significant number of EFL teachers actively integrated digital technologies into their teacher training experience. Overall, the results reveal a strong tendency toward frequent technology integration among respondents. However, the small number of those who rarely or never use digital technologies may point to the need for additional support or training to ensure that all participants develop digital competence.

Digital Tools Used in Pre-Service Training

The data presented in the figure below clearly illustrates the degree to which different categories of digital tools were integrated into pre-service teacher training programs in Morocco. It is clearly evident from the mean score that multimedia tools such as Canva, PowerPoint, and video editing software are the most widely utilized tools among pre-service teachers. This finding suggests that EFL prospective teachers relied heavily on multimedia tools to design presentations, and create visual content. On the other hand, Learning Management System tools like Moodle and Google classrooms were less and moderately employed. This moderate level of use of such tools indicates that while these platforms are considered essential educational tools in many educational systems, they may not be fully exploited in all aspects of pre-service training in Morocco.
The use of AI-based tools such as ChatGPT, Grammarly, and Quizlet AI appears to be relatively limited. This lower adoption could be attributed to either a lack of awareness or insufficient knowledge and training on how to effectively integrate such innovative technologies into teaching practices. Also, it is may be an indication of the early stage of AI adoption in Moroccan pre-service trainings. The minimal use of "other tools" as the Figure 6 below shows, lends further evidence that pre-service training in Morocco still tends to favor traditional digital resources over emerging technologies and tools.

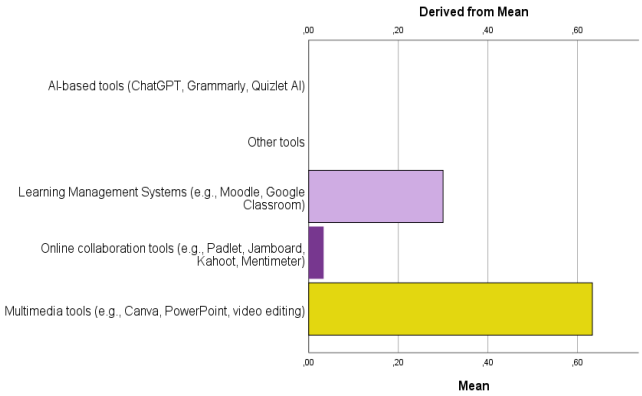

Figure 6 ***Digital Tools Used in Pre-Service Training***

Overall, these results highlight the need for greater emphasis on digital literacy and the incorporation of technology knowledge within content course in teacher training curricula to better prepare future educators for technology enhanced classrooms.

Moroccan EFL Teachers' Level of Confidence in Integrating Technology in their Classrooms

This section aims to investigate participants' level of confidence in incorporating technology in pedagogical practices in their classrooms. Overall, respondents indicate competencies to use technology mainly for assessing students through digital platforms, creating digital materials, and using digital tools for lesson planning. Less confidence among Moroccan EFL teachers was exhibited roughly in the same areas as shown in the figure below. Also, a proportion of respondents show limited confidence in managing online classrooms through technological tools. This is suggestive that participants have varying digital capacities. The striking aspect about these results, however, is that participants expressed slight to moderate confidence in the same areas where others feel confident. One plausible justification for these mixed responses could be due to their varying exposure to digital training or unequal access to technological resources. These findings highlight the need for more comprehensive digital literacy training within teacher pre-service teacher education programs to ensure that Moroccan EFL teachers develop balanced and sustainable technological competencies applicable to diverse teaching contexts.

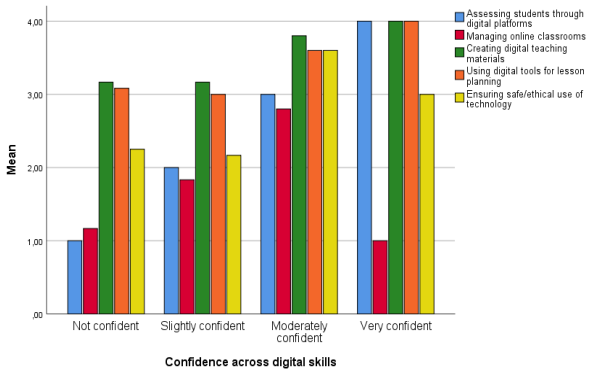

Figure 7 ***Moroccan EFL teachers' confidence in using technology in their Classrooms***

Application of Digital Tools during the Pre-Service Training

The table below represents the frequency and percentage distribution of responses regarding the extent to

which pre-service teachers were encouraged by their mentors to use digital tools during their training. The data shows that 30% of respondents reported being "often" encouraged to use digital tools, while 23.3% indicated they were "very often" encouraged. Together, these two groups represent 53.3% of the total participants, suggesting that more than half of the trainees experienced consistent encouragement from their mentors to integrate technology into their practice. Meanwhile, 23.3% of respondents stated they were "sometimes" encouraged, indicating that some trainees received moderate support in this area.
On the other hand, a smaller proportion of participants reported limited encouragement. This suggests that while some EFL teachers benefited from mentors who valued digital integration, others lacked adequate guidance or motivation in using technological tools during their pre-service teacher training. In short, these results reflect a generally positive trend toward promoting digital tool-use during their pre-service training, but they also highlight the need for a more uniform mentoring approach to ensure all trainees are equally supported in developing digital competencies.

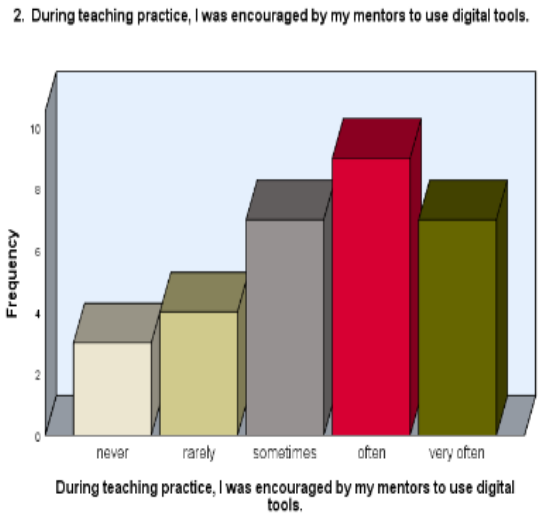

Figure 8 ***how often EFL Moroccan teachers were encouraged to use digital tools during their pre-service training***

When respondents were asked whether they have produced or designed digital content during their pre-service teacher training, the findings indicate the following: 56.7% reported having designed digital content, while 43.3% stated that they did not. This suggests that more than half of the participants were actively engaged in creating digital martials during their training. This active involvement in digital content creation implies that the program offered some opportunities to apply technological skills in practice.
However, the fact that 43.3% of respondents did not engage in designing or producing digital content reveals that a significant portion of trainees did not receive sufficient guidance or encouragement in this area. This demonstrates inconsistency in how digital production activities were implemented across pre-service teacher training programs in Morocco. Therefore, while the results indicate progress toward fostering digital competence among pre-service EFL teachers, they also highlight the need for a more systematic and inclusive approach to ensure all trainees gain practical experience in creating and using digital educational resources.

Challenges in Incorporating Technology in Pedagogical Practices

The biggest challenges I face in developing digital literacy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Limited training in how to integrate tools pedagogically	10	33,3	33,3	33,3
	Lack of access to digital tools/resources	7	23,3	23,3	56,7
	Time constraints in training programs	6	20,0	20,0	76,7
	Lack of confidence in my skills	4	13,3	13,3	90,0
	Limited support from mentors	3	10,0	10,0	100,0
	Total	30	100,0	100,0	

Table 4 ***The main challenges faced by EFL Moroccan teachers in developing their digital literacy during their pre-service training***

The table above presents the main challenges faced by EFL Moroccan teachers in developing their digital literacy during their pre-service training. The most frequently reported challenge, identified by 33.3% of respondents, is limited training in how to integrate technology tools pedagogically. This entails that while digital tools may be available during the training period, many trainees struggle with understanding how to effectively incorporate them into language teaching practices. The second most common issue, mentioned by 23.3% of participants, is the lack of access to digital tools or resources. In this respect, respondents indicated that infrastructural limitations still hinder the effective use of technology in teacher education programs. Additionally, time constraints in training programs were mentioned by 20% of the respondents, which reflects the limited opportunities for hands-on practice with digital tools during the training period.

Other challenges reported include the lack of confidence in digital skills (13.3%) and limited support from mentors (10%), which together suggest that personal and institutional factors may have an impact on shaping digital literacy confidence among trainees. At large, these findings indicate that while Moroccan EFL teachers recognize the value of digital competencies, their confidence and growth is blocked by insufficient pedagogical training, limited resources, and inadequate support from mentors and trainers. Addressing these barriers thorough more comprehensive training modules could significantly enhance teachers' confidence and ability to integrate digital tools effectively in their classrooms.

Needs for Developing Skills to Effectively Integrate Technology in Pedagogical Practices

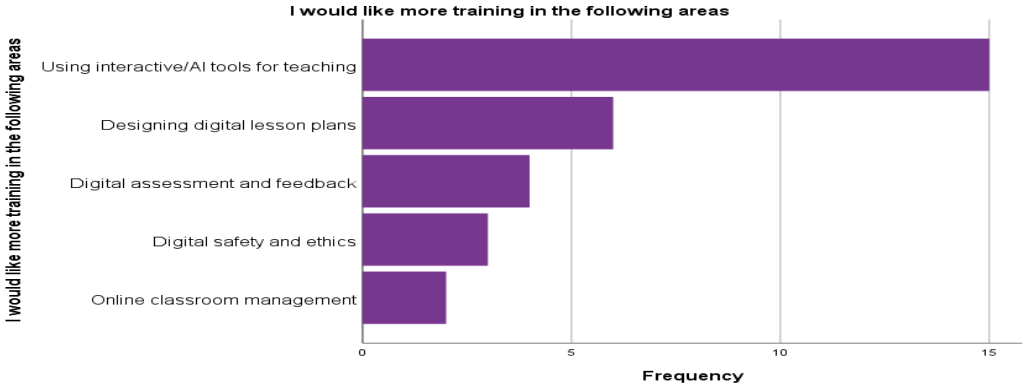

Figure 9 ***Participants' needs for further training related to digital literacy***

Last but by no means least, respondents were asked to express their needs for further training related to digital literacy. In this vein, most participants consistently mentioned using interactive/AI tools for teaching. This indicates the strong interest among future teachers in developing practical skills for integrating AI and interactive technologies into classroom instruction, which shows a clear sign of the growing importance of AI in modern pedagogy.

The second most common area mentioned regarding their needs was designing digital lesson plans, followed by digital assessment and feedback. These results suggest that while EFL teachers in Morocco recognize the value of digital tools, they still require structured guidance on how to apply them effectively in planning lessons and designing evaluation. Meanwhile, fewer participants expressed a need for training in digital safety and ethics and online classroom management.

In short, the findings obtained reveal that Moroccan EFL teachers are eager to enhance their digital literacy, particularly in using AI to amplify teaching practices. This sheds light on the necessity for teacher preparation programs to consider integrating more comprehensive and practice-oriented modules that address the competencies needed for emerging technologies.

Discussion of Findings

The general aim of this study was to explore Moroccan EFL teachers' perceptions, structure, application, needs, and challenges regarding the extent to which the integration of technology knowledge in pre-service training programs enhances teaching quality. The findings obtained revealed that Moroccan EFL teachers generally hold positive attitudes toward the integration of technology and consider digital literacy a crucial component of modern teacher preparation programs. This finding finds support in previous studies on technology integration in pre-service teacher training. For example, Erguig (2009), Kizil (2011), and Ilter (2009) emphasized that incorporating technology in teaching practices enhances the quality of delivery and increases learners' engagement. In a similar fashion, Tondeur et al. (2025) and Lu et al. (2005) claimed that teacher education programs must equip future educators with competencies necessary to navigate the rapidly changing digital landscape in education.

The evident gap between teachers' positive attitudes and their perceived preparedness and confidence to utilize digital tools echoes the findings of Solano et al. (2007) and Wang (2023). These researchers noted that despite teachers' favorable attitudes, insufficient training and limited practical exposure hinder effective technology implementation.

The results attained concerning the frequency of digital tools' use during pre-service trainings in Morocco lend further support to the existing body of literature targeting the same issue. Although the majority of this study participants indicated that they 'often' or 'very often' used digital tools, a non-negligible proportion of respondents reported 'rare' or 'no use' of technology during their initial training. This inconsistency bolsters the literature's argument that technology use in teacher education is still uneven and context- dependent (Roulston et al.,2019). Furthermore, the heavy reliance on traditional multimedia tools such as PowerPoint or Canva suggested that Moroccan teacher education is still in earlier stages of integrating emerging technologies.

The findings reported about the variation and limitation in teachers' access to digital resources and the quality of mentorship they received align with previous studies (Liu, 2016; Ottenbreit-Leftwich et al., 2010). These studies suggested that successful technology integration depends heavily on the availability of resources and the presence of supportive learning environments. In Morocco, where disparities between training centers persist, such challenges seem to have a significant impact. This is consistent with Erguig (2009) earlier inference that despite increased availability of ICT in Moroccan institutions, its effective use remains limited.

Lastly, the study revealed that Moroccan EFL teachers expressed strong interest in further training, especially in AI-based tools, digital lesson designs, and digital assessment, reflecting a shift toward more advanced levels of digital competence. The same view was echoed by (Tondeur et al., 2025; Van Laar et al., 2020), who called for moving beyond basic ICT skills toward preparing teachers for the complexities of AI-supported pedagogy and 21st century digital learning environment.

In a nutshell, these findings both confirm and support existing literature. They approve that Moroccan teachers, like other countries educators, value technology and recognize its pedagogical merits. However, they also highlight unique contextual challenges such as unequal access to digital resources, varying mentor support and others.

Conclusion

To conclude, the integration of digital literacy into pre-service teacher training in Morocco calls for a holistic and sustained pedagogical approach. More precisely, it requires curriculum redesign and the inclusion of interactive digital practices that empower future teachers with necessary technology knowledge and competencies to navigate and shape an increasingly digital educational landscape.

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