Examining Digital Proficiency of Pre-Service Teachers in Algeria

CHIB Amina Djazia[1*]
[1] University ofAbou Bakr Belkaid Tlemcen,(Algeria),
djazia.chib@univ-tlemcen.dz

Pr. ZINE Younes[2]
University of ELOUED (Algeria),
zine-younes@univ-eloued.dz

Abstract

This text examines the digital competence of pre-service teachers in Algeria. It highlights the importance of developing digital skills among aspiring educators, as they play a crucial role in shaping the future of learning and integrating technology into the classroom. The study employed a mixed-methods approach, including surveys and interviews, to assess the digital proficiency levels of pre-service teachers across Algeria.The findings reveal varying levels of digital competence among the participants, with some exhibiting strong digital skills and others demonstrating more limited proficiency. Key factors influencing the development of digital competence were identified, such as access to technology resources, the quality of digital training in teacher preparation programs, and individual motivation. The study emphasizes the need for more comprehensive and tailored approaches to fostering digital competence, ensuring that all future educators are equipped to leverage technology effectively in their classrooms.

Keywords: digital competence ,Algeria, technology, proficiency ,digital skills.

1. Introduction

Today society is characterized by the presence of digital technology within public and private life (García-Figuerola et al., 2023). Twenty-first century citizens are involved in new and emergent situations for which they are not prepared. In the last years, the use of information and communication technologies (ICT) has abruptly increased in educational institutions and classrooms. Students spend great amounts of time interacting with computers, Internet, mobile phones and other technological tools that deeply influence their life styles, their attitudes, believes and values. Teaching and learning processes have been also affected by this far-reaching transformations. Enters e-learning, teaching with or supported by the technologies and tools of the Information and Communication Technology. Between other skills, digital competence is considered of big importance in the new knowledge society. Refers to the set of knowledge (including facts, concepts, processes, procedures, values, attitudes, strategies) that allows us to successfully deal with emergent problems in several areas of our life (World English Journal et al., 2019). Digital competence is a set of knowledge for dealing with digital technology, tools, applications, environments and content. Digital competence is composed of five components: the first one is "Information and digital content". Concretizes in evaluating, selecting and managing the digital information. "Communication of information and digital content" focuses on creating a digital content and using it for communicating with other people. "Transacting" involves activities like banking, purchases and so on carried out through technological devices. "Problem solving" means dealing with situations that involve the use of ICTBackground

2. Objectives

The global transition to digital education has been accentuated by the emergency of the COVID-19 pandemic, which prompted the rush to online teaching and learning by higher education institutions. With the rapid shift caused by the pandemic, institutions were faced with dealing with changes in their environments, policy, and procedure transformation; implementing new systems and technologies; and reinterpreting the student experience. Although the educational transformation to digitalisation has been manifold and prompted universities to shift operations online, this has not been without contestation and is ongoing (World English Journal et al., 2019). Similarly, although academics are increasingly expected to write and publish digitally, their online writing practices have been less well explored and are more contested. While there is research in higher education on digital teaching and learning, there is a parallel gap in understanding how academics write in, and navigate, digital scholarship and its impact on their writing practices. This paper investigates experienced academics' perspectives of educational transformation in their fraternity and their understandings of this in relation to digital networked technologies, sharing their experiences and ideas on curriculum design and teaching practices in a contested environment of change.

Digital competence should be defined and understood within two contexts: societal requirements and teacher training. Society is in continual change, and rapid advances in technology impact daily, social, cultural, and work life tremendously. Digital, audiovisual, multimedia, internet, social networks, and open education have transformed society. Since the 1990s, there has been a tendency to refer to children and teenagers born in this digital environment as 'digital natives' or 'Net Generation' (young people presumed to have characteristics typical for the digital age). However, there is more and more evidence that access to digital technology does not automatically lead to its successful use or that users

enjoy the same level of digital competence (García-Figuerola et al., 2023). Thus, questions are raised as to what children can do with technology and whether they possess the competence to successfully manage it.

3. Pre-Service Teacher Education in Algeria

Pre-service teacher education in Algeria follows a structured system aimed at equipping aspiring educators with the necessary knowledge and skills. The program typically spans four years, during which student teachers engage in both theoretical coursework and practical teaching experiences. While the integration of technology in this training has been a gradual process, notable efforts have been made to incorporate digital tools and resources into the curriculum. Aspiring teachers are now exposed to a range of educational technologies, from interactive whiteboards and multimedia presentation software to online learning platforms and digital assessment tools. This exposure is intended to enhance their digital competence and prepare them for the technology-rich classrooms they will encounter in their future teaching careers.

4. Assessing Digital Competence of Pre-Service Teachers

Understanding the digital competence of pre-service teachers is crucial for enhancing their preparedness to integrate technology effectively in the classroom. This research aims to evaluate the current level of digital competence among pre-service teachers in Algeria and identify the key factors that influence the development of their digital skills and knowledge. By gaining insights into the strengths and weaknesses of pre-service teachers' digital competence, we can devise targeted interventions and training programs to ensure they are well-equipped to leverage technology for effective teaching and learning.

5. Methodological aspects of the analysis

The study employed a mixed-methods approach, blending quantitative and qualitative elements to gain a comprehensive understanding of digital competence among pre-service teachers in Algeria. A survey instrument was developed to gather data on the participants' self-perceived digital skills, attitudes, and experiences, reaching a diverse sample of pre-service teachers across multiple teacher education institutions in the country. Additionally, in-depth interviews were conducted with a select group of participants to delve deeper into their perspectives, challenges, and personal narratives regarding the development of digital competence within their academic and professional contexts.

6. Data Collection

To assess the digital competence of pre-service teachers in Algeria, the researchers utilized a variety of instruments. These included self-assessment questionnaires, where participants rated their own proficiency in using digital tools and technologies. Additionally, the study involved direct observation of the pre-service teachers' performance during classroom activities and practical exercises that required the application of digital skills. The data collection process was carefully structured to ensure a comprehensive and reliable understanding of the participants' digital competence levels.

7. Data Analysis

Delving into the heart of the research, the study employed a comprehensive approach to data analysis, blending both quantitative and qualitative techniques. The quantitative analysis involved the meticulous examination of numerical data, leveraging statistical tools to uncover patterns, trends, and relationships within the collected information. Complementing this, the qualitative analysis provided a deeper, more nuanced understanding of the pre-service teachers' perspectives and experiences. Through the careful coding and interpretation of interview transcripts and open-ended survey responses, the researchers were able to gain valuable insights into the underlying factors influencing digital competence development among the participants.

8. Results

The findings of this study reveal varying levels of digital competence among the pre-service teachers surveyed. While some displayed a strong grasp of digital tools and technologies, others exhibited more limited proficiency. Several key factors were found to influence the development of digital competence, including access to technology resources, the quality of digital training provided during teacher preparation programs, and the individual motivation and interest of each pre-service teacher in embracing new digital practices. Importantly, the study highlights the need for more comprehensive and tailored approaches to fostering digital competence, ensuring that all future educators are adequately equipped to leverage technology in their classrooms and support the digital learning needs of their students.

The findings of this study suggest that pre-service teachers in Algeria exhibit a diverse range of digital competencies, with varying levels of proficiency across different technological domains. When compared to existing literature on digital readiness among teacher candidates, the current results align with previous observations indicating that prospective educators often possess a relatively strong grasp of basic digital skills, such as using productivity software and navigating online platforms. However, the data also reveals a need for more targeted training and support in emerging areas of educational technology, particularly in the realms of digital content creation, data analysis, and the pedagogical integration of digital tools. As the education sector continues to evolve, it will be crucial for teacher preparation programs in Algeria to continuously assess and address the evolving digital competence requirements of their students, ensuring that the next generation of educators is equipped to leverage technology effectively in the classroom.

9. Conclusion

The findings of this study suggest several key strategies to enhance the development of digital competence among pre-service teachers in Algeria. Firstly, teacher education programs should place a greater emphasis on providing hands-on, experiential learning opportunities that allow students to actively engage with a diverse array of digital tools and applications. This could involve incorporating more technology-based projects, simulations, and collaborative exercises into the curriculum. Additionally, the curriculum and program design should be regularly reviewed and updated to ensure alignment with the evolving technological landscape and the emerging digital skills required for effective teaching in the 21st century classroom. By prioritizing the cultivation of digital competence, pre-service teacher education can better prepare the next generation of educators to leverage technology as a powerful enabler of student learning and engagement.

This study, while providing valuable insights into the digital competence of pre-service teachers in Algeria, is not without its limitations. The relatively small sample size and the focus on a single geographic region may limit the generalizability of the findings. Additionally, the self-reported nature of the data collected could introduce potential biases, as participants may have overestimated or underestimated their own digital capabilities. Furthermore, the cross-sectional design of the study offers a snapshot in time, and longitudinal research would be necessary to fully understand the development of digital competence among this population over an extended period. Despite these constraints, the study serves as an important first step in understanding the digital preparedness of future educators in the Algerian context, paving the way for further research and initiatives to enhance digital competence in teacher education.

In conclusion, this study has provided valuable insights into the digital competence of pre-service teachers in Algeria. The findings suggest that while these aspiring educators possess a strong foundation in digital skills, there remains room for improvement, particularly in their ability to effectively integrate technology into their teaching practices. The significance of this research lies in its contributions to the understanding of digital competence development among pre-service teachers, a crucial factor in preparing them for the evolving educational landscape. By addressing the identified gaps and enhancing the digital competence of pre-service teachers, Algerian educational institutions can better equip the next generation of educators to leverage technology and foster 21st-century learning in their classrooms.

References

García-Figuerola, A., Martínez-Abad, F., & José Rodríguez-Conde, M. (2023). Evaluation of Digital Competence in Teacher Training.

World English Journal, A., SIA, S., & CHERIET, I. (2019). Algerian University Teachers' Disposition and Experiences in Using MOOCs for their Continuous Professional Development.

Abdel-Hameed et al., (2021), the editorial of special issue on education, IT, and the COVID-19 pandemic, Education and Information Technologies, 26 (6) (2021), pp. 6563-6566

Alenezi et al., (2023), Revolutionizing EFL special education: How ChatGPT is transforming the way teachers approach language learning, Innoeduca International Journal of Technology and Educational Innovation, 9 (2) (2023), pp. 5-23

Arteaga et al., (2020), ICT and education in the perspective of experts from business, government, academia and NGOs: in Europe, Latin America and Caribbean

Universidad del Azuay, Ecuador (2020)

Bamoallem and Altarteer, (2022), Remote emergency learning during COVID-19 and its impact on university students perception of blended learning in KSA

Education and Information Technologies, 27 (1) (2022), pp. 157-179

Basilotta-Gómez-Pablos et al., (2022), Teachers' digital competencies in higher education: A systematic literature review., International Journal of Educational Technology in Higher Education, 19 (1) (2022)

Guillén-Gámez et al., (2020), Analysis of teachers' pedagogical digital competence: identification of factors predicting their acquisition, Technology, Knowledge and Learning, 26 (3) (2020), pp. 481-498

Hassan et al., (2020), A critical review by teachers on the online teaching-learning during the COVID-19, International Journal of Education and Management Engineering, 10 (8) (2020), pp. 17-27