REVISTA INVECOM
ISSN en línea: 2739-0063

Systematic review of digital competencies in teaching practice: Challenges and opportunities in teaching

Revisión sistemática de competencias digitales en la práctica docente: retos y oportunidades en la enseñanza

Received: 24/04/2025 - **Accepted:** 28/08/2025

Norma Quenema Camacho
https://orcid.org/0000-0003-1011-5138
nquenemac@ucvvirtual.edu.pe
Universidad César Vallejo. Lima, Peru

Virginia Asuncion Cerafin Urbano
https://orcid.org/0000-0002-5180-5306
vcefarinu@ucvvirtual.edu.pe
Universidad César Vallejo. Lima, Peru

Selman Dennis Condeso Camizan
https://orcid.org/0000-0002-2984-8385
scondeso@ucvvirtual.edu.pe
Universidad César Vallejo. Lima, Peru

Abstract

This study analyzes the relevance of digital skills in university teaching practice in the context of current technological and pedagogical changes. Based on a systematic review of the scientific literature published between 2020 and 2025, it examines research that addresses how teachers face the challenge of integrating digital tools into their teaching work. The main objective is to identify the advances, limitations, and opportunities that these skills contribute to teaching and learning processes. The results, based on 25 selected studies, show that teacher training is a key factor in strengthening both technological and pedagogical skills. However, some teachers remain reluctant to abandon traditional methods. Furthermore, the incorporation of digital platforms, such as Google Workspace and other collaborative resources, generates a positive impact on educational dynamics, facilitating more interactive and flexible learning. Regarding digital literacy, the findings highlight that it involves not only device management but also the critical, ethical, and responsible use of technology, especially given the acceleration of digitalization brought about by the pandemic. Finally, they point out that institutional maturity is essential, given that university policies and investment in innovation decisively influence faculty preparation to face contemporary challenges. In conclusion, digital competencies constitute a strategic pillar for educational improvement, integrating technical, pedagogical, and organizational skills for the benefit of professional development.

Keywords: university education, digital competencies, teaching practice.

Resumen

El presente estudio analiza la relevancia de las competencias digitales en la práctica docente universitaria en el contexto de los cambios tecnológicos y pedagógicos actuales. A partir de una revisión sistemática de la literatura científica publicada entre 2020 y 2025, se examinan investigaciones que abordan cómo los docentes afrontan el desafío de integrar herramientas digitales en su labor educativa. El objetivo principal es identificar los avances, limitaciones y oportunidades que estas competencias aportan a los procesos de enseñanza y aprendizaje. Los resultados, basados en 25 estudios seleccionados, evidencian que la formación docente es un factor clave para fortalecer tanto habilidades tecnológicas como pedagógicas. No obstante, persiste cierta resistencia entre algunos profesores a abandonar los métodos tradicionales. Asimismo, la incorporación de plataformas digitales, como Google Workspace y otros recursos colaborativos, genera un impacto positivo en la dinámica educativa, facilitando aprendizajes más interactivos y flexibles. En relación con la alfabetización digital, los hallazgos destacan que esta implica no solo el manejo de dispositivos, sino también el uso crítico, ético y responsable de la tecnología, especialmente tras la aceleración de la digitalización provocada por la pandemia. Finalmente, se

SciELO Venezuela latindex LatinREV CC BY

señala que la madurez institucional es fundamental, dado que las políticas universitarias y la inversión en innovación influyen decisivamente en la preparación del profesorado para enfrentar los desafíos contemporáneos. En conclusión, las competencias digitales constituyen un eje estratégico para la mejora educativa, integrando habilidades técnicas, pedagógicas y organizacionales en beneficio de la formación profesional.

Palabras clave: educación universitaria, competencias digitales, práctica docente.

Introduction

Information and Communication Technologies (ICT) offer a variety of resources and tools that enrich the process of technological integration in teaching and learning (Reyes & Martínez, 2021). Among these tools are computers, educational software, intranets, the internet, and mobile applications, which allow students to explore diverse, creative ways of learning (Guerrero et al., 2022).

In this context, the digital competencies acquired by both researchers and students are essential today. These competencies include problem-solving skills, security, communication, and information management (Romero et al., 2016). According to Díaz et al. (2020), such competencies encompass a set of knowledge and skills associated with the use of various technological resources.

On the other hand, teaching practice is characterized by being dynamic, changing, and complex in its understanding (Domingo et al., 2020). It is considered a form of praxis, as it involves carrying out activities based on a specific reality, supported by particular means and resources (Aguirre & Ruiz, 2012). This practice is profoundly influenced by a fast-paced context, where constant technological advances, social inequalities, poverty, and violence alter its development. Therefore, students must be approached considering these complexities and particularities (Centeno, 2021).

Furthermore, according to Molina & Nieto (2021), teaching practice is fundamental for capturing students' attention and motivating them in their learning. It is essential for educators to possess the ability to convey the importance of solid and comprehensive training, preparing students for the job market they will face after their academic education (Rodríguez, 2021). Additionally, these educational practices are key to instilling principles and values, fostering maturity in future professionals.

Understanding teaching practice as a complex web of relationships necessitates analyzing its various dimensions. In this regard, Contreras (2003) identifies five fundamental dimensions:

- **Personal dimension**: The teacher is seen as a subject with qualities and difficulties, holding various ideas and projects, but also imperfections.
- **Social dimension**: Refers to the relationships in which the teacher manifests their actions within various social sectors.
- **Institutional dimension**: Relates to the particular characteristics of the institution that may influence the behavior, practices, communication, and conduct of the teacher and their colleagues.
- **Didactic dimension**: Involves reflection on how the teacher presents knowledge to students and their role as an agent utilizing teaching processes and interaction with learners.
- **Values dimension**: Comprises the set of personal values, attitudes, beliefs, and judgments that the teacher integrates into their professional practice.

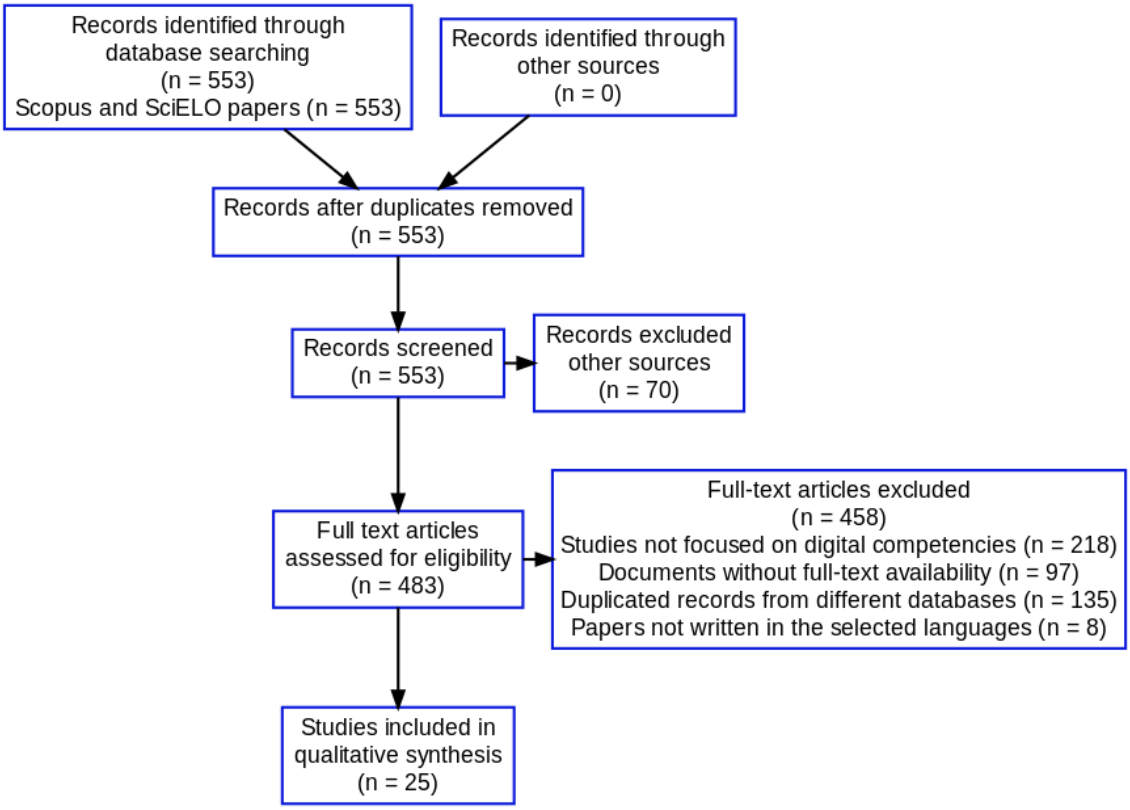
In this context, the purpose of the present research article is to explore the importance of digital competencies in teaching practice, demonstrating how higher education, in a modern world, is strengthened through the incorporation of these competencies into teaching.

Methodology

This research article corresponds to a systematic review of scientific literature, based on the analysis and synthesis of the most relevant results related to digital competencies applied to teaching education. To this end, the PRISMA method (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) was employed to ensure a thorough and productive review (Barrios et al., 2021).

Figure 1

PRISMA flow diagram on the process of identification, selection, and inclusion of the analyzed studies



Note. Content generated from https://hollyhartman.shinyapps.io/PRISMAFlowDiagram/

The information search was conducted in the Scielo and Scopus databases, selected for their high impact and global recognition, as well as their broad coverage of scientific information, particularly in areas such as social sciences, education, and academic technologies. The articles considered were published between 2020 and 2025, in both Spanish and English, preferably open access to facilitate consultation.

The search strategy combined keywords in both languages using Boolean operators. Among the terms employed were: digital competencies, digital education, digital transformation, technology in education, and modern education. To adapt this search to the characteristics of each database, specific filters were applied by year, language, and document type.

The inclusion criteria were as follows:

- Publications between 2020 and 2025.
- Studies related to digital competencies in the educational and research fields.
- Articles in Spanish and English.
- Peer-reviewed works with verifiable access.

Conversely, exclusion criteria were applied to:

- Articles lacking a clear methodological context.
- Duplicate works.
- Studies unrelated to digital competencies.
- Research not corresponding to the university level.

Based on the addressed theme, the analysis was organized into specific dimensions, and representative authors in each were identified.

Table 1
Classification of studies on digital competencies by analysis dimensions

Author(s)	Year	Organization by dimensions
George & Avello	2021	Teacher training
Moreno	2022	
Salazar & Lescano	2022	
Salazar	2022	
Viñoles et al.	2022	
Camacho & Salinas	2022	
Olaya et al.	2025	
Gau	2026	
Campa & Lozano	2023	Technology integration
Ventura et al.	2023	
Verdú et al.	2023	
Orozco et al.	2023	
Sánchez	2025	
Cattaneo et al.	2025	
Márquez-Baldó et al.	2025	
Lamoth et al.	2020	Digital literacy
Centeno	2021	
Jiménez et al.	2021	
Betancur & García	2022	
García et al.	2023	
Gómez et al.	2024	
Lei & Jiang	2025	
Ramírez et al.	2024	Institutional maturity
Ralda et al.	2024	
Amoako & Anane	2025	

Note. Author's own elaboration

Results and discussion

The systematic review allowed for the identification of multiple recent studies on digital skills in teaching practice, corresponding to publications from 2020 to 2025. These works demonstrate how the integration of technologies into teaching and learning processes has led to a significant transformation in educational praxis, opening new opportunities for innovation, while also posing challenges related to education, digital literacy, and adaptation to virtual environments.

Below is a summary of the main findings derived from the analysis of the selected authors.

Table 2
Analysis of the identified research articles

Author	Key contribution	Origin

(Ramírez et al., 2024)	This research conducted a bibliometric review concluding that the study of digital competencies has evolved to support teachers in more effectively managing their pedagogical practice through digital tools.	Peru
(Moreno, 2022)	The author states that digital competencies are essential for teachers to adapt and communicate effectively with their students.	Colombia
(Campa & Lozano, 2023)	It is indicated that higher education is experiencing significant digital growth, as current labor markets have changed considerably and demand more dynamic activities; in this context, Google Workspace stands out as one of the most utilized digital competencies.	Mexico
(Salazar & Lescano, 2022)	The authors point out that to strengthen digital competencies in teachers, it is necessary to increase training, thereby promoting the development of critical thinking to improve their classes.	Peru
(Ventura et al., 2023)	It is asserted that today's teachers must be multidisciplinary, which implies handling various digital tools to succeed in their work.	Peru
(George & Avello, 2021)	This article highlights the importance of digital competencies among university teachers, as they guide the educational process and need to strengthen and develop this capacity.	Mexico
(Salazar, 2022)	The research emphasizes that digital competencies are fundamental today, making it essential to offer training to teachers; however, some still resist abandoning traditional methods.	Peru
(Sánchez, 2025)	It is mentioned that incorporating digital tools and innovative approaches, which integrate new skills beyond traditional disciplines, contributes to generating knowledge more effectively.	Paraguay
(Viñoles et al., 2022)	In this study, it is argued that digital competencies represent a necessity in higher education, thus institutions must continuously train their teachers.	Spain
(Verdú et al., 2023)	It is noted that integrating digital technologies into education highlights the great importance of teachers' digital competencies, constituting a key element for university training.	Spain
(Camacho & Salinas, 2022)	The research underscores that developing digital competencies is essential in initial teacher training so that companies and society receive qualified and updated professionals.	Mexico
(García et al., 2023)	Digital competencies represent a challenge for many teachers, especially in research, as several are unaware of the proper use of available technologies.	Spain
(Gómez et al., 2024)	The authors mention that the COVID-19 pandemic revealed the reality of many teachers who were not proficient in digital tools, a situation that generated significant dissatisfaction due to their difficulty in adapting.	Spain

CC BY

(Centeno, 2021)	This article indicates that in 2020, numerous teachers at various educational levels were compelled to improve their digital skills due to remote modalities, revealing the importance of digital training to ensure quality teaching.	Mexico
(Lamoth et al., 2020)	This article highlights the relevance of digital literacy for university teachers, emphasizing that they must be prepared to address a student profile distinct from previous generations.	Cuba
(Jiménez et al., 2021)	It is emphasized that to conduct quality research, university teachers must master various technological skills that facilitate the research process.	Spain
(Ralda et al., 2024)	The research indicates that the digital maturity of institutions and universities is increasingly relevant due to the integration of digital practices and strategies in teaching work.	Spain
(Orozco et al., 2023)	The authors argue that teaching performance is linked to their digital competencies, making technological learning fundamental in the university context.	Ecuador
(Betancur & García, 2022)	Digital literacy is defined as the ability to use information technologies safely and responsibly, both at work and in recreation and communication.	Spain
(Olaya et al., 2025)	The topic of digital competencies among university professors has received increasing attention in information science, prompting universities to implement training, courses, conferences, and other formative activities.	Peru
Gau (2026)	Gaps between digital certification and self-regulated learning are evident, proposing adjustments to enhance motivation and interaction.	Taiwan
Cattaneo et al. (2025)	The beliefs of value and self-efficacy are highlighted as key factors in the adoption of technologies, emphasizing the DigCompEdu model.	Europe
Amoako & Anane (2025)	Teacher digital competence predicts resilience; furthermore, age moderates this relationship, although gender does not have a significant influence.	Ghana
Lei & Ziang (2025)	The levels of digital competence among teachers are mostly intermediate, with differences based on region and experience; thus, it is urgent to increase training initiatives.	China
Márquez-Baldó et al. (2025)	Information and Communication Technologies (ICT) are often used as a complement to analog resources and are rarely applied in educational evaluation and planning processes.	Spain

A review of twenty-five articles allowed for the identification of common trends and challenges related to digital competencies in the educational sphere. The analyzed studies, published between 2020 and 2025, underscore the profound transformation that modern education is undergoing, which demands that teachers develop technical, pedagogical, and communicative skills to effectively respond to the demands of contemporary learning. Based on this analysis, the findings were structured into four main dimensions: teacher training, technology integration, digital literacy, and institutional maturity, which are described below:

Teacher training

Teacher training constitutes a fundamental pillar in the development of digital competencies, as educators must continuously update themselves to meet the educational demands of the 21st century. In this regard, George and Avello (2021) along with Gau (2026) emphasize that university teachers act as guides who need to strengthen these competencies; while Moreno (2022) underscores that these skills are essential for facilitating communication and adaptation in digital environments. Additionally, Salazar and Lescano (2022) highlight that training programs should promote critical thinking, and Viñoles et al. (2022) show that European universities have intensified their efforts to offer updating programs. In line with this, Camacho and Salinas (2022) emphasize the importance of integrating digital competencies into initial training, in order to prepare graduates for the current demands of the labor market.

However, significant challenges persist. Salazar (2022) identifies a gap between innovative teachers and those who maintain traditional practices, a situation that creates inequalities in educational quality. On the other hand, Olaya et al. (2025) insist that teacher training must be continuous and part of a comprehensive institutional strategy that includes workshops, conferences, and specialized courses. Collectively, the findings confirm that continuous and systematic teacher training is crucial for educators to acquire and consolidate digital competencies sustainably.

Technology integration

The incorporation of digital tools into educational processes emerges as another priority aspect in the reviewed studies. Campa and Lozano (2023) highlight that the use of Google Workspace has transformed the dynamics in higher education, promoting more collaborative and creative activities. Ventura et al. (2023) add that teachers need to be multidisciplinary and manage various digital tools to adapt to diverse learning contexts. In this regard, Verdú et al. (2023) and Márquez-Baldó et al. (2025) agree that technological integration is an essential component of university education, while Orozco et al. (2023) link effective teaching performance with the ability to integrate technologies into instruction.

Moreover, Sánchez (2025) and Cattaneo et al. (2025) broaden the perspective by indicating that this integration drives innovation and generates new ways of producing knowledge that transcend traditional disciplinary boundaries. However, García et al. (2023) warn that a significant limitation lies in the lack of technical mastery applied to research, which restricts the full utilization of technologies. Thus, the collected evidence confirms that technological integration not only modernizes teaching but is also a key factor for pedagogical transformation and the improvement of educational quality in higher education.

Digital literacy

Digital literacy is recognized as an essential requirement for university teaching in modern contexts. Lamoth et al. (2020) caution that teachers must possess basic digital competencies, as today's students have learning habits distinct from those of previous generations. Complementarily, Centeno (2021) and Lei and Ziang (2025) illustrate how the pandemic accelerated the need for teachers at all levels to rapidly enhance their digital skills. Jiménez et al. (2021) emphasize that digital literacy is key to research training, enabling teachers to guide quality academic projects.

Some authors expand this perspective, emphasizing the critical and ethical dimension of literacy. Betancur and García (2022) define it as the ability to use technologies safely and responsibly, while Gómez et al. (2024) demonstrate how emergency remote teaching revealed significant deficiencies in this area. In turn, García et al. (2023) conclude that deficits in these competencies limit research work, representing a challenge for academic production. Ultimately, digital literacy is conceived not just as technical handling of devices but as a transversal process that articulates critical, communicative, and ethical skills in educational practice.

Institutional maturity

Institutional maturity represents the organizational level at which universities consolidate policies, strategies, and resources that strengthen their teachers' digital competencies. Ramírez et al. (2024), through a bibliometric review, demonstrate that the evolution of the concept of digital competencies is closely linked to university pedagogical management. Complementarily, Ralda et al. (2024) assert that university digital maturity is a key indicator of institutional quality, as it is integrated in a planned manner into teaching practices and strategies.

Moreover, the reviewed studies agree that digital transformation should not solely depend on individual initiative but requires robust university policies. Moreno (2022), George and Avello (2021), and Amoako and Anane (2025) emphasize that training in digital competencies needs institutional support to ensure continuity and coherence in training programs. Collectively, these studies confirm that institutional maturity is a decisive factor for

ensuring the sustainability of technological integration and digital literacy, preventing isolated efforts and strengthening universities' commitment to educational innovation.

Conclusions

The systematic review revealed that digital competence is an essential component of current teaching practice, constituting a fundamental requirement for ensuring educational quality. It was highlighted that continuous training plays a key role in enabling teachers to acquire and consolidate their technical skills, while the appropriate integration of digital tools significantly contributes to improving the teaching-learning process. Furthermore, digital literacy is conceived as an integral process that goes beyond mere technology use, incorporating practical, critical, and communicative dimensions.

Finally, the institutional context is crucial, as educational policies and organizational support directly influence the level and effectiveness with which teachers incorporate technology into their work.

Overall, the findings confirm that digital competencies represent both a challenge and an opportunity for modern education, as they enable the transformation of educational processes, respond to current social demands, and foster meaningful learning for students.

References

Aguirre, G., & Ruiz, M. (2012). Competencias digitales y docencia: Una experiencia desde la práctica universitaria. *Innovación Educativa, 12*(59), 121–141. https://www.scielo.org.mx/scielo.php?pid=S1665-26732012000200009&script=sci_abstract

Amoako, I., & Anane, E. (2025). Digital teaching competence and resilience across tutors of different age and gender in Ghana. *Discov Educ, 4*, 89. https://doi.org/10.1007/s44217-025-00484-9

Barrios, K., Orozco, D., Pérez, E., & Conde, G. (2021). Nuevas recomendaciones de la versión PRISMA 2020 para revisiones sistemáticas y metaanálisis. *Acta Neurológica Colombiana, 37*(2), 105–106. https://doi.org/10.22379/24224022373

Betancur, V., & García, A. (2022). Necesidades de formación y referentes de evaluación en torno a la competencia digital docente: Revisión sistemática. *Fonseca, Journal of Communication, 25*, 133–147. https://doi.org/10.14201/fjc.29603

Camacho, A., & Salinas, R. (2022). Estrategia basada en la evaluación auténtica para el desarrollo de competencias digitales en la formación inicial docente. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo, 12*(24). https://doi.org/10.23913/ride.v12i24.1126

Campa, L., & Lozano, A. (2023). Competencias digitales docentes y su integración con las herramientas de Google Workspace: Una revisión de la literatura. *Transdigital, 4*(7), 1–22. https://doi.org/10.56162/transdigital163

Cattaneo, A. A. P., Antonietti, C., & Rauseo, M. (2025). How do vocational teachers use technology? The role of perceived digital competence and perceived usefulness in technology use across different teaching profiles. *Vocations and Learning, 18*, 5. https://doi.org/10.1007/s12186-025-09359-4

Centeno, R. (2021). Formación tecnológica y competencias digitales docentes. *Revista Tecnológica-Educativa Docentes 2.0, 11*(1), 174–182. https://doi.org/10.37843/rted.v11i1.210

Contreras, J. (2003). La práctica docente y sus dimensiones. *Valoras UC*, 1-3. https://iescapayanch-cat.infd.edu.ar/sitio/wp-content/uploads/2020/03/La_practica_docente_y_sus_dimensiones.pdf

Díaz, I., Cerveró, G., Suárez, J., & Natividad, A. (2020). La relación entre las competencias TIC, el uso de las TIC y los enfoques de aprendizaje en alumnado universitario de educación. *Revista de Investigación Educativa, 38*(2), Article 2. https://doi.org/10.6018/rie.409371

Domingo, M., Bosco, A., Carrasco, S., & Sánchez, J. (2020). Fomentando la competencia digital docente en la universidad: Percepción de estudiantes y docentes. *Revista de Investigación Educativa, 38*(1), Article 1. https://doi.org/10.6018/rie.340551

García, R., Buenestado, M., & Ramírez, M. (2023). Evaluación de la competencia digital docente: Instrumentos, resultados y propuestas. Revisión sistemática de la literatura. *Educación XX1, 26*(1), 273–301. https://doi.org/10.5944/educxx1.33520

Gau, L. S. (2026). Cultivating sustainable self-regulated learning strategies in digital learning courses. En W. S. Wang, F. E. Sandnes, C. F. Lai, T. A. Sandtrø, & Y. M. Huang (Eds.), *Innovative technologies and learning*. Lecture Notes in Computer Science, vol 15914. Springer, Cham. https://doi.org/10.1007/978-3-031-98197-5_22

George, C., & Avello, R. (2021). Competencias digitales para la práctica docente en pregrado en dos universidades latinoamericanas. *EDMETIC, 10*(1), 1–19. https://doi.org/10.21071/edmetic.v10i1.12713
Gómez, M., Hijón, R., Santacruz, L., & Pérez, D. (2024). Evolución de la percepción de la competencia digital en la formación universitaria del profesorado tras la enseñanza remota de emergencia. *Revista Portuguesa de Educação, 37*(1), e24016. https://doi.org/10.21814/rpe.29708
Guerrero, R., Simisterra, A., & Ponce, J. (2022). Impacto de nuevas tecnologías en la educación universitaria en Ecuador. *Revista Qualitas, 23*(23), Article 23. https://doi.org/10.55867/qual23.02
Jiménez, D., Muñoz, P., & Sánchez, F. (2021). La competencia digital docente, una revisión sistemática de los modelos más utilizados. *Revista Interuniversitaria de Investigación en Tecnología Educativa*, 105–120. https://doi.org/10.6018/riite.472351
Lamoth Soler, Y., Montero O'farrill, J. L. & García Bruzón, Y. (2020). La alfabetización digital en los docentes universitarios: Un reto para las universidades contemporáneas. *EduSol, 20*(73), 193-205. http://scielo.sld.cu/scielo.php?script=sci_abstract&pid=S1729-80912020000400193
Lei, H., & Jiang, Z. (2025). Assessing the digital competence and its influencing factors among foreign language teachers in Chinese universities. *Humanities and Social Sciences Communications, 12*, 966. https://doi.org/10.1057/s41599-025-05394-7
Márquez-Baldó, L., Orellana, N., Almerich, G., & Suárez-Rodríguez, J. (2025). Attitude toward ICT integration for teachers. Validation of a multidimensional scale. *Computers in Human Behavior Reports, 20*, 100786. https://doi.org/10.1016/j.chbr.2025.100786
Molina, M., & Nieto, J. (2021). *Análisis de la práctica docente y educativa en formación profesional* [Trabajo Fin de Master, Universidad de Valladolid]. https://uvadoc.uva.es/bitstream/handle/10324/58409/TFM-L622.pdf
Moreno, C. (2022). Círculo moral: El caso de los animales no humanos como sujetos de trato moral. *Tesis Psicológica, 17*(1), 1–31. https://doi.org/10.37511/tesis.v17n1a1
Olaya, J., Contreras, F., & Salinas, Á. (2025). Competencias digitales en los docentes universitarios: Una revisión sistemática. *Revista InveCom, 5*(1). https://doi.org/10.5281/zenodo.12659838
Orozco, N., Rosero, A., Guallpa, J., & Rubin, R. (2023). Las competencias digitales para el buen desempeño docente en Latinoamérica: Una revisión sistémica. *LATAM Revista Latinoamericana de Ciencias Sociales y Humanidades, 4*(2). https://doi.org/10.56712/latam.v4i2.631
Ralda, A., Lázaro, J., & Holgado, J. (2024). La mejora de la competencia digital docente, avanzando hacia la madurez digital institucional: Una revisión sistemática. *Edutec, Revista Electrónica de Tecnología Educativa, 88*, 179–199. https://doi.org/10.21556/edutec.2024.88.3143
Ramírez, M., Gómez, H., & Pacheco, E. (2024). Competencias digitales y actitud docente en la educación básica regular: Un estudio bibliométrico. *Espacios en Blanco. Revista de Educación, 2*(34), 145–156. https://doi.org/10.37177/UNICEN/EB34-405
Reyes, C., & Martínez, R. (2021). Competencias digitales para la práctica docente en pregrado en dos universidades latinoamericanas. *EDMETIC, 10*(1). https://doi.org/10.21071/edmetic.v10i1.12713
Rodríguez, A. (2021). Competencias digitales docentes y su estado en el contexto virtual. *Revista Peruana de Investigación e Innovación Educativa, 1*(2), e21038. https://doi.org/10.15381/rpiiedu.v1i2.21038
Romero Martínez, S. J., Hernández Lorenzo, C. J., & Ordóñez Camacho, X. G. (2016). La competencia digital de los docentes en educación primaria: análisis cuantitativo de su competencia, uso y actitud hacia las nuevas tecnologías en la práctica docente. *Revista Tecnología, Ciencia y Educación*, (4), 33–51. https://doi.org/10.51302/tce.2016.77
Salazar, M. (2022). Competencias digitales en la docencia universitaria. *Revista Latinoamericana Ogmios, 2*(3), 95–101. https://doi.org/10.53595/rlo.v2.i3.026
Salazar, M., & Lescano, G. (2022). Competencias digitales en docentes universitarios de América Latina: Una revisión sistemática. *Alpha Centauri, 3*(2), 2–13. https://doi.org/10.47422/ac.v3i2.69
Sánchez, P. (2025). Competencias tecnológicas emergentes de docentes universitarios desde una visión transdisciplinaria. *Revista de la Sociedad Científica del Paraguay, 30*(1), 14–22. https://doi.org/10.32480/rscp.2025.30.1.1422
Ventura, D., Gonzales, V., & Barreto, M. (2023). Competencias digitales en docentes: Un estudio situacional. *Horizontes. Revista de Investigación en Ciencias de la Educación, 7*(28), 881–896. https://doi.org/10.33996/revistahorizontes.v7i28.561
Verdú, M., Lázaro, J., Grimalt, C., & Usart, M. (2023). El concepto de competencia digital docente: Revisión de la literatura. *Revista Electrónica de Investigación Educativa, 25*, 1–13. https://doi.org/10.24320/redie.2023.25.e11.4586

Viñoles, V., Sánchez, A., & Esteve, F. (2022). Desarrollo de la competencia digital docente en contextos universitarios: Una revisión sistemática. *REICE. Revista Iberoamericana sobre Calidad, Eficacia y Cambio en Educación, 20*(2). https://doi.org/10.15366/reice2022.20.2.001

AUTHORSHIP CONTRIBUTION

1. Conceptualization: Norma Quenema Camacho
2. Data curation: Virginia Asuncion Cerafin Urbano
3. Formal analysis: Selman Dennis Condeso Camizan
4. Research: Virginia Asuncion Cerafin Urbano, Selman Dennis Condeso Camizan
5. Methodology: Norma Quenema Camacho
6. Project management: Selman Dennis Condeso Camizan
7. Validation: Selman Dennis Condeso Camizan
8. Writing – proofreading and editing: Virginia Asuncion Cerafin Urbano