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Models of digital teaching competencies and their relationship with artificial intelligence: A systematic review

Modelos de competencias digitales docentes y su relación con la inteligencia artificial: revisión sistemática

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Abstract

This research examines the transformation of digital teacher competence (DTC) frameworks in the face of the disruptive impact of artificial intelligence (AI) on contemporary education systems. Through a systematic review, based on the PRISMA methodology, 30 scientific articles indexed in Scopus, ProQuest, and Dialnet were audited. The findings demonstrate that, given the inadequacy of traditional models such as DigCompEdu, there is a growing need for a TPACK-AI approach that integrates design thinking, algorithmic ethics, and advanced AI literacy. The analysis reveals that the effective adoption of these technologies depends not only on infrastructure but also on psychosocial constructs such as perceived self-efficacy and the mitigation of technostress. It concludes that current teachers face a critical gap between instrumental digital skills and the demands of automated teaching, which highlights the risk of a new socioeconomic "access to intelligence gap". Finally, it is emphasized that sustainable innovation requires an urgent update of continuing education policies and institutional maturity that transcends individual efforts, reaffirming the teacher's role as a critical manager of information and an essential pedagogical mediator to guarantee equity and quality in education in the knowledge era.

Keywords: digital teaching competence, artificial intelligence, educational models.

Resumen

Esta investigación examina la transformación de los marcos de competencia digital docente (CDD) ante el impacto disruptivo de la inteligencia artificial (IA) en los sistemas educativos contemporáneos. A través de una revisión sistemática, fundamentada en la metodología PRISMA, se auditaron 30 artículos científicos indexados en Scopus, ProQuest y Dialnet. Los hallazgos demuestran que, ante la insuficiencia de modelos tradicionales como el DigCompEdu, emerge la necesidad de un enfoque TPACK-AI que integre el pensamiento de diseño, la ética algorítmica y una alfabetización en IA avanzada. El análisis revela que la adopción efectiva de estas tecnologías no depende exclusivamente de la infraestructura, sino de constructos psicosociales como la autoeficacia percibida y la mitigación del tecnoestrés. Se concluye que el profesorado actual enfrenta una brecha crítica entre las habilidades digitales instrumentales y las demandas de una enseñanza automatizada, lo que advierte sobre el riesgo de una nueva "brecha de acceso a la inteligencia" socioeconómica. Finalmente, se subraya que la innovación sostenible requiere de una actualización urgente de las políticas de formación continua y de una madurez institucional que trascienda la labor individual, reafirmando el rol docente como un gestor crítico de la información y mediador pedagógico esencial para garantizar la equidad y la calidad educativa en la era del conocimiento.

Palabras clave: competencia digital docente, inteligencia artificial, modelos educativos.

Introduction

In the knowledge age, technological innovation has ceased to be an optional resource and has become a cross-cutting axis of pedagogical practice. The rapid immersion of Information and Communication Technologies (ICT) demands that teachers develop strengthened and up-to-date professional competencies (Artavia-Díaz &

Castro-Granados, 2021). This scenario, however, has grown exponentially more complex with the ubiquity of Artificial Intelligence (AI), which requires not only technical skills but also a redefinition of teacher identity within digital environments (Flores-Pérez & Chiappe-Laverde, 2025; Vergara-Calderón & Rey-Sánchez, 2025). Historically, the COVID-19 pandemic acted as a catalyst that exposed critical deficiencies in the mastery of digital tools, yet it also opened a window for competency development in secondary and higher education (Cortes-Coss & Cortes-Coss, 2024). Despite such progress, significant access and usage gaps persist, and these are accentuated by the arrival of generative AI, given that institutional preparedness varies according to socioeconomic factors, thereby deepening inequality if not addressed through equitable technology policies (Martínez-Aranda & Lores-Gómez, 2025; Neilson & Lepe, 2025).

Recent literature suggests that digital competence can no longer be understood in isolation; concepts such as computational thinking (Loureiro et al., 2022) and design thinking (Rahimi, 2025) emerge as critical dimensions for solving complex problems in algorithm-mediated classrooms. Under this approach, teachers equipped with design thinking skills can transform chatbots from simple assistants into co-designers of the curriculum, fostering creativity and student narratives in contrast to automated and linear models (Rahimi, 2025). Likewise, at a conceptual level, this integration recontextualizes the TPACK (Technological Pedagogical Content Knowledge) framework, requiring the amalgamation of disciplinary knowledge with algorithmic capacities to generate personalized learning experiences (Zou et al., 2025).

Nevertheless, the psychological disposition and training of educators dictate the success of this transition. Teacher attitudes fluctuate between enthusiasm for innovation and concern over academic integrity (Prosenjak & Jakupčević, 2025). While self-efficacy, motivation, and communities of practice act as drivers for tools like ChatGPT, constructs such as technophobia, technostress, and outdated skills represent critical barriers (Flores & Chiappe, 2025; Fundi et al., 2024; Gómez et al., 2024; Morales et al., 2025). In this regard, it has been shown that self-efficacy and technological-pedagogical knowledge determine adoption intention, suggesting that continuing education programs should prioritize strengthening teachers' technical and pedagogical confidence to ensure sustainable change (Fundi et al., 2024).

Furthermore, competency development should not rest solely on the individual but requires solid educational leadership. Institutional preparedness assesses how administrators manage ethical risks and infrastructure; without a strategic, data-driven vision, individual teaching efforts risk fragmentation (Renta et al., 2025). It is also imperative to consider the ethical dimensions, data protection, and algorithmic governance implicit in AI literacy (Tenberga & Daniela, 2024). This digital teaching competence even expands toward a civic and critical dimension in areas such as the Social Sciences, equipping students to identify bias and misinformation, thereby safeguarding democratic values in an automated society (Morote & Colomer, 2024).

Despite the proliferation of studies, there is fragmentation regarding how traditional frameworks (such as DigCompEdu or UNESCO) should integrate AI literacy. Therefore, this research is justified by the need to systematize current evidence in order to identify the key dimensions of a teacher profile capable of successfully navigating the Fourth Industrial Revolution (Ally, 2019). This rapidly evolving landscape, combined with the need for a holistic understanding, motivates the present systematic review of studies published in the recent period.

To guide the manuscript, the following main research question is posed: What are the most relevant models or frameworks of digital teaching competencies, and how do they relate to the implementation of Artificial Intelligence in educational contexts, according to recent scientific literature? Accordingly, the general objective is to analyze the models of digital teaching competencies identified in the scientific literature and their relationship with artificial intelligence in contemporary educational practice.

Methodology

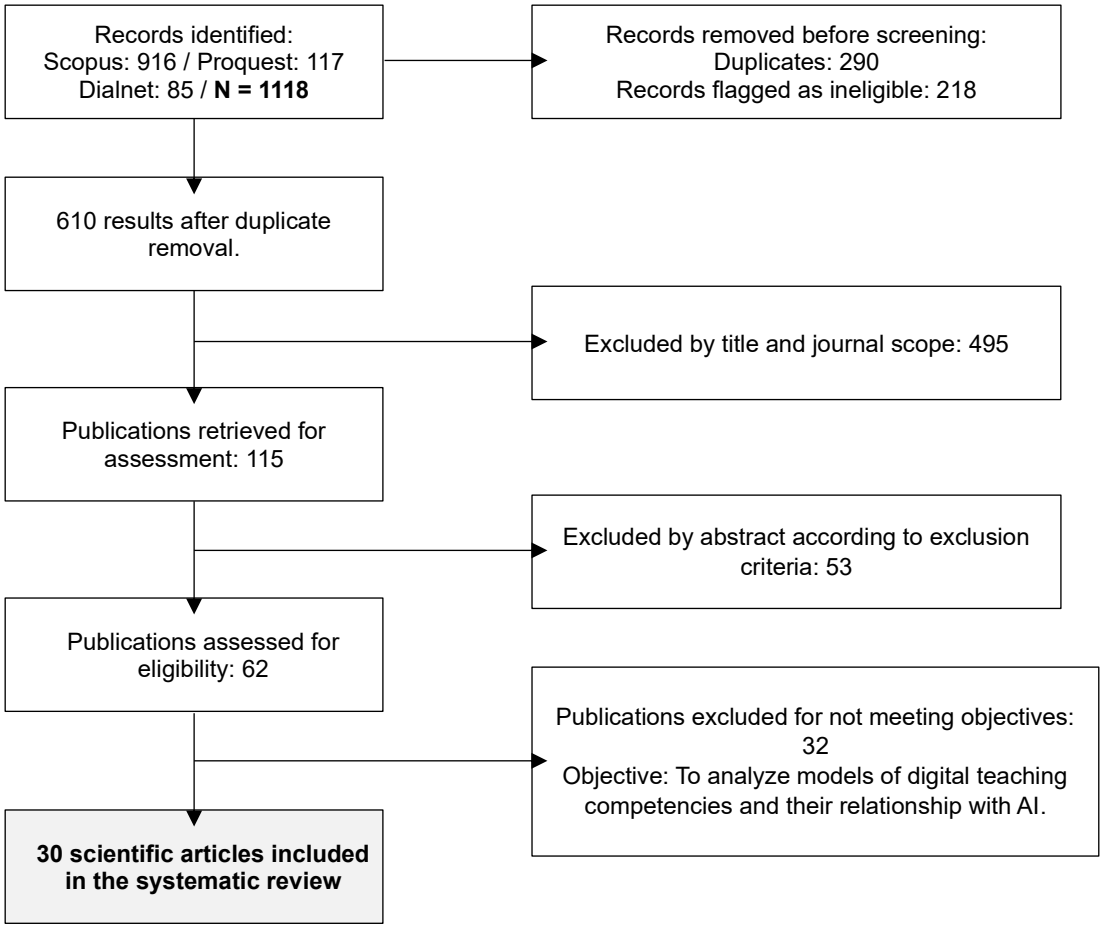
To ensure transparency and scientific rigor, a systematic review was conducted following the guidelines of the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) statement. This approach allows for the critical and replicable integration of existing evidence while minimizing interpretation errors.

Likewise, the study was oriented toward answering three central questions: (1) what models of digital teaching competencies have been identified for AI integration? (2) what are their main challenges or barriers to application? and (3) what is the impact of training on pedagogical practice? Correspondingly, the specific objectives focused on identifying such models, synthesizing their associated challenges (technophobia, ethics, and the digital divide), and classifying publications according to their methodological characteristics to establish trends in the field.

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It is worth noting that the search strategy included consultations in Scopus, ProQuest, and Dialnet, identifying an initial scope of 1,118 records (916, 117, and 85, respectively). In the screening phase, 218 duplicate records and 290 considered ineligible prior to analysis were removed. Subsequently, the remaining 610 results were evaluated by title and journal scope, excluding 495 articles for lack of thematic relevance. For the final selection, the 115 full-text documents retrieved underwent critical reading applying strict inclusion and exclusion criteria; 53 publications were discarded due to insufficient abstracts, and 32 were excluded for not aligning directly with the relational analysis between teaching competencies and artificial intelligence. After this refinement process, the final sample consisted of a corpus of 30 highly specialized scientific articles.

Figure 1
PRISMA flowchart of the systematic review



Note. Author's own elaboration

Results and discussion

The results of the systematic review evidence a significant relationship between digital teaching competencies and the effective integration of artificial intelligence into educational processes. This finding aligns with recent studies that maintain that mastery of digital tools is a fundamental requirement for teachers to understand, adapt, and implement AI-based technologies in their pedagogical practice. It is noteworthy that digital competencies include not only technical skills for using devices and platforms but also critical, ethical, and

pedagogical capacities that enable educators to assess the educational potential of AI tools and use them appropriately to support learning.

Table 1
Systematization of contributions

Author and year	Objective	Study type	Population	Results
Alastor & Martínez (2025)	To ground the integration of digital and AI competencies in the practicum.	Qualitative, theoretical and conceptual research.	Not applicable (theoretical model design).	Structuring of an integrated five-dimensional framework adapted to the practicum: instrumental, pedagogical, communicative, reflective, and ethical.
Ally (2019)	To define educational change forces and propose the virtual teacher profile toward 2030.	Qualitative, methodological and analytical.	34 international experts from 6 countries.	Identification of 12 transformative forces and structuring of a teaching profile composed of 105 specific competencies.
Artavia & Castro (2021)	To analyze the teacher's role in relation to ICT through the evaluation of two international models.	Descriptive, qualitative (document analysis).	Not applicable (indexed literature review).	Characterization of the teacher as a guide and catalyst of knowledge; validation of the Comprehensive Teaching Competence Model.
Cárdenas-Rodríguez & Suárez-Monzón (2024)	To analyze the improvement of digital teaching competencies through AI in professional development programs.	Qualitative, systematic literature review.	14 selected scientific articles.	Chatbots and personalization platforms mitigate administrative tasks, although mass adoption requires overcoming infrastructure gaps.
Cortes-Coss & Cortes-Coss (2024)	To compare digital competencies and training needs post-pandemic at UANL.	Non-experimental, descriptive and cross-sectional.	100 university and secondary-level teachers.	"Regular" technological proficiency in both groups; high institutional interest in training, but with a need for pedagogical grounding.

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Cruz et al. (2025)	To analyze innovative methodologies driven by AI in digital competence development.	Qualitative-descriptive, systematic review.	25 indexed academic studies.	The integration of active methodologies (projects and adaptive learning) with AI tools enhances digital teaching competencies.
Figueroa (2023)	To propose a ten-competency framework for digital skills in the face of AI disruption.	Qualitative, descriptive and analytical.	Not applicable (conceptual reflection article).	Definition of a paradigm focused on human capabilities irreducible to algorithms, such as lateral thinking and critical ethics.
Flores & Chiappe (2025)	To synthesize determining factors (drivers and barriers) of technological literacy.	Qualitative-descriptive, thematic analysis.	91 selected scientific articles.	Classification of drivers (self-efficacy, communities of practice) and critical barriers (technophobia, inadequate training).
Fundi et al. (2024)	To assess readiness for AI teaching among K-12 teachers in Kenya.	Quantitative, empirical and cross-sectional.	308 teachers from 37 counties in Kenya.	Technical confidence, ethical knowledge, and subjective norms determine teacher preparedness, outweighing perceived fears.
Gómez et al. (2024)	To unravel the motivations driving future teachers to integrate technology.	Qualitative, non-experimental and cross-sectional.	36 student teachers.	Autonomous technology use in training is motivated by extrinsic goals (grades and obtaining scholarships).
Juárez et al. (2024)	To diagnose technological skills and propose an evaluation methodology.	Mixed-methodological (questionnaire and focus groups).	60 higher education teachers in Mexico.	Evidence of technological gap: 63.6% at intermediate level, 26.4% advanced, and 10% beginner in cutting-edge technologies.
López et al. (2025)	To relate digital competence and personal hobbies to AI adoption.	Quantitative, empirical and cross-sectional.	244 participants (74 teachers and 170 students).	No gender or role differences in AI hobbies; students show higher usage frequency, but teachers excel in content creation.

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Loureiro et al. (2022)	To analyze the computational thinking approach in four international frameworks.	Exploratory, qualitative and comparative.	4 regulatory frameworks (UNESCO, EU, ISTE, INTEF).	Lack of conceptual consensus on computational thinking and a latent absence of methodological guidelines for its implementation.
Marolova & Trajkovski (2024)	To evaluate the use and effectiveness of ChatGPT in foreign language classes.	Mixed-method approach (quantitative and qualitative).	30 language school students.	AI tools foster individualized learning, provide real-time feedback, and increase motivation.
Martínez-Aranda & Lores-Gómez (2025)	To analyze socioeconomic, cultural, and gender disparities in access and digital use.	Qualitative, systematic literature review.	11 selected scientific articles.	Persistence of educational inequalities linked to first-, second-, and third-level digital divides in vulnerable sectors.
Morales et al. (2025)	To analyze determining factors in the acceptance and adoption of generative AI among trainee teachers.	Quantitative, structural equation modeling.	233 trainee teachers.	Perceived usefulness and ease of use predict attitude toward AI; task compatibility is the most impactful factor.
Morote & Colomer (2024)	To present the conceptual bases and lines of the TECSOCO Project linking digital and social competencies.	Descriptive, conceptual educational innovation.	Not applicable (teaching project foundation).	Strategic design of methodological lines for the 2024–2025 course incorporating the critical use of Artificial Intelligence.
Neilson & Lepe (2025)	To evaluate institutional preparedness for generative AI and its association with student competencies.	Quantitative, empirical and comparative at large scale.	ICILS 2023 global sample (thousands of students and principals).	Vulnerable schools show less readiness to adopt AI; positive correlation between institutional maturity and student competencies.
Pita et al. (2025)	To describe the digital competencies required in basic education in the face of Educational Artificial Intelligence.	Qualitative, systematic and exploratory review.	Selected indexed sources (Scopus, Dialnet, UNESCO).	Urgent need to move from elementary technical proficiency toward critical, ethical, and didactic AI literacy.

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Prosenjak & Jakupčević (2025)	To investigate knowledge and attitudes of English teachers toward AI in the classroom.	Exploratory, descriptive with mixed-method approach.	63 primary and secondary EFL teachers.	Recognition of AI's pedagogical potential paired with severe ethical challenges and limitations in institutional preparedness.
Rahimi (2025)	To psychometrically validate the LTDTAILT scale for measuring teacher design thinking when teaching with AI.	Quantitative, instrumental psychometric development.	234 foreign language teachers.	Successful validation of a robust 30-item, 5-dimension scale for diagnosing design thinking in automated environments.
Rahimi & Teimouri (2025)	To conceptually analyze the role of ChatGPT in cultivating 21st-century digital teaching competencies.	Theoretical, qualitative, and analytical-propositional.	Not specified (indexed repositories).	ChatGPT acts as an interactive catalyst fostering complex problem-solving, computational thinking, and autonomous learning.
Renta et al. (2025)	To synthesize the impact of AI on educational leadership, identifying operational and ethical challenges.	Qualitative, scoping review.	33 selected scientific articles.	AI optimizes data-based administration but requires leaders to develop AI literacy and ethical digital leadership.
Rubio et al. (2025)	To analyze the level of digital competence in Official Language Schools according to teaching modality.	Quantitative, descriptive and correlational.	357 foreign language teachers in Andalusia.	Moderate-high self-perceived competence (B1-B2); blended-learning teachers show higher training levels than face-to-face counterparts.
Sánchez et al. (2024)	To analyze scientific production on digital teaching competence in secondary education.	Ex post facto, bibliometric and content analysis.	102 indexed scientific articles.	Exponential growth in literature since 2020; preference for the DigCompEdu framework; most studied dimensions: engagement and digital pedagogy.
Tejada et al. (2024)	To compile academic contributions on the impact of AI and digital welfare challenges in classrooms.	Collective academic work (compiled book).	Not applicable (multiple independent chapters).	Structuring of a comprehensive compendium focused on learning analytics, active methodologies, and mitigation of teacher technostress.

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Tenberga & Daniela (2024)	To investigate components of AI literacy and its overlap with traditional frameworks.	Quantitative, validation through PCA.	70 educators from various levels in Latvia.	AI literacy constitutes an independent category from traditional skills and requires specific ethical training.
Valdivieso & Erazo (2020)	To analyze the inclusion of ICT in the Ecuadorian legal educational framework and the need for teacher training.	Theoretical, descriptive with qualitative approach.	Not applicable (normative document analysis).	Laws grant ICT a strategic role for equity, but a gap persists between policy guidelines and their actual implementation.
Vergara & Rey (2025)	To analyze pedagogical applications, continuing education challenges, and ethical implications of AI.	Theoretical-conceptual, qualitative approach.	Not specified (indexed productions).	AI transforms education toward adaptive personalization; teachers require critical, analytical, and ethical skills.
Zou et al. (2025)	To propose a pioneering conceptual framework for defining pedagogical competencies when integrating AI.	Theoretical research and conceptual framework development.	Not applicable (methodological reference proposal).	Introduction of the TPACK-AI model as a global benchmark to guide institutions in aligning pedagogical and algorithmic knowledge.

Conceptual evolution: from instrumental literacy to AI literacy

The evidence demonstrates that digital teaching competence has evolved from merely instrumental skills toward complex AI literacy. That is, whereas traditional frameworks such as DigCompEdu focused on content management and communication, the algorithmic emergency demands a capacity for "critical and algorithmic curation," whereby educators must understand the underlying logic of data, identify biases, and mitigate risks such as cyberplagiarism and technological dependency (Cárdenas-Rodríguez & Suárez-Monzón, 2024; Figueroa, 2023; Tenberga & Daniela, 2024). In this new paradigm, ethics, privacy, and data security cease to be optional modules and become the axis that sustains trust in automated classroom systems (Pita et al., 2025; Tenberga & Daniela, 2024).

Emerging pedagogical models and their didactic applicability

At a conceptual level, this evolution is optimally operationalized through the TPACK-AI model, which recontextualizes teaching practice as an indivisible amalgam of disciplinary, pedagogical, and technological knowledge adapted to algorithmic capacities (Zou et al., 2025). Under this approach, the educator's role shifts toward that of a "technological mediator" with robust informational literacy (Artavia & Castro, 2021). Likewise, macro-competencies of an analytical and creative nature, such as Computational Thinking and Design Thinking, are positioned as essential methodological pillars; these facets empower teachers to structure complex prompts, decompose logical problems, and transform virtual assistants like ChatGPT into co-designers of the curriculum within active methodologies such as Challenge-Based Learning (Cruz et al., 2025; Loureiro et al., 2022; Rahimi, 2025). The didactic applicability of these systems is particularly evident in language teaching, where immediate feedback significantly improves fluency, grammatical accuracy, and student narrative (Marolova & Trajkovski, 2025; Rahimi & Teimouri, 2025).

Psychosocial constructs, motivation, and educator digital well-being

Moreover, the analysis reveals that AI integration is not exclusively contingent on infrastructure but on teachers' intrinsic and behavioral constructs. Through structural equation models, it is confirmed that perceived self-efficacy and positive attitude are the main predictors of actual adoption, surpassing the mere possession of isolated technical skills (Flores & Chiappe, 2025; Morales et al., 2025). For didactic transformation to occur, there must be a clear "perceived usefulness," that is, the conviction that technology reduces administrative burden or enhances learning; otherwise, adoption remains superficial and is hindered by latent barriers such as technophobia, technical unfamiliarity, and technostress (Flores & Chiappe, 2025; Gómez et al., 2024; Juárez et al., 2024). Additionally, fear of job displacement, concern over student plagiarism, and loss of academic integrity act as psychological blockages that urgently need to be addressed through resilience and digital well-being (Prosenjak & Jakupčević, 2025; Tejada et al., 2024). In contrast to rigidly structured technical workshops, there is a growing need to encourage playful and informal exploration, given that teachers who develop digital hobbies demonstrate more organic integration of AI into their formal practices (López et al., 2025).

Institutionalization of technology and educational leadership

Individual teacher competence proves sterile if not supported by the maturity of the educational environment. The concept of "institutionalization" highlights that the systemic success of AI correlates directly with the existence of internal regulations, adequate infrastructure, and a clear administrative vision (Neilson & Lepe, 2025). In this regard, a distributed and strategic "Digital Leadership" is demanded from school administrators to manage ethical dilemmas and data-driven decision-making (Renta et al., 2025). Nevertheless, a strong macro-educational disconnect coexists due to the gap between legal frameworks or public digitalization policies and actual teacher training programs, a sensitive articulation deficit particularly evident in secondary education, where competency levels in security and multimedia creation remain alarmingly low (Sánchez et al., 2024; Valdivieso & Erazo, 2020).

Equity policies and the access-to-intelligence gap

Finally, the literature warns of a critical structural phenomenon: the mutation of the traditional digital divide into an "access-to-intelligence gap." Global data reveal drastic disparities in levels of institutional preparedness, threatening to relegate vulnerable educational centers lacking resources compared to those with advanced capabilities (Neilson & Lepe, 2025). Unequal access to paid foundational AI models versus limited free versions risks automating low-quality instruction for less favored sectors, reserving highly personalized hybrid tutoring for elites (Martínez & Lores, 2025). Overcoming this socioeconomic segregation requires a paradigm resilience oriented toward inclusion (Vergara & Rey, 2025), the design of social-impact innovation projects (Morote & Colomer, 2024), and the practical strengthening of these capacities within the practicum space in education degree programs (Alastor & Martínez, 2025).

Ultimately, the findings of this systematic review confirm that strengthening digital competencies constitutes a strategic element for ensuring an ethical, critical, and pedagogically appropriate incorporation of artificial intelligence in education, highlighting that educational institutions and teacher training bodies should promote training programs that simultaneously integrate digital competencies and artificial intelligence, with the purpose of preparing teachers to respond to the demands of contemporary educational environments and contribute to the development of innovative, inclusive, and quality education.

Conclusions

The research allows concluding that Digital Teaching Competence has evolved from basic instrumental skills toward complex AI literacy. This transition demands that educators move toward algorithmic curation and co-creation with automated systems, where self-efficacy and technical proficiency prove insufficient if not accompanied by active methodologies such as Design Thinking. Likewise, the actual adoption of AI is strongly conditioned by psychosocial factors and digital well-being, positioning technostress and attitudinal barriers as more critical obstacles than physical infrastructure itself. Structurally, a concerning mutation of the digital divide toward an "access-to-intelligence gap" is observed, which threatens to segregate the quality of pedagogical mediation according to socioeconomic factors, relegating limited automated models to vulnerable sectors. Faced with this scenario, educational transformation cannot depend on individual will; it requires a structural reform of continuing

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education policies and institutional technological governance that guarantees the ethical and equitable use of data as a public good.

In light of this panorama, it is recommended that future empirical, large-scale comparative studies delve deeper into this access gap, analyzing the impact of paid AI models versus free options on educational equity across public and private institutions. Likewise, it is imperative to validate the multidisciplinary applicability of the TPACK-AI model across different fields of knowledge (exact sciences versus humanities) to determine the existence of a universal competency core.

Finally, scientific literature should orient itself toward the urgent design of evidence-based practical guides for privacy management and ethical data use in the classroom. Methodologically, the academic community is urged to move beyond the limitations of self-reporting by developing more sophisticated assessment instruments, such as rubrics for actual performance and AI-assisted simulations capable of measuring teaching competence in a fully objective manner. Only through this empirical and methodological shift will it be possible to consolidate clear guidelines for educational agencies to design sustainable curricula, ensuring that artificial intelligence enhances human critical thinking rather than standardizing instruction.

References

Alastor, E., & Martínez-García, I. (2025). Competencias digitales e inteligencia artificial en el Prácticum: Un marco conceptual para la formación de agentes educativos. *Revista Prácticum, 10*(1), 66–84. https://www.revistas.uma.es/index.php/iop/es/article/view/21780/22021

Ally, M. (2019). Competency profile of the digital and online teacher in future education. *International Review of Research in Open and Distributed Learning, 20*(2). https://doi.org/10.19173/irrodl.v20i2.4206

Artavia-Díaz, K. Y., & Castro-Granados, A. (2021). Modelos de competencias digitales docentes: El impacto de las TIC en el rol docente. *Revista Educación Superior, 20*(32), 37–59. https://dialnet.unirioja.es/servlet/articulo?codigo=9026063

Cárdenas-Rodríguez, J. S., & Suárez-Monzón, N. (2024). La inteligencia artificial en el desarrollo de las competencias digitales de los educadores: Una revisión sistemática. *Revista Mexicana de Investigación e Intervención Educativa, 3*(2), 62–70. https://doi.org/10.62697/rmiie.v3i2.85

Cortes-Coss, A., & Cortes-Coss, D. E. (2024). La pandemia por COVID-19: Una apertura para el desarrollo de competencias digitales en docentes de nivel medio superior y superior. *Revista Dilemas Contemporáneos: Educación, Política y Valores, 11*(3). https://dilemascontemporaneoseducacionpoliticayvalores.com/index.php/dilemas/article/download/4145/4038/

Cruz-Guimaraes, J. L., Reategui-Panduro, P. C., Solsol-Reyna, M. G., Padilla-Gonzales, M., & Acosta-Grández, C. G. (2025). Metodologías innovadoras para el desarrollo de competencias digitales en docentes a través de la inteligencia artificial. *Ciencia Latina Revista Científica Multidisciplinar, 9*(3). https://doi.org/10.37811/cl_rcm.v9i3.17899

Figueroa, P. L. (2023). Competencias digitales docentes en tiempos de IA. *Revista EducaT: Educación virtual, Innovación y Tecnologías, 4*(2). https://hemeroteca.unad.edu.co/index.php/educat/article/view/8066

Flores-Pérez, W., & Chiappe-Laverde, A. (2025). Integrating AI into education: Preparation factors and teachers' digital competencies. *Revista Colombiana de Educación*, (97), 23–38. https://doi.org/10.17227/rce.num97-20825

Fundi-Mwaniki, M., Sanusi-Ismaila, I. T., Oyelere-Solomon, S. S., & Ayere-Mika, M. (2024). Advancing AI education: Assessing Kenyan in-service teachers' preparedness for integrating artificial intelligence in competence-based curriculum. *Computers in Human Behavior Reports*, *14*, Artículo 100412. https://hdl.handle.net/10871/135748

Gómez-Trigueros, I. M., Ruiz-Bañuls, M., Esteve-Faubel, J. M., & Mareque-León, F. (2024). Teacher motivation: Exploring the integration of technology and didactics in the narratives of future teachers. *Social Sciences, 13*(4), 217. https://doi.org/10.3390/socsci13040217

Juárez-Zainos, U., Rodriguez-Merino, L., & Garcés-Báez, A. (2024). Fortaleciendo las competencias digitales docentes: Un imperativo ante la integración de la inteligencia artificial en la educación superior. *Ciencia Latina Revista Científica Multidisciplinar, 8*(4). https://www.researchgate.net/publication/382711226_Fortaleciendo_las_Competencias_Digitales_Docentes_Un_Imperativo_ante_la_Integracion_de_la_Inteligencia_Artificial_en_la_Educacion_Superior

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López-Secanell, I., Gamero-Sandemetrio, E., & López-Requena, E. (2025). Inteligencia artificial, competencia digital y aficiones personales: Implicaciones para la educación superior. *Pixel-Bit. Revista de Medios y Educación*, *73*, e111514. https://doi.org/10.12795/pixelbit.115117

Loureiro-Cardoso, A. C., Meirinhos-Sevilla, M., Osório-Julião, A. J., & Valente-Pires, L. (2022). El pensamiento computacional en los marcos de competencia digital docente. *Revista Prisma Social*, (38), 77–93. https://dialnet.unirioja.es/servlet/articulo?codigo=8532278

Marolova-Stojanova, D., & Trajkovski-Filipov, V. (2024). Trabajo con inteligencia artificial en las clases de alemán: Estudio de caso. *Hachetetepé. Revista Científica de Educación y Comunicación*, (29), 1–15. https://doi.org/10.46763/PALIM251019227j

Martínez-Aranda, B., & Lores-Gómez, B. (2025). La brecha digital en el contexto de la Educación Secundaria Obligatoria en España. Revisión sistemática de la literatura. *Revista Dilemas Contemporáneos: Educación, Política y Valores, 12*(2). https://doi.org/10.46377/dilemas.v12i2.4531

Morales-Cevallos, M. B., et al. (2025). Artificial intelligence adoption amongst digitally proficient trainee teachers: A structural equation modelling approach. *Computers and Education Open*, *6*. https://doi.org/10.3390/socsci14060355

Morote, A. F., & Colomer, J. C. (2024). Competencia digital docente: Desafíos para la enseñanza de las Ciencias Sociales a partir de un proyecto de innovación educativa. *Interdisciplinary Journal of Didactics*, (1), 19–32. https://doi.org/10.14198/ijd.27976

Neilson-González, C., & Lepe-Cabello, I. (2025). La inteligencia artificial generativa en centros educativos: Preparación institucional y competencias digitales en ICILS 2023. *Papeles de Economía Española*, (184), 164–180. https://dialnet.unirioja.es/servlet/articulo?codigo=10395587

Pita-Briones, K. M., Jiménez-Pin, K. E., Saldarriaga-Alvarado, I. P., & Meneses-López, S. G. (2025). Competencias digitales docentes frente a la inteligencia artificial educativa. *593 Digital Publisher CEIT, 10*(5), 900–916. https://doi.org/10.33386/593dp.2025.5.3569

Prosenjak-Bozic, B., & Jakupčević-Kovač, E. (2025). Attitudes of primary and secondary EFL teachers in Croatia towards artificial intelligence. *Journal of Digital Learning in Teacher Education*. https://doi.org/10.4312/elope.22.1.133-150

Rahimi, A. R. (2025). Developing and validating the scale of language teachers' design thinking: A key for innovation with AI. *System, 128*(1). https://doi.org/10.1016/j.caeai.2025.100420

Rahimi, A. R., & Teimouri, R. (2025). Advancing language education with ChatGPT: A path to cultivate 21st-century digital skills. *Research Methods in Applied Linguistics, 4*(1), Artículo 100218. https://doi.org/10.1016/j.rmal.2025.100218

Renta-Davids, A. I., et al. (2025). Navigating the challenges and opportunities of AI in educational leadership: A scoping review. *Educational Management Administration & Leadership*. https://doi.org/10.1002/rev3.70101

Rubio-Gragera, M., Palacios-Rodríguez, A., Cabero-Almenara, J., & Fernández-Scagliusi, M. V. (2025). Digital teaching competence regarding foreign languages and learning modes at official language schools in Andalusia (Spain). *Societies, 15*(4), 99. https://doi.org/10.3390/soc15040099

Sánchez-Castellanos, E., Marín-Suelves, D., & Gabarda-Méndez, V. (2024). La competencia digital docente en educación secundaria: Analizando la evidencia científica. *Hachetetepé. Revista Científica de Educación y Comunicación*, (28), 1–32. https://doi.org/10.25267/Hachetetepe.2024.i28.1204

Tenberga-Sisojeva, I., & Daniela-Krumina, L. (2024). Artificial intelligence literacy competencies for teachers through self-assessment. *International Journal of Emerging Technologies in Learning (iJET)*. https://doi.org/10.3390/su162310386

Tejada-Garitano, E., Garay-Ruíz, U., & Romero-Andonegui, A. (Coords.). (2024). *Horizontes educativos con inteligencia artificial: Innovación, tecnologías emergentes y bienestar digital*. Dykinson. https://www.dykinson.com/libros/horizontes-educativos-con-inteligencia-artificial/9791370066734/

Valdivieso-Guerrero, T. S., & Erazo-Bustamante, S. E. (2020). Políticas educativas y Tecnologías de la Información y Comunicación (TIC): Una mirada al Ecuador. *Revista Dilemas Contemporáneos: Educación, Política y Valores,* 7(3), Artículo 31. https://dilemascontemporaneoseducacionpoliticayvalores.com/index.php/dilemas/article/view/2329/2382

Vergara-Calderón, R. S., & Rey-Sánchez, S. P. (2025). Competencias digitales en la era del conocimiento: Nuevos enfoques desde la inteligencia artificial. *Revista Internacional Docentes Tecnológica-Educativa, 18*(1), 14–21. https://doi.org/10.37843/rted.v18i1.571

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Zou-Hong, D., et al. (2025). Navigating the future: Establishing a framework for educators' pedagogic AI knowledge. *Computers & Education*. https://doi.org/10.1111/ejed.70117