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Effects of the use of artificial intelligence on user experience: a systematic review of the literature

Efectos del uso de la inteligencia artificial en la experiencia usuario: una revisión sistemática de la literatura

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Abstract

The objective of this study was to identify and evaluate the effects of the use of artificial intelligence (AI) on user experience (UX) through a systematic review of the literature published between 2020 and 2025. To this end, a qualitative research study was conducted with a descriptive and exploratory scope, following the PRISMA 2020 guidelines. The search was carried out in the SCOPUS, ProQuest, EBSCO, and Web of Science databases, from which 113 articles were identified, and 22 studies that met the established methodological and thematic criteria were finally selected. The results show that AI has significantly transformed UX in the business, education, healthcare, and digital design fields. Among the positive effects are advanced personalization, operational efficiency, and improved human-system interaction. However, significant challenges also emerge, such as algorithmic opacity, biases, loss of autonomy, and ethical concerns related to privacy and transparency. Across the board, the research agrees on the need to guide AI development toward a human-centered approach based on trust and explainability. The study concludes by highlighting the urgency of strengthening digital literacy, ethical governance, and UX evaluation methodologies in the face of advances in autonomous and generative systems.

Keywords: artificial intelligence, information user, ethics.

Resumen

El presente estudio tuvo como objetivo identificar y evaluar los efectos del uso de la inteligencia artificial (IA) en la experiencia del usuario (UX) mediante una revisión sistemática de la literatura publicada entre 2020 y 2025. Para ello, se desarrolló una investigación de enfoque cualitativo, con un alcance descriptivo y exploratorio, siguiendo las directrices PRISMA 2020. La búsqueda se efectuó en las bases de datos SCOPUS, ProQuest, EBSCO y Web of Science, de las cuales se identificaron 113 artículos, seleccionándose finalmente 22 estudios que cumplían con los criterios metodológicos y temáticos establecidos. Los resultados evidencian que la IA ha transformado significativamente la UX en los ámbitos empresarial, educativo, sanitario y de diseño digital. Entre los efectos positivos destacan la personalización avanzada, la eficiencia operativa y la mejora en la interacción humano–sistema. No obstante, también emergen desafíos relevantes, como la opacidad algorítmica, los sesgos, la pérdida de autonomía y las preocupaciones éticas vinculadas con la privacidad y la transparencia. De forma transversal, las investigaciones coinciden en la necesidad de orientar el desarrollo de la IA hacia un enfoque centrado en el ser humano, basado en la confianza y la explicabilidad. El estudio concluye resaltando la urgencia de fortalecer la alfabetización digital, la gobernanza ética y las metodologías de evaluación de la UX ante el avance de sistemas autónomos y generativos.

Palabras clave: inteligencia artificial, usuario de información, ética.

Introduction

This article begins by addressing the dynamic and inescapable convergence between artificial intelligence (AI) and user experience (UX), a coupling that defines the current era of digital transformation. AI is no longer merely a tool for process optimization; projections indicate that business value is increasingly oriented toward a significant migration driven by AI-generated growth (Accenture, 2024). This economic perspective has sparked a race for technological adoption, where the quality of the user experience emerges as the primary competitive differentiator.

The capacity of AI to enhance personalization is undeniable. By processing vast amounts of big data, this technology offers tailored services that directly influence purchasing intentions and strengthen customer loyalty (Yun et al., 2024). Additionally, autonomous systems—projected to play a key role in business outcomes by 2029 (Bradford, 2024)—underscore a fundamental shift in how products and services are designed.

However, this technical sophistication gives rise to a crucial research problem: the gains in functionality are counterbalanced by an increasing ethical and emotional awareness among users. The very depth of personalization sought raises serious concerns regarding privacy, algorithmic bias, and lack of transparency in decision-making processes. This dilemma between functionality and ethics has been central to global ethical guidelines (Jobin et al., 2019), underscoring the need for a systematic review.

The theoretical framework is based on principles of human-computer interaction, with a particular emphasis on human-centered artificial intelligence (HCAI). The essence of HCAI is clear: AI should be conceived as a tool that augments and complements human capabilities, rather than replacing them, necessitating that systems be reliable and secure (Shneiderman, 2020).

Within this framework, the analysis revolves around several fundamental components. First, there is a palpable concern in the literature that the technical priorities of developers may overshadow the actual needs and experiences of users, raising the critical question: Where is the human in AI? (Bingley et al., 2023). Second, trust serves as the critical variable that determines adoption and acceptance, necessitating its explicit inclusion in AI design (Shneiderman, 2020). Finally, regarding the measurement of experience, robust methods are required that transcend mere usability. The development of standardized scales, such as the CASUX model for conversational agents, emphasizes the need for systematic and rigorous measurement of AI UX (Faruk et al., 2025).

The theoretical justification of this work lies in the necessity to synthesize fragmented existing knowledge. While the benefits of AI in terms of efficiency and loyalty are well-documented (Yun et al., 2024), the literature remains scattered. Existing studies, though valuable, do not provide a unified perspective on the multidimensional effects—positive, negative, and ethical—that AI is generating on UX across various domains.

The relevance of this research, from an academic standpoint, is to provide a systematic, evaluative, and updated synthesis (2020–2025) that consolidates disparate findings and offers a solid foundation for future research. Methodologically, the study highlights existing gaps in the evaluation of user experience within autonomous systems (Bingley et al., 2023; Faruk et al., 2025). Finally, for practitioners, the study identifies critical areas, particularly the need to adhere to ethical and trust principles (Jobin et al., 2019) to ensure that investments in AI translate into a sustainable competitive advantage.

Given the context of rapid AI evolution and the necessity for a comprehensive understanding of its effects on user experience, this study aims to identify and evaluate the impacts of AI usage on user experience through a systematic review of the literature published between 2020 and 2025.

Consequently, the guiding research question for this work is: What are the effects of AI usage on user experience from 2020 to 2025?

Methodology

This study adopts a qualitative approach, characterized as descriptive and exploratory research grounded in the principles of systematic literature review. This type of secondary research enables the identification, analysis, and synthesis of existing knowledge on a phenomenon of interest, thus providing a comprehensive view of the current state of evidence (Pardal-Refoyo & Pardal-Peláez, 2020). The methodological design corresponds to a systematic review, understood as a structured and reproducible process that gathers available evidence regarding a specific research question. Its aim is to offer a clear and transparent synthesis of the most relevant findings on the effects of AI usage on user experience.

As noted by Villasís-Keever et al. (2020), this type of review helps consolidate existing knowledge by identifying gaps and trends for future research. The exploratory and descriptive nature is justified as the study seeks to recognize patterns, approaches, and gaps in recent literature, without making statistical inferences. This approach is suitable when primary studies are heterogeneous, and analysis focuses on qualitative synthesis (Quintero & Vizcaíno, 2023).

Information sources

The bibliographic search was conducted across four high-impact academic databases: SCOPUS, ProQuest, EBSCO, and Web of Science (WoS), recognized for their quality in indexing scientific research. According to Quispe et al. (2021), the credibility of a systematic review depends on the comprehensiveness and clarity of the criteria employed during the search.

Combinations of keywords related to “Artificial Intelligence,” “User Experience,” “Machine Learning,” and “Digital Strategies” were utilized. The information search was conducted during the second quarter of 2025, ensuring the relevance and timeliness of the selected studies.

In total, 113 articles were identified in the consulted databases. After removing 13 duplicate records, 100 unique articles were retained for the initial review of titles and abstracts. During this screening stage, 48 articles were excluded for being unrelated to the theme of artificial intelligence and user experience or for lacking methodological rigor. Subsequently, 52 articles were evaluated in full text, of which 30 were discarded for not meeting inclusion criteria or for presenting incomplete information. Ultimately, the sample consisted of 22 scientific articles, forming the basis for the qualitative synthesis of this review.

Table 1

List of the 22 included studies

Code	Author – Year	Abbreviated Title	Methodology
E1	Al-Ansari et al. (2024)	User-Centered XAI	Mixed – MM Synthesis
E2	Bach et al. (2022)	User Trust in AI	Qualitative – PRISMA
E3	Bandi et al. (2023)	Generative AI – Review	Qualitative – Review
E4	Daly et al. (2025)	Trust and Adoption of AI	Mixed – Narratives
E5	Guerrero et al. (2024)	AI and Financial Decisions	Mixed – Financial + Interviews
E6	Kuric et al. (2025)	AI and Usability Detection	Qualitative/Mixed – Inductive
E7	López-Regalado et al. (2024)	AI in Higher Education	Mixed – RS + Bibliometric
E8	Lu et al. (2024)	AI for UX (HCAI)	Qualitative – RS
E9	Mokoena & Obagbuwa (2025)	AI in Digital Streaming	Qualitative – Review
E10	Padilla (2024)	AI in Banking Services	Quantitative – Bibliometric
E11	Rezwana & Maher (2022)	User Perception in AI	Mixed – Within-subject
E12	Romaní et al. (2025)	Affective Experience with AI	Qualitative – Narrative RS
E13	Stige et al. (2024)	AI and UX (Systematic Review)	Qualitative – RS
E14	Torres & Díaz (2020)	AI in Business Models	Qualitative – Exploratory

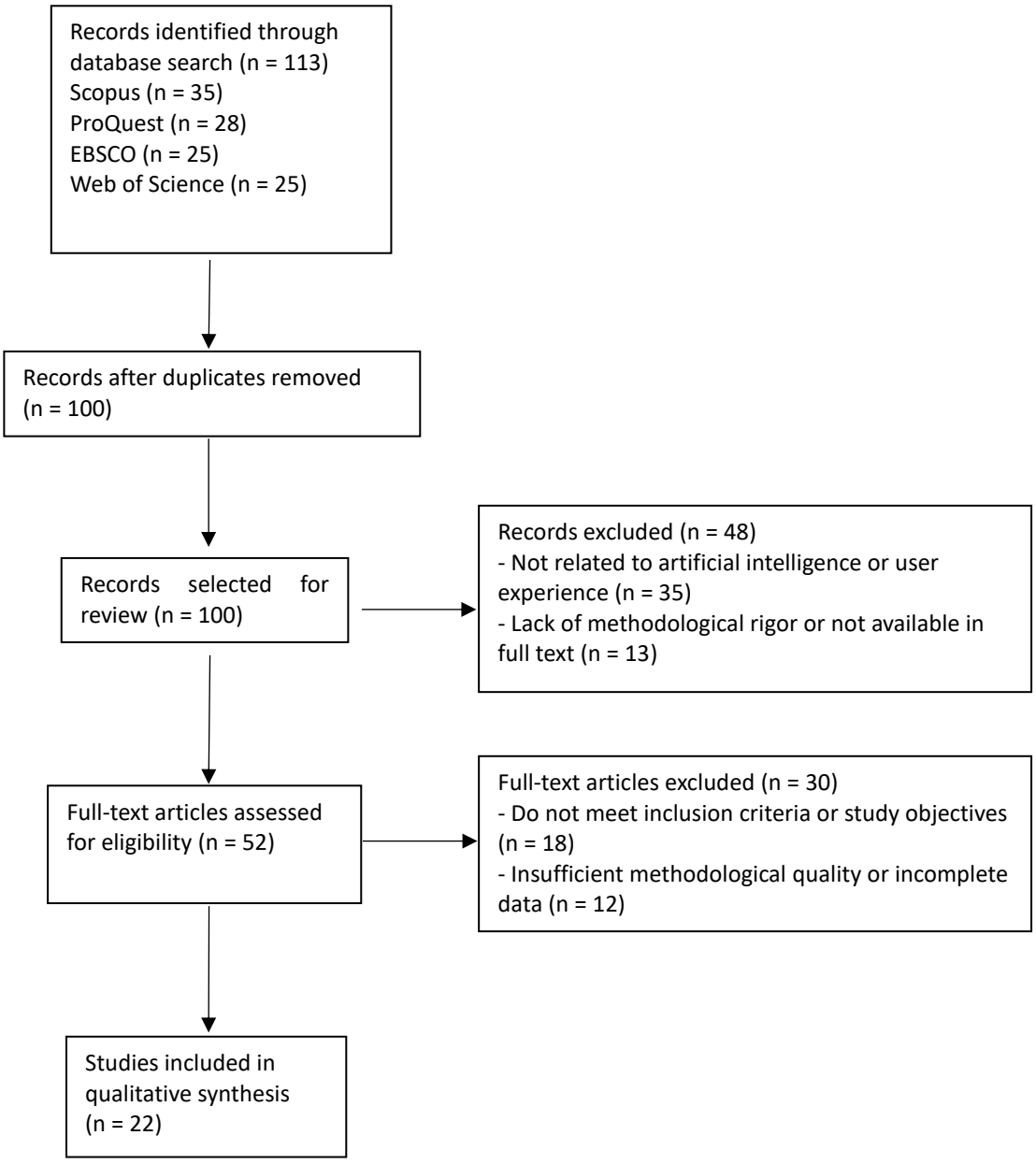
E15	Valencia-Londoño et al. (2025)	AI in Inclusive Education	Mixed – Testing + Thematic
E16	Van den Berg (2025)	AI in Distance Education	Qualitative – Thematic
E17	Vera & Pico (2024)	AI in Administrative Management	Quantitative – Descriptive
E18	Virvou (2023)	AI and UX in Reciprocity	Qualitative – State of the Art
E19	Wah (2025)	AI Chatbots in e-Health	Mixed – RS + Thematic Analysis
E20	Yang et al. (2020)	UX with AI Support	Quantitative – Experimental
E21	Zein (2024)	AI for E-Commerce Recommendations	Qualitative – Literature
E22	Zúñiga et al. (2023)	AI in Communications/Marketing	Qualitative – Review

Source: Authors' own elaboration.

Inclusion and exclusion criteria

The inclusion criteria were as follows: publications from the years 2020 to 2025, scientific articles, and systematic reviews related to the use of artificial intelligence and user experience, studies in English or Spanish conducted in Europe, America, or Asia, and available in open access or with full-text availability. The exclusion criteria considered included: duplicate articles, theses, technical reports, documents lacking peer review, or those with methodological deficiencies. The selection process was based on the PRISMA 2020 guidelines, which allowed for documenting the phases of identification, screening, eligibility, and final inclusion.

Figure 1
PRISMA flow diagram



Note. PRISMA flow diagram of the systematic review process.

Analysis and synthesis procedure

The selected articles were organized into an extraction matrix developed in Microsoft Excel, where data such as author, year, country, methodological approach, findings, and conclusions were recorded. This tool facilitated systematic comparison and categorization of the main emerging themes. The analysis adhered to the guidelines of the SUMARI-JBI model (Johanna Briggs Institute), aimed at ensuring rigor and consistency in qualitative interpretation.

According to Quispe et al. (2021), peer-extracted and analyzed data contribute to reducing biases and enhancing reliability. The qualitative synthesis was conducted descriptively, identifying patterns, similarities, and discrepancies among the studies. As noted by Quintero and Vizcaíno (2023), this methodology allows for the

integration of heterogeneous evidence and offers a comprehensive understanding of the phenomenon under investigation.

Ethical considerations and limitations

Since this is a systematic literature review, it adhered to principles of transparency, rigor, and reproducibility, as recommended by Pardal-Refoyo and Pardal-Peláez (2020). Among the study's limitations, it is acknowledged that the quality of the results directly depends on the methodological robustness of the included primary studies. Furthermore, the diversity of contexts and approaches may affect the generalization of the findings. Nonetheless, this review provides an integrative and up-to-date perspective on the impact of artificial intelligence on user experience.

Results and discussion

Findings from the systematic review indicate that artificial intelligence has substantially transformed user experience across various contexts, establishing itself as a cross-cutting axis in the business, educational, technological, and healthcare sectors. In the corporate realm, AI emerges as a driver of efficiency and personalization. Torres and Díaz-Torres (2020) indicate that applying AI in digital business models enhances customer relationships through recommendation and prediction systems. Complementarily, Vera and Pico (2024) emphasize its role in administrative automation and strategic decision-making, while Guerrero et al. (2024) show increases in operational agility and financial accuracy. These results align with the observations of Zein (2024), Mokoena and Obagbuwa (2025), and Virvou (2023), who highlight that AI-driven intelligent personalization increases satisfaction, strengthens user loyalty, and solidifies competitive advantage in digital environments.

From the perspective of design and human-computer interaction, Stige et al. (2024) and Rezwana and Maher (2022) demonstrate that AI enhances designers' creativity and improves efficiency in prototype generation, although total automation generates resistance due to perceptions of loss of control. In this vein, Lu et al. (2024) argue that AI should complement rather than replace human experience, prioritizing human–AI collaboration, while Al-Ansari et al. (2024) propose a framework of six pillars to strengthen trust and transparency in explainable systems.

In education, the evidence is converging. López-Regalado et al. (2024) document that AI personalizes learning and enhances student satisfaction through chatbots and educational robots, while Romaní et al. (2025) assert that generative AI fosters autonomy, critical thinking, and digital inclusion. Complementarily, Valencia-Londoño et al. (2025) highlight digital literacy initiatives for older adults through adaptive platforms, and Van den Berg (2025) emphasizes the positive impact on distance education, although he warns about the need to enhance teacher self-efficacy.

In the healthcare sector, Wah (2025) identifies that hybrid chatbots increase trust and adherence among patients, reinforcing the emotional dimension of healthcare UX. These findings connect with those presented by Daly et al. (2025), who underline that trust in AI is context-dependent, particularly in sensitive areas such as medicine and creative industries.

Regarding communication and marketing, Zúñiga et al. (2023) and Padilla (2024) show that AI drives highly personalized customer experiences, enhancing interaction in digital channels and banking services. Kuric et al. (2025) complement this trend by noting a shift towards automated detection of usability issues through deep learning, while Mokoena and Obagbuwa (2024) highlight AI's role in content personalization on digital music platforms, balancing effectiveness and ethics. Zein (2024) agrees that intelligent recommendations are crucial for loyalty in e-commerce.

However, the results also reveal ethical and technical challenges. Virvou (2023) and Bach et al. (2022) caution that the algorithmic “black box” limits transparency and user trust. Vera and Pico (2024) and Guerrero et al. (2024) emphasize the urgency of addressing privacy and data security concerns, while Stige et al. (2024) raise alarms about the loss of autonomy in automated design. Romaní et al. (2025) and Van den Berg (2025) refer to concerns regarding academic integrity in the face of mass use of generative AI, a risk that Daly et al. (2025) link to the lack of accountability mechanisms in organizational contexts.

Across the literature, there is consensus that the development of artificial intelligence should be oriented towards a human-centered approach based on principles of transparency, ethics, and explainability (Al-Ansari et al., 2024; Rezwana & Maher, 2022).

In this context, the reviewed studies reveal three complementary dimensions of impact: first, positive effects that highlight AI's capacity to enhance personalization, efficiency, and interaction quality; in contrast, negative effects demonstrate challenges related to algorithmic opacity, biases, and loss of human control; and

finally, an evolving dimension where a gradual transition from purely technical automation approaches to collaborative, explainable, and inclusive models is observed.

With regard to temporal trends, studies conducted between 2020 and 2025 (Bach et al., 2022; Bandi et al., 2023; Kuric et al., 2025; Stige et al., 2024; Torres & Díaz-Torres, 2020; Yang et al., 2020) show a progressive shift from viewing AI as a functional tool to recognizing it as a cognitive and creative ally. There is also a rise in generative AI, extensive language models, and mixed methodologies applied to user experience. Thus, this review provides an integrative perspective from 22 studies, highlighting AI as a dual agent: a facilitator of experiences and a catalyst for new ethical, methodological, and human challenges.

Conclusions

The analysis conducted indicates that artificial intelligence has established itself as a catalyst for innovation in user experience, altering not only the way individuals interact with digital systems but also how these experiences are designed and evaluated. The reviewed evidence demonstrates that AI significantly enhances personalization, efficiency, and predictive capabilities in services, while simultaneously presenting ethical and epistemological dilemmas that cannot be overlooked.

In the business sector, AI redefines management, optimizes decision-making processes, and strengthens customer relationships. In education, it expands opportunities for inclusion and adaptive learning, solidifying its role as a key resource for cognitive and emotional development. Within design and human-computer interaction, collaboration between humans and algorithms emerges as the most promising model, grounded in explainability and trust. Collectively, these advancements confirm that AI does not replace humans; rather, it amplifies their capabilities.

However, research also reveals ongoing tensions between functionality and ethics, as well as between technical efficiency and human well-being. Challenges related to transparency, data privacy, and academic integrity necessitate ethical governance and stronger control policies. Training in digital literacy and AI ethics emerges as a prerequisite for responsible implementation.

Looking ahead, it is imperative to continue interdisciplinary research that delves into how AI influences user perception, emotion, and decision-making, particularly in Latin American contexts where evidence remains limited. While AI offers opportunities for a more human-centered and sustainable user experience, gaps persist that must be addressed: the impact of cognitive automation on critical decision-making, the balance between explainability and technical performance, and the mitigation of algorithmic biases. Longitudinal studies are also required to assess effects on autonomy, trust, and digital well-being, thus opening a research agenda for future investigations.

References

Accenture. (2024). Going for growth: Navigating the great value migration in the age of AI. Accenture Research. https://www.accenture.com/content/dam/accenture/final/accenture-com/document-3/Accenture-Going-for-Growth.pdf

Al-Ansari, N., Al-Thani, D., & Al-Mansoori, R. S. (2024). User-centered evaluation of explainable artificial intelligence (XAI): A systematic literature review. *Human Behavior and Emerging Technologies*, 2024. https://doi.org/10.1155/2024/4628855

Bach, T. A., Khan, A., Hallock, H., Beltrão, G., & Sousa, S. (2022). A systematic literature review of user trust in AI-enabled systems: An HCI perspective. *International Journal of Human–Computer Interaction, 40*(5), 1251–1266. https://doi.org/10.1080/10447318.2022.2138826

Bandi, A., Adapa, P. V. S. R., & Kuchi, Y. E. V. P. K. (2023). The power of generative AI: A review of requirements, models, input–output formats, evaluation metrics, and challenges. *Future Internet, 15*(8), 1–60. https://ideas.repec.org/a/gam/jftint/v15y2023i8p260-d1207623.html

Bingley, W. J., Curtis, C., Lockey, S., Bialkowski, A., Gillespie, N., Haslam, S. A., Ko, R. K. L., Steffens, N., Wiles, J., & Worthy, P. (2023). Where is the human in human-centered AI? Insights from developer priorities and user experiences. *Computers in Human Behavior, 141*, 107617. https://doi.org/10.1016/j.chb.2022.107617

Bradford, N. (2024, November 27). *Transforming work: Gartner's AI predictions through 2029*. https://www.shrm.org/topics-tools/flagships/ai-hi/gartner-ai-predictions-through-2029

Daly, S. J., Hearn, G., & Papageorgiou, K. (2025). Sensemaking with AI: How trust influences human–AI collaboration in health and creative industries. *Social Sciences & Humanities Open, 11*, 101346. https://doi.org/10.1016/j.ssaho.2025.101346

Faruk, L. I. D., Pal, D., Funilkul, S., Perumal, T., & Mongkolnam, P. (2025). Introducing CASUX: A standardized

scale for measuring the user experience of artificial intelligence-based conversational agents. *International Journal of Human–Computer Interaction, 41*(9), 5274–5298. https://doi.org/10.1080/10447318.2024.2359206

Guerrero, W. A., Camacho-Galindo, S., Guerrero-Martin, L. E., Arévalo, J. C., de Freitas, P. P., Gómes, V. J. C., Fernandes, F. A. da S., & Guerrero-Martin, C. A. (2024). Impact of artificial intelligence on financial decision making: Opportunities and challenges for business leaders. *DYNA*, 91(233), 168–177. https://doi.org/10.15446/dyna.v91n233.114660

Jobin, A., Ienca, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence, 1*(9), 389–399. https://doi.org/10.1038/s42256-019-0088-2

Kuric, E., Research, Ux., Peter Demcak, S., & Lang, J. (2025). Systematic literature review of automation and artificial intelligence in usability issue detection. *ACM Computing Surveys, 1*. https://arxiv.org/pdf/2504.01415

López-Regalado, O., Núñez-Rojas, N., López-Gil, Ó., & Sánchez Rodríguez, J. (2024). Análisis del uso de la inteligencia artificial en la educación universitaria: Una revisión sistemática. *Pixel-Bit: Revista de Medios y Educación, 70*, 97–122. https://dialnet.unirioja.es/servlet/articulo?codigo=9558865

Lu, Y., Yang, Y., Zhao, Q., Zhang, C., & Li, J. (2024). AI assistance for UX: A literature review through human-centered AI [Preprint]. arXiv. https://doi.org/10.48550/arXiv.2402.06089

Mokoena, N., & Obagbuwa, I. C. (2025). An analysis of artificial intelligence automation in digital music streaming platforms for improving consumer subscription responses: A review. *Frontiers in Artificial Intelligence, 7*, 1515716. https://doi.org/10.3389/frai.2024.1515716

Padilla, S. G. (2024). Inteligencia artificial en los servicios bancarios: Una revisión bibliométrica. *Región Científica, 3*(2), 2024335. https://doi.org/10.58763/rc2024335

Pardal-Refoyo, J. L., & Pardal-Peláez, B. (2020). Anotaciones para estructurar una revisión sistemática. *Revista ORL, 11*(2), 155–160. https://doi.org/10.14201/orl.22882

Quintero, J., & Vizcaíno, G. (2023). Importancia de las revisiones sistemáticas y metanálisis en la era de la información digital. *Investigación Clínica, 64*(3), 263–266. https://doi.org/10.54817/ic.v64n3a00

Quispe, A. M., Hinojosa-Ticona, Y., Miranda, H. A., & Sedano, C. A. (2021). Serie de redacción científica: Revisiones sistemáticas. *Revista del Cuerpo Médico Hospital Nacional Almanzor Aguinaga Asenjo, 14*(1), 94–99. https://doi.org/10.35434/rcmhn aaa.2021.141.906

Rezwana, J., & Maher, M. L. (2022). Understanding user perceptions, collaborative experience and user engagement in different human–AI interaction designs for co-creative systems. *ACM International Conference Proceeding Series*, 38–48. https://doi.org/10.1145/3527927.3532789

Romaní, G., Macedo Inca, K. S., Soto, G. E., Franco, A. M., & Ore, M. K. (2025). Revisión sistemática de inteligencia artificial generativa (GenIA) para el diseño de experiencias de aprendizaje, 2020–2025. *Revista Espacios, 46*(3), 13–27. https://doi.org/10.48082/espacios-a25v46n03p02

Shneiderman, B. (2020). Human-centered artificial intelligence: Reliable, safe & trustworthy. *International Journal of Human–Computer Interaction, 36*(6), 495–504. https://doi.org/10.1080/10447318.2020.1741118

Stige, Å., Zamani, E. D., Mikalef, P., & Zhu, Y. (2024). Artificial intelligence (AI) and user experience (UX) design: A systematic literature review and future research agenda. *Information Technology & People, 37*(6), 2324–2352. https://doi.org/10.1108/itp-07-2022-0519

Torres, A., & Díaz-Torres, L. (2020). Aplicaciones de la inteligencia artificial en los modelos de negocios digitales. *Recherches en Sciences de Gestion, 141*(6), 67–88. https://doi.org/10.3917/resg.141.0067

Valencia-Londoño, P. A., Cardona-Rodas, H., & Jiménez-Builes, J. A. (2025). Artificial intelligence in education: Advancing educational digital inclusion for adults older with diverse neuromuscular conditions. *Frontiers in Education, 10*, 1464030. https://doi.org/10.3389/feduc.2025.1464030

Van den Berg, G. (2025). Teachers' experiences of using artificial intelligence from an open distance learning context: Successes, challenges, and strategies for success. *Discover Education, 4*(1), 1–11. https://doi.org/10.1007/s44217-025-00596-2

Vera, S., & Pico, S. (2024). Inteligencia artificial en el desarrollo administrativo de la empresa moderna. *Revista Científica Arbitrada Multidisciplinaria PENTACIENCIAS, 6*(2), 264–282. https://doi.org/10.59169/pentaciencias.v6i2.1046

Villasís-Keever, M. Á., Rendón-Macías, M. E., García, H., Miranda-Novales, M. G., & Escamilla-Núñez, A. (2020). La revisión sistemática y el metaanálisis como herramientas de apoyo para la clínica y la investigación. *Revista Alergia México, 67*(1), 62–72. https://doi.org/10.29262/ram.v67i1.733

Virvou, M. (2023). Artificial intelligence and user experience in reciprocity: Contributions and state of the art. *Intelligent Decision Technologies, 17*(1), 73–125. https://doi.org/10.3233/idt-230092

Wah, J. N. K. (2025). Revolutionizing e-health: The transformative role of AI-powered hybrid chatbots in healthcare solutions. *Frontiers in Public Health, 13*, 1530799. https://doi.org/10.3389/fpubh.2025.1530799

Yang, B., Wei, L., & Pu, Z. (2020). Measuring and improving user experience through artificial intelligence-aided design. *Frontiers in Psychology, 11*, 595374. https://doi.org/10.3389/fpsyg.2020.595374

Yun, X., Chun, M. H. (2024). The impact of personalized recommendation on purchase intention under the background of big data. *Big Data and Information Analytics,* *8*(0), 80–108. https://doi.org/10.3934/bdia.2024005

Zein, A. (2024). Design of an artificial intelligence-based recommendation system to improve user experience on e-commerce platforms. *Journal of Science Technology (JoSTec),* *6*(2), 53–57. https://doi.org/10.55299/jostec.v6i2.979

Zúñiga, F. G., Mora Poveda, D. A., & Molina Mora, D. P. (2023). La importancia de la inteligencia artificial en las comunicaciones en los procesos marketing. *Vivat Academia,* *156*, 102. https://dialnet.unirioja.es/servlet/articulo?codigo=9146084