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ARTIFICIAL INTELLIGENCE AND DIGITAL TRANSFORMATION FROM UNIVERSITY FACULTIES: CHALLENGES, APPROACH, AND GOALS

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Abstract. Artificial intelligence (AI) and digital transformation are undoubtedly two significant topics that impact individuals' professional and occupational spheres and, consequently, the academic field as well. From their academic formation, it is essential for professionals to explore, manage, and master, to the highest possible level, the technological tools that facilitate the performance of their roles.

Artificial intelligence, in addition to being one of the most advanced technological developments, is the prevailing technological trend being integrated into organizational, academic, and even personal activities.

Digital transformation, on the other hand, is a continuous process that organizations face

regardless of the sector in which they operate, and it is both enhanced and shaped by technological advancements.

University faculties face considerable challenges in this context: to train well-rounded professionals in their specific technical fields and, simultaneously, to provide digital and technological literacy that enables them to enter the job market and to significantly contribute to the transformation of their respective areas through the implementation of technologies and systems.

Keyword. Digital transformation, artificial intelligence, technological literacy.

INTELIGENCIA ARTIFICIAL Y TRANSFORMACIÓN DIGITAL DESDE LAS FACULTADES UNIVERSITARIAS: RETOS, ENFOQUE Y OBJETIVOS

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Resumen. La inteligencia artificial (IA) y la transformación digital son, sin duda, dos temas importantes que impactan en el ámbito profesional y ocupacional de las personas y, en consecuencia, también en el ámbito académico. Desde su formación académica, es fundamental que los profesionales exploren, gestionen y dominen al máximo las herramientas tecnológicas que facilitan el desempeño de sus funciones.

La inteligencia artificial, además de ser uno de los desarrollos tecnológicos más avanzados, es la tendencia tecnológica predominante que se integra en las actividades organizacionales, académicas e incluso personales.

La transformación digital, por otro lado, es un proceso continuo al que se enfrentan las organizaciones, independientemente del sector en el que operen, y se ve potenciada y moldeada por los avances tecnológicos.

Las facultades universitarias se enfrentan a retos considerables en este contexto: formar profesionales integrales en sus campos técnicos específicos y, simultáneamente, proporcionarles alfabetización digital y tecnológica que les permita incorporarse al mercado laboral y contribuir significativamente a la transformación de sus respectivas áreas mediante la implementación de tecnologías y sistemas.

Palabras Clave. transformación digital, inteligencia artificial, alfabetización tecnológica.

TOPIC

Educating future professionals, beyond being a set of learning objectives embedded in academic curricula, constitutes a fundamental commitment of university faculties.

The urgency of this literacy has become as critical as acquiring a second language; just as English remains a cornerstone of university curricula, adequate space must be guaranteed for courses on emerging technologies, artificial intelligence, cybersecurity, and digital transformation (Gómez Torres, 2016; Urdaneta Montiel et al., 2018). Gómez Torres (2016) already emphasized the crucial role of digital literacy in employability—an idea that has since deepened and expanded in the context of AI.

During the course of university studies, students are given the opportunity to implement trending technologies in conjunction with the technical learning specific to their academic discipline, thereby fostering both theoretical training and practical experience. This integration is essential so that students do not only acquire theoretical knowledge, but also develop practical competencies in environments that simulate real-world challenges (Carreras et al., n.d.).

Faculties have already incorporated technologies into their curricula, along with the necessary spaces, planning,

and assessment strategies. However, the challenges lie in staying current with the rapid pace of technological change and managing the financial burden of up-to-date software licensing, not to mention ensuring equitable access for students. This is a global challenge and affects the capacity of institutions to offer relevant and timely training (Alarcón López et al., 2023). Managing these technological resources and maintaining ongoing curricular adaptation are thus critical responsibilities (Urdaneta Montiel et al., 2018).

Given this context, faculties may need to conduct diagnostics in technology management to optimally determine the necessary resources and content. Identifying digital gaps and implementing strategic planning for technological adoption—as suggested in studies from the Andean context (Alarcón López et al., 2023)—can provide transferable models for higher education. Universities are entrusted with preparing professionals who meet or exceed graduate profile expectations, and technology is an essential component of that mission.

1. INTRODUCTION

Discussing technology entails an entire universe of knowledge. This article aims to address artificial intelligence and digital transformation, with the former being a technological breakthrough and the latter a continuous improvement process for

any organization. Digital transformation, understood as the “reconversion and adaptation of digital technologies” (Medina Chicaiza et al., 2022, p. 756), is an imperative for survival and competitiveness in today’s landscape. However, artificial intelligence cannot be effectively managed without a digital transformation context that adequately prepares an organization culturally and procedurally.

Modern organizations define continuous improvement processes in every area of operation, and technology is embedded in all of them. For this reason, digital transformation must be seen as a transversal improvement process—and AI as a tool that can enhance it. As Briano (2024) notes, business digital transformation relies on conceptual pillars such as technology, cultural change, and customer experience enhancement, where AI can serve as a catalyst.

This highlights the urgent need for today’s professionals to have a more comprehensive and deeper understanding of technology management—specifically, artificial intelligence in the scope of this paper.

To meet this objective, university faculties must ensure that the content, courses, and learning strategies related to technological topics are kept up to date, forming professionals capable not only of using these tools, but of leading their strategic implementation (Muñoz Garro, 2024).

2. CONTEXT

Technological skills and competencies are vital for the development of human capital today. Universities must ensure their students acquire and develop competencies in digital transformation and AI management, along with proficiency in other critical technologies. Digital literacy (Gómez Torres, 2016) is no longer optional—it is now a basic competency that, together with knowledge management, fuels educational transformation (Urdaneta Montiel et al., 2018, p. 201).

Organizations increasingly demand technically skilled human capital capable of generating knowledge and innovating through the use of effective technologies. Global leadership in the digital age requires enhanced skills and capacities that only technology—particularly AI—can provide (Muñoz Garro, 2024). Companies operating in a digital environment (Carreras et al., n.d.) actively seek out professionals with these profiles.

Within this context, educating future professionals in digital technologies is essential for developing the competencies needed to compete effectively in today’s labor market. This goes beyond teaching digital tools—it requires fostering a deep understanding of how digital transformation in organizations (Medina Chicaiza et al., 2022) is redefining business models and value chains.

3. DEVELOPMENT

Defining topics for technological literacy is a relatively straightforward task; however, determining the pedagogical approach and effective methodologies for academic implementation remains a central challenge for faculties. Urdaneta Montiel et al. (2018) propose knowledge management through digital literacy as a key strategy, which entails not only defining content, but also integrating hardware, software, and telecommunications into a dynamic and active school curriculum, supplemented by community outreach.

Monitoring ongoing changes, innovations, and evolutions in the market to define the curricular path is another critical task for faculties. Business management in a digital environment (Carreras et al., n.d.) requires continuous adaptation, where universities must rapidly incorporate new trends in hypermedia, crossmedia, transmedia, and hybrid formats (Carreras et al., n.d., p. 25), all of which are increasingly in demand in the workforce.

Properly managing artificial intelligence offers multiple benefits, including accelerating digital transformation by increasing the precision of technological processes. AI can optimize everything from strategic decision-making to the personalization of student learning (Muñoz Garro, 2024). Briano (2024) identifies numerous applications for AI, ranging from chatbots to expert systems,

which can be adapted to university settings to enhance administrative and pedagogical efficiency. Moreover, the optimization of digital tools that support and secure organizational operations is another tangible benefit.

A robust digital transformation process enhanced by artificial intelligence provides the following advantages:

- a) Personalized learning: AI can tailor content and learning pace to each student's needs (Briano, 2024).
- b) Administrative efficiency: Automation of processes such as registration, grading, and resource management (Medina Chicaiza et al., 2022).
- c) Better institutional decision-making: Use of big data analytics to optimize academic offerings and resource allocation (Muñoz Garro, 2024).
- d) New pedagogical tools: Development of simulators, virtual tutors, and adaptive learning platforms (Carreras et al., n.d.).
- e) Enhanced research: AI can process large datasets, identify patterns, and accelerate scientific discovery (Urdaneta Montiel et al., 2018).

However, challenges and drawbacks must also be considered:

- a) Digital and skills gap: Not all students

and faculty have the same access or technological proficiency (Gómez Torres, 2016; Alarcón López et al., 2023).

- b) High implementation and maintenance costs: Investment in software, hardware, and ongoing training (Alarcón López et al., 2023).
- c) Ethical and privacy concerns: Handling of student data, algorithmic biases, and the need for responsible AI development (Muñoz Garro, 2024).
- d) Resistance to change: Faculty and administrative staff may resist adopting new technologies or methods (Briano, 2024).
- e) Rapid technological obsolescence: Continuous need to update knowledge, skills, and tools (Carreras et al., n.d.).

4. CONCLUSIONS

Artificial intelligence and digital transformation are not fleeting trends—they are unavoidable realities that are reshaping professional, occupational, and academic landscapes. University faculties are in a pivotal position, carrying the responsibility of preparing future generations to thrive in this dynamic environment.

Technological literacy, with an emphasis on AI and the principles of digital transformation, must become a central

pillar in university education, transcending disciplinary boundaries. This requires ongoing curriculum review, the adoption of innovative pedagogical methodologies that integrate technology meaningfully, and institutional investment in infrastructure and faculty development.

The benefits of proactive AI management in the context of university digital transformation are manifold—from personalized learning and process optimization to the advancement of research. However, it is imperative to address the challenges associated with AI use, such as the digital divide, financial costs, ethical implications, and resistance to change.

Ultimately, the success of higher education institutions will depend on their ability to foster a culture of lifelong learning, adaptability, and strategic vision—ensuring that graduates are not only technically proficient, but also leaders and change agents in the digital era.

5. REFERENCES

- Alarcón López, L., Henríquez, P., Moreno, K., Saboin, J., Vargas, F., & Araya, F. (2023). Productive transformation and business digitalization in the Andean region. Monograph: New Horizons of Productive Transformation in the Andean Region.
- Briano, C. (2024). The digital transformation of businesses: Conceptual notes. Buenos Aires: Briano.
- Carreras, R., Grau, F., & Velilla, J. (2011). Business management in a digital environment. Catalonia:

Open University of Catalonia.

Gómez Torres, M. (2016). The role of digital literacy in the employability of older workers. *Píxel-Bit. Journal of Media and Education*, 49, 25–38.

Medina Chicaiza, P., Chango Guanoluisa, M., Corella Cobos, M., & Guizado Toscano, D. (2022). Digital transformation in companies: A conceptual review. *Journal of Science and Research*, 7(2), 756–769.

Muñoz Garro, E. (2024). The influence of technology on global leadership: Enhancing skills and capacities in a digitized business environment. *e-Ciencias de la Información*, 14(1).

Urdaneta Montiel, A., Pitre Redondo, R., & Hernández Palma, H. (2018). Knowledge management through digital literacy as a strategy for educational transformation in a context of peace. *Saber, Ciencia y Libertad*, 13(2), 201–215.