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* Corresponding author's address:
Departamento de Pedagogía. Facultad de Formación del Profesorado y Educación. Universidad Autónoma de Madrid (UAM). C/ Francisco Tomás y Valiente, 3, Fuencarral-El Pardo, 28049 - Madrid (Spain)

E-mail / ORCID:

joaquin.paredes@uam.es

https://orcid.org/0000-0003-2294-9121

REVIEW / RESEÑA / RESENHA

Area-Moreira, M., Valverde-Berrocoso, J., y Rubia-Avi, B. (2025). *Transformación digital de la enseñanza universitaria. Analíticas académicas y escenarios de futuro*. Octaedro

Joaquín Paredes-Labra *

The integration of digital technologies into university teaching has been unfolding in Spain since the late 1980s, gradually and in a multidimensional manner, as a result of various demands that have fostered processes aimed at this end—from the broader drive to modernize universities, and their teaching in particular, to attempts to establish more effective and less costly organizational models (the latter, it should be noted, a vain illusion). These initiatives have received cyclical support through European and Spanish policy agendas. Today, technologies remain a central element of universities' strategies, according to the Conference of Rectors of Spanish Universities (CRUE).

The pandemic underscored the importance of the technologies available. The current landscape of resources for university teaching is more encouraging than what was accessible at that time. Moreover, alongside these resources, there is institutional leadership oriented toward such transformations, specialized innovation units, guidelines promoting technology-engaged teaching, and faculty prepared to work within this framework.

The normalized presence of online learning platforms generates an enormous volume of data. Within this scenario, a unique opportunity emerges for a hopeful shift in university teaching, driven by advances in computing and techniques for analyzing these data. Learning analytics and artificial intelligence can enable personalized courses, reach new audiences, and support students experiencing learning difficulties.

Against this backdrop, the present volume brings together the results of a research project funded by MCIN and the European Union, conducted by research groups at the Universities of La Laguna, Extremadura, and Valladolid during the 2022–2025 period. The authors—educationalists and engineers—argue that the digital transformation of higher education is not merely a technical matter of provision, adoption, and use of digital technologies in teaching; rather, it is, above all, a systemic phenomenon. Accordingly, the study's main aims are to explore patterns of use of the virtual campuses of these public universities; to examine the perceptions held by faculty, students, and leadership teams regarding the use of virtual classrooms; and, finally, to propose university policy measures for the medium-term development of digital transformation processes, oriented toward migrating teaching toward hybrid and online formats.

The book is organized into two sections. The first, a theoretical block comprising four chapters, examines processes of digital transformation in university teaching, the significance of learning and academic analytics, and the articulation of possible futures in this field. The second section, presenting research findings across seven chapters, offers an analysis of the "big data" generated by virtual campuses and classrooms and its relationship to students' academic performance, as well as an examination of opinions about digital teaching and expectations for the future. Among the principal findings, it is worth noting that the current landscape of platform-based innovation is fairly modest; that platforms are used largely as repositories; that students make moderate use of these spaces; that traditional teaching models persist in university classrooms; that faculty require stronger digital competence; and that concerns persist regarding plagiarism

facilitated by digital environments. Nonetheless, a small number of subjects—spanning all fields of knowledge—generate reflective activity and participation among students by leveraging the potential of the platforms. To extend this type of innovative practice, the authors emphasize the need for universities to provide more robust institutional support and to deepen the assistance offered for pedagogical design within these digital environments.

At the same time, the book outlines a pathway for transforming university teaching in which the analysis of educational big data—within the framework of pedagogically informed and inclusive university management—will make it possible to extract valuable information about learning processes through agile and visual indicators. The growth potential for contemporary university education is considerable. Instructors will be alerted when a student shows signs of learning difficulties. Platforms will adjust the level of difficulty of exercises according to learners' progress. Students will receive continuous feedback on strengths and areas for improvement. Analytics will also facilitate the identification of potential dropout cases, with implications for instructional group planning. Likewise, with more agile training structures and these personalized professional guidance systems, universities will be able to serve new audiences, including groups seeking continuing education.

Looking ahead, genuine spaces for transformation open up with respect to teaching, through individualized learning pathways, collaborative learning, and fully self-regulated training.

In sum, this book offers an opportunity to reflect on and critically analyze the digital present of our universities, with a view to building a future for higher education that is more inclusive, socially responsive, pedagogically grounded, and technologically appropriate.