Navigating Digital University: Challenges and Opportunities for Transforming Higher Education Institutions

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Abstract

The aim of the research is to recognise the views and experience of academics on the digital transformation of the Spanish cooperative university. This paper uses a qualitative methodology to understand how academical teachers perceive the digital transformation process from the perspective of challenges and opportunities. Data were analysed from interviews with conducted with twelve representatives of academic community. The analysis revealed three main pillars: quality of digital education, resources and strategy. Both the opportunities and challenges faced by university in the coming years are significant and will require further changes. Universities should have appropriate strategies, resources, and skills to effectively leverage new trends and emerge as leading figures in the digital era. Otherwise, they risk falling behind. This article may be of interest to scientists and decision-makers who need to be aware of how the processes of digital transformation are perceived by the representatives of the academic community. This understanding is crucial for both of these groups in order to study and manage HEIs more efficiently.

Keywords Higher Education Institutions; digital transformations; challenges, opportunities, digital leadership.

1. Introduction

Changing social and economic conditions, coupled with the development of new technologies, are gaining momentum for the change in every aspect of the functioning of higher education institutions (HEIs). HEIs, at the threshold of the greatest period of transformation, are actively moving into a new paradigm and evolving into digital universities (Fernandes et al., 2023). Although the challenges and opportunities associated with HEIs' digital transformation are increasingly discussed and researched, HEIs still lack a full understanding of how the academic

community perceives them. In this sense, it is important to conduct a detailed analysis and develop guidance and recommendations for university authorities. Providing such support will contribute to the optimization of process management and facilitating smoother university transformation (Faria & Nova, 2015). The aim of this study was to investigate, through a qualitative survey, the opportunities and challenges presented by the digital transformation of the university. The study was conducted on a group of 12 academic teachers. The study posed the following research questions: What challenges and opportunities do teachers notice in relation to digital transformation? Do university include digital strategy in policy documents, and is this strategy known and understood by teachers?

2. Literature review

2.1. The digital transformation of HEIs and its opportunities and challenges

The research interest in the topic of HEIs' digital transformation (DT) and the challenges and opportunities it presents has definitely increased over the last five years. In order to cross-reference the existing state of knowledge, a literature scoping review was conducted: scoping review (Logan, 2021) of scientific journals available in the international Scopus database between 2018 and 2024. The literature items mapped numerically are a total of 199 papers found in the database for the phrases 'digital transformation' 'HEIs' and 'opportunities and challenges'. An analysis of their structure by subject area affiliation indicates the dominance of the research in the area of social science. From this area, 17 articles were selected for the analysis of the literature sources that included the keywords "digital transformation" "HEIs" and "opportunities and challenges.

In terms of the opportunities offered by the DT of HEIs, the emphasis is placed on the possibilities of improving learning and teaching processes. The improvements in the learning and teaching process are recognised, mainly due to access to digital tools and platforms (Criollo et al., 2023) and improvements in the sustainability of learning (Sa & Serpa, 2020). DT contributes not only to better learning and teaching process but also collaboration between students, students and teachers, improving the quality of education (Remesal et al., 2023).

By providing access to new technologies (Criollo, 2023), digital content and remote learning, sustainable, accessible (Chen & Hardy, 2023) and inclusive education is promoted (Shoel et al., 2022). It is widely acknowledged that the increase of both greater accessibility and diversity of courses for learners leads to greater satisfaction of individual learning needs. Consequently, educational innovations provide the fulfillment of educational requirements and diminish obstacles to the acquisition of knowledge (Chen & Hardy, 2023). As a result, the DT makes education more efficient (Mete et al.,2022) and effective (Kuleto et al., 2021).

Portuguez-Castro et al. (2022) highlight the opportunities that DT brings for the development of the students' and academic staff's competencies. The DT has provided the possibility for universities to conduct projects based on digital technologies and pedagogies in collaboration with different stakeholders which contributes to building and strengthening a culture of innovation (Portuguez-Castro et al., 2020). Beyond the area of learning and teaching, DT is improving management processes in HEIs. Process automation contributes to saving time, raising productivity and reducing operational costs (Criollo et al., 2023).

In addition to a range of opportunities, DT poses specific challenges for universities and their community. To a large extent, they are related to technological constraints, especially the access to new educational technologies, tools, programmes or management systems. Digital transformation implies the need to invest and thus incur financial costs (Criollo et al., 2023). Challenges associated with the need to provide training, improve competencies, and offer financial support for the development of employees are identified (Shoel et al., 2022; Farias-Gaytan et al., 2023). HEIs must provide resources and time for the planned development of new competencies (Starkey et al., 2023). DT requires HEIs, apart from developing technology and providing programmes and methods for online learning, to develop pedagogies and methodologies for learning (Marstio, 2019; Criollo et al., 2023). This is particularly important with regard to "monitoring, planning online learning, supporting student engagement and motivation, facilitating evaluation, assessment processes; increasing interaction, improving retention" (Celik et al., 2023, p.1)

The strategic challenges posed by DT are highlighted by Gaete-Quezada (2023). With the increasing use of digital technologies, the management of large amounts of data, the digitization of administrative procedures, the social responsibility of HEIs is growing. The cultural as well as the operational embedding of dt is becoming a particular challenge for HEIs.

Although there is already a wealth of quantitative and qualitative research on challenges and opportunities, this research rarely uses a case study methodology. The proposed article attempts to fill this research gap.

3. Methodology

The qualitative research was conducted based on semi-structured interviews and desk research analysis. The desk research analysis included strategic documents of university - development strategy available on the universities' websites. The qualitative interviews were conducted in the winter of 2023. Among 12 the respondents were six experienced specialist subject teachers and five experts in digital learning, responsible for a profound understanding of online education, digital pedagogy, contributing to the development of online learning through staff training, and managing various digital learning initiatives. The research was conducted in accordance with ethical standards, following approval from the research ethics committee. Respondents were

invited to attend one-on-one interviews, and each interview lasted on average 1 hour. All interviews were conducted at the university.

The analysis of strategic document and responses obtained during the semi-structured interviews was conducted using the principles of reflexive thematic analysis (Braun & Clarke, 2006; Naeem & Ozuem, 2022). All detailed steps of the analysis were undertaken following this methodological approach. After obtaining interview transcriptions and reviewing all collected data, a six-step analysis was initiated. The key words and quotes were selected, and the research material was manually coded using the Maxqda program. The main themes and subthemes were identified and verified, ensuring their alignment with the research question. The interpretation was then conducted, and a conceptual model was developed. The results were presented using quotes derived from the data.

4. Results

Due to restrictions given to the article, the presentation of the results has been limited on the most key issues. These themes will be discussed in greater detail below, presented in order of increasing frequency of emergence. The analyses were based on the qualitative data: semi structured interviews and strategy document (the university strategic plan). The analysis of strategic documents reveals that the university's cooperative has been operational for over 20 years. The teaching model establishes a network of relationships centered on the educational system. As emphasized in documents the teaching model of university establishes a network of relationships centered on the educational system. It aims to engage companies and institutions to ensure social accessibility, integrate work and study, enhance research, and provide continuing education. The university model is dedicated to social transformation, as reflected in the participatory model. During the thematic analysis of the research data, tree main themes emerged, which form a hierarchical structure of thematic nodes: quality of digital education, resources and strategy.

4.1. Quality of digital education

In the view of the research participants, within the context of digital transformation, the *Quality of digital education* node emerges as a pivotal area, considering the challenges associated with the DT of HEIs. The *Quality of digital education* node comprised elements such as methodology and pedagogy of teaching and learning, tools, methods, evaluation, and assessment. Undoubtedly, according to the majority of respondents, the greatest challenge is related to the need to develop and adopt a common methodology and pedagogy of digital learning to strengthen the process of teaching and learning. These processes must also consider the issues related to students' motivation and engagement, collaboration within groups, and with teachers. It continues to represent the most significant challenges for HEIs. One of the teacher

highlighted: "*We are in the process of digital transformation of the university. The key is the techno-pedagogical view. This is somehow to integrate digitalization and digital tools in an appropriate way. The way that we teach and somehow that digitalization has to help in all that and the objective has to be the students' development. And for that a teacher needs to know how different digital tools can help and enrich those pedagogical.*". Another teacher said "*It's not enough to know how different tools work and for that we need to know how those tools work but in a pedagogical environment. Which kind of tools like platforms, social media, other tools have an impact on students' presence in the community and have impact on learning process.*"

The *Quality of digital education* - oriented pillar emerged in the context of the opportunities created by DT in terms of developing students' competencies and access to studies, making it more inclusive. One of the interviewd teacher told "*I think that digital education can meet the different learning styles of our students. It means that education can be more inclusive.*"Another academical teacher added "*We introduced different active or collaborative experiences and for that we used different tools and we saw that those tools, using them in an appropriate way, have a really good impact on students' study and development.*"

4.2. Resources

The Resources pillar primarily encompasses challenges associated with digital competencies among both staff and students. In this context, the shortage of competencies, especially digital ones, becomes a challenge, along with the development of staff in this area. Training requires both time and financial resources. Moreover, the Resources pillar is perceived as an opportunity to improve institutional decision-making through the utilization of digital technologies within the university. As one teacher explained, "*(...) most of teachers have very traditional experience in teaching. I mean, they didn't study and learn online, so it's something relatively new and there is no references for that. It means that we as teachers should have strong digital competences too. Some still use outdated pedagogical approaches and teaching practices. Although we have quite an ambitious training plan for teachers, the time and motivation is not always there.*" Another teacher noted that "*Challenge is through the preparation of teachers. It's necessary to prepare the teachers that we have here, and I think that that's a gap now that we have to face. Some competences are required for the teachers, but there is a gap.*"

4.3. Strategy

The strategy-related pillar refers to goals, mission and values. Although digital transformation (DT) is reflected in university strategic documents, it is an area of challenge for teachers. The strategy explicitly calls for promoting DT, developing the digital educational offer and improving university services and processes. At the same time, the interviews reveal that areas are not sufficiently visible in the life of the university and its community. According to one of the teacher "*Strategic imperatives are insufficiently integrated into the fabric of university life.*

Although transformation is a fact, the challenge is how to transfer the provisions from documents to our activities and values."

5. Conclusions

HEIs are undergoing an advanced digital transformation that permeates every aspect and organizational process (Wang, 2023). HEIs must confront challenges to better harness the full potential of the transformation. This research has indicated that the key challenges and opportunities encompass the pillars of *quality of digital education*, *resources,* and *HEIs' strategies*. The integration of digital technologies into teaching methods, study programs, and instructional materials should primarily be associated with the development of methodologies and the pedagogy of the learning process (Marstio, 2019; Sa and Serpa, 2022; Al-Mamary, 2022). In this way, the process will fully rely on the collaboration, co-creation, and engagement of both students and the teaching staff. This active community of practitioners will effectively contribute to the improvement of the education quality (Sa and Serpa, 2020). For this, the continuous monitoring and assessment of the quality of online education based on systematic data collection are essential (OECD, 2023). One of the key challenges of DT at universities is ensuring access to digital resources. Ensuring equal opportunities in this area contributes to the creation of a more inclusive and diverse academic environment. HEIs must take action to ensure that the academic community has equal access to both digital tools and opportunities to develop and improve competences. The access to hardware, network infrastructure, software, educational platforms, training and other forms of competence improvement should include, inter alia: individual needs or career paths. According to the research, the third pillar of the HEIs transformation is the HEIs strategy pillar. In order to effectively implement and support DT at universities, it is necessary to understand it holistically. University leaders should pay attention to the organizational culture of the university, which is of particular importance in the strategy as a practice (Berisha et al, 2018). The effectiveness of the changes introduced depends on the involvement of all stakeholders and parties related to the university environment (Jarzabkowski et al., 2007; Golsorkhi et al., 2010). Hence, digital leadership particularly requires university leaders to support teams in making changes, adapting to them and overcoming reluctance.

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