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Strategic organisational responses to generative AI-driven digital transformation in leading higher education institutions

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Abstract

Purpose – This study aims to explore generative artificial intelligence (AI) as a significant milestone and key driver of digital transformation in higher education, emphasising the urgent need for universities and policymakers to adapt strategies to remain effective, competitive and aligned with the rapidly evolving demands of education and research.

Design/methodology/approach – This study used qualitative content analysis to examine publicly available strategic documents and statements related to digital transformation from the top 30 ranked universities in the Times Higher Education 2024 Ranking, producing a data set of 98 strategies covering all key organisational domains.

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Findings – The collected documents span eight areas, from teaching-learning strategies to information technology (IT) strategies and committees, with substantial variation among universities in scope, content and strategic combinations. A significant result is that teaching-learning offices and development centres serve as bridges between institutional strategies and grassroots innovation, absorbing top-down and bottom-up knowledge and fostering adaptive responses to generative AI-driven transformation.

Practical implications – By showcasing the best practices, this paper provides practical guidance for proactive institutional development, supporting university leadership in strategy-building and aiding national and international policymakers in shaping forward-looking frameworks.

Originality/value – Understanding and defining generative AI as a milestone in digital transformation is crucial for universities. Proactive adaptation to emerging trends and best practices enables institutions to navigate these challenges effectively.

Keywords Generative AI, Higher education, Organisational strategy, Digital transformation, Top universities, Future of higher education

Paper type Research paper

1. Introduction

The emergence of artificial intelligence (AI), particularly generative AI (GenAI), has posed unique challenges for higher education (HE). In this context, the launch of ChatGPT in November 2022 marked a paradigm shift for the traditional HE system (Hidayat-ur-Rehman and Ibrahim, 2023). Although AI applications and programmes were present and even used at universities before ChatGPT (Kumar *et al.*, 2024), this programme garnered widespread attention due to its significant risks and opportunities for academia. It has prompted immediate actions, including clarifying codes of ethics and plagiarism for students and educators (Gallent Torres *et al.*, 2023). However, ChatGPT represents just one of the multifaceted AI-related challenges and opportunities that higher education institutions (HEIs) face. Consequently, digital transformation presents HEIs with serious organisational challenges.

While GenAI offers personalised tutoring and research assistance (Jell *et al.*, 2023; Krenn *et al.*, 2023), HE is still learning how to adapt to or implement emerging technology. Its integration also raises issues such as potential academic dishonesty, plagiarism and cheating (Meça and Shkëlzeni, 2024). Thus, concerns regarding data privacy and security, along with the risk of overdependence on AI tools, could erode traditional academic values and integrity. Balancing these benefits and challenges is crucial as educational institutions integrate AI technologies to ensure they enhance rather than compromise the quality of education and research. Accordingly, our inquiry focuses on how HEIs manage their organisational strategy in digital transformation and GenAI, as well as the organisational directions and strategies that emerge in response to these advantages and challenges.

This investigation is particularly important because GenAI has become universally accessible, prompting immediate and transformative responses in educational practices. The freemium (free+premium, among others Feher, 2020) model is critical in this context, as it democratises access to advanced AI tools for the general public while offering enhanced, high-quality services for premium users, fostering widespread innovation and inclusivity in HE.

Assuming that top-ranked universities, which consistently lead in global rankings, play a pivotal role in educational innovations, we examined their organisational responses. We examined the publicly available website-based communication of the top 30 ranked universities from the Times Higher Education 2024 list to analyse their strategies and policies and interpret how they react or adapt to this organisational change.

Accordingly, we first provide a very short tour of organisational change and adaptation theory and summarise the challenges of digitalisation and GenAI in HE. Following this conceptual framework, a detailed description of our research process is presented. Our results are grouped around a few main areas: the number and type of strategies identified, their characteristics and organisational specialities. In the discussion, we connect these results with organisational change and adaptation models and theories, highlighting the complexity of the situation even among top universities and emphasising some controversial issues and the leading role of teaching-learning centres in (digital) innovation.

2. Conceptual framework

2.1 Organisational change, technological disruption and organisational adaptation in higher education

Organisational change can be defined as "the actions in which a company or business alters a major component of its organisation" (Stobierski, 2020, online). Although the literature identifies numerous external factors that can induce organisational change (e.g. Barnett and Carroll, 1995), technological advancements are consistently among them (Kanitz and Gonzalez, 2021). Technological development is a significant element of organisational operation; therefore, its alteration changes the organisational settings. The speed and depth of this change can vary depending on the level of transformation in external or internal factors. Consequently, the reactions of organisations range from minor, incremental adaptive changes to more extensive, major transformations (Stobierski, 2020).

However, technology in recent decades has been not only an external factor in the institutional environment but also a disruptive force due to its rapid and continuous development. The speciality of disruptive technology is that it "disrupts an established trajectory of performance improvement or redefines what performance means" (Christensen and Bower, 1996, 202). That is, they not only introduce new performance parameters but also simultaneously undermine the existing system (Cozzolino *et al.*, 2018). In HE, this means, on one hand, moving from traditional educational modes of knowledge transmission towards new ways of teaching and learning, and on the other hand, reforming the university system by applying information and communication technology (ICT) technologies (Garcia-Morales *et al.*, 2021) and, more recently, AI solutions. This requires profound and overarching adjustments from organisations. However, as Zighan (2022) emphasised, organisations should not only cope with emerging disruptive technologies but also rethink their strategy and management style. Similarly, Cozzolino and colleagues (2018) distinguished two phases of disruption, referring to the initial phase as disruptive innovation with the emergence of disruptive technologies and naming the second phase as "business model adaptation" when new and disruptive actors enter the scene. The HE industry appears to be in the first phase, with individual experimentation with new models and strategies, but some actors provide education based exclusively on these new technologies (see, e.g. Minerva, Coursera, Udemy and Khan Academy). The emergence of GenAI could further accelerate this situation. As Christensen (1997) pointed out, incumbent companies may lose market share if they focus solely on maintaining existing customers and do not remain open to new opportunities. Therefore, examining how leading universities react to these disruptive technological changes in their strategies is essential.

Nonetheless, organisational adaptation is not straightforward (see the various aspects and related topics in the academic discourse at Sarta *et al.*, 2021). It requires "modifications and alterations in the organisation or its components to adjust to changes in the external environment" (Cameron, 1984, 123). This is even more complicated for HEIs, which face numerous and often contradictory demands from their stakeholders and therefore struggle with mission overload (Brennan and Teichler, 2008). Whether we view HEIs from the

resource dependency perspective (Pfeffer and Salancik, 1978), the institutional isomorphism perspective (Meyer and Rowan, 1977; DiMaggio and Powell, 1983), or the strategic choice perspective (Cameron, 1984), one feature is unquestionable: HEIs are open systems (Scott, 2003). They operate within a complex network of stakeholder demands, balancing external and internal needs and resources (Gornitzka and Maassen, 2000). In our approach, HEIs are active agents; they have the capacity and opportunity to manoeuvre and choose between different directions and actions (Géring *et al.*, 2023). Accordingly, even if they are somewhat determined by their environment, they can manage this dependency by adjusting their operations (Gornitzka and Maassen, 2000, 85–86). This manoeuvring can involve mimicking leading HEIs (see mimetic isomorphism at DiMaggio and Powell, 1983) or choosing their own path based on strategic planning and strong management that define the institutional role, mission and external relationships (Gumport and Sporn, 1999, 25). Furthermore, as HEIs are typically "loosely coupled" organisations (Weick, 1976), with more room for experimentation at the individual, unit and departmental levels, autonomy is relatively high (Orton and Weick, 1990). This context provides an excellent field for experimentation with new forms of value creation (the first phase by Cozzolino *et al.*, 2018), namely, in HE, with new modes of teaching and learning, and new modes of knowledge production and knowledge transfer. Moreover, we must not forget that technological adaptation occurs at both the individual and organisational levels (Haggerty and Golden, 2002, p. 249). This situation requires constant interaction between management and faculty members to avoid conflict and opposition among the "loosely coupled" internal interest groups (Weick, 1976). Organisational communication can reflect these efforts, which is why we chose this source to analyse the strategic responses of top HEIs to digital transformation via GenAI challenges.

Although our research provides a snapshot of the strategic responses of leading universities in early 2024 to these challenges, we must remember that adaptation is a process influenced by numerous factors. This process has been depicted with different models in the literature, such as Lewin's 3-step model (Burnes, 2004) or Kotter's 8-step model (Kotter, 1995), among others. Kotter's eight-step model (Kotter, 1995) offers a more nuanced picture of the different adaptation phases, starting with examining and identifying threats and crises, followed by forming powerful coalitions that can guide the change process. Forming and communicating a new vision is the next step in his model, followed by changing structures and processes to empower employees to be active and innovative. Next comes the improvement of performance management and the consolidation and institutionalisation of new approaches (Kotter, 1995, 61). Analysing these processes typically requires longitudinal analysis, as seen in Barbara Sporn's (2001) examination of the adaptation strategies of six universities. However, even with cross-sectional research, such as ours, we can identify relevant characteristics of the phases of adaptation and significant actors or units. Accordingly, our analysis of the strategic communication and documents of internationally leading HEIs can help us understand where HEIs stood in early 2024 concerning technological disruption and the latest trends in digitalisation.

Regardless of the phase of adaptation of HEIs, one point is crucial: they must continuously scan their environment and the expectations of their stakeholders (Cameron, 1984; Boeker, 1997) because these also change with alterations in the external factors (see, e.g. Fűzi *et al.*, 2022). This approach is imperative not only for adaptation but also for responsibly and sustainably shaping the future and its impact on society (Sporn and Godonga, 2024). A further unique challenge in digital transformation milestones is the proliferation of GenAI, which presents specific difficulties in HE.

2.2 Generative artificial intelligence–driven digital transformation in higher education

As educational systems adapt to digitalisation and the integration of GenAI, the focus has predominantly been on its impact on teaching, learning and assessments (Kétyi *et al.*, 2025; Fekete, 2025). However, the organisational approach within HEIs is rapidly changing. The increasing complexity of the transformative and disruptive societal impact of GenAI, challenging policy and ethics (Feher, 2025), demands a shift from individual and classroom-level analyses to a broader, institution-wide perspective.

While leading organisations such as UNESCO, OECD and the EU AI Act emphasise ethical frameworks and governance principles (Holmes and Miao, 2023; OECD, 2023; European Parliament, 2023), their recommendations often overlook the detailed organisational challenges HEIs face. These include aligning AI adoption with institutional missions, addressing faculty training needs and balancing innovation with ethical accountability. Recent academic research highlights the urgency of examining these challenges. For example, Bobula (2024) underscores the necessity of comprehensive strategies that integrate ethics, staff training and curriculum development to address the opportunities and risks of GenAI effectively.

Adopting GenAI in HEIs demands a robust approach that integrates privacy, authenticity, transparency and AI literacy (Feher, 2025) into institutional strategies. While GenAI offers transformative potential, it also poses challenges such as data privacy risks, authenticity concerns and transparency gaps in decision-making. The innovation-versus-ethics dilemma emerges as institutions balance AI-driven advancements with safeguarding academic integrity and public trust (Jin *et al.*, 2024). Fostering AI literacy among students, faculty and staff is essential for informed, responsible engagement with these tools. HEIs must prioritise clear policies to delineate AI-generated versus human-created content, protect sensitive information and promote trust. Embedding these principles helps align innovation with ethical responsibility, strengthening HEIs' role as societal stewards.

McDonald *et al.* (2024) analysed policies from 116 US universities, revealing that many institutions are beginning to develop detailed guidelines for integrating GenAI into academic practices, including curriculum design and sample syllabi. However, the study also highlights significant gaps in implementation due to rapidly evolving AI technologies, suggesting that organisational adaptability is crucial for success. Similarly, Jin and colleagues (2024) emphasise the importance of clearly defining roles and responsibilities among faculty, students and administrators, advocating for collaborative models to navigate GenAI integration effectively. An and colleagues (2025) analysed AI policies from 50 US universities, highlighting key topics such as GenAI in learning, media, security, ethics and integrity, with an overall positive sentiment towards these challenges. However, they focused on guidelines rather than comprehensive organisational or unit-level strategies, leaving several relevant organisational functions unexamined.

In parallel, reports from consultancy agencies and industry stakeholders focus more on the economic potential of GenAI than its ethical and regulatory dimensions. These perspectives often neglect the accountability challenges universities face when adopting AI tools (Feher and Veres, 2022). This oversight underscores the critical need for HEIs to develop organisational policies and strategies that address both the technical aspects of AI and its broader societal implications. The Stanford HAIC (2024) AI Index Report further highlights this gap, briefly touching on AI's use in education but failing to explore in detail HEIs' organisational strategies.

Academic literature has begun to address GenAI in HEIs, particularly teaching adaptations (Pan, 2024; Walter, 2024), student reactions (Folmeg *et al.*, 2024; Strzelecki, 2024) and plagiarism concerns (Mhlanga, 2023; Wang *et al.*, 2024). Rudolph *et al.* (2023)

offered one of the few comprehensive analyses, emphasising the importance of fostering a student-centric pedagogy, aligning assessments with learning goals and integrating AI literacy training. Their findings highlight the need for policies that balance digital literacy with academic integrity and faculty workload considerations.

Despite these efforts, the organisational dimension of digital transformation in HEIs, particularly concerning GenAI, still needs to be explored. Moreover, organisational-level discussions remain scarce, and samples of the top universities are not summarised. Studies on AI's impact in non-academic sectors, such as human resource (HR) and governance (Bar-Gil *et al.*, 2024; Vigoda-Gadot and Mizrahi, 2024), provide valuable insights but fail to address the unique challenges HEIs face. However, organisational policies in HE must account for the dual pressures of technological innovation and the ethical responsibilities that define the academic mission.

Accordingly, by studying HEIs' organisational strategic documents in detail, this research aims to bridge the gap between ethical principles and actionable strategies. A trusted GenAI approach that fosters critical thinking and aligns with institutional goals can significantly enhance a university's reputation and societal impact (Feher *et al.*, 2024). This study not only addresses current gaps in the literature but also initiates a necessary dialogue on how HEIs can effectively navigate the digital transformation brought about by GenAI, ensuring alignment with their educational and societal responsibilities at an organisational level.

3. Research process

To examine how highly ranked HEIs responded to the previously presented phenomena, we manually collected content from the websites of the Times Higher Education (THE) World University Ranking's 2024 top 30 HEIs [1]. The manual data collection occurred between December 2023 and January 2024 and focused on documents available for download and website content on the institutions' official websites. We primarily relied on the sites' search engines; however, when these proved ineffective (listing only news or research papers), we searched the Web page manually and lastly checked with Google to see whether organisational strategies were available (and verified their relevance on the website).

During the gathering process, we sought texts discussing institutional-level strategic visions for the future pertaining to digital transformation, i.e. strategic plans, strategic priorities, documents, reports, action plans and policy documents. Given that the phenomenon of digital transformation encompasses various areas and is usually described with a wide variety of expressions, we focused on whether the topics of digital transformation, information technology and GenAI were addressed in HEIs' online external communication. To do so, we used keywords such as "AI", "artificial intelligence", "digital" (as in "digital strategy"), "digital transformation", "digitalisation [2]", "IT" and "information technology". Website content and documents containing at least one of these keywords and discussing the institutions' strategic visions for the future were collected if they provided further information regarding their digital transformation beyond merely mentioning the previously introduced keywords. In addition to these criteria concerning the type, theme and thematic depth of the data collected, we also considered the age of the documents (if determinable), specifying that the oldest documents to be considered could be those published in 2016 if they remain relevant in 2024 (e.g. 10-year strategy). The resulting corpus was validated by three researchers who cross-checked the collected material against the established criteria. Disagreements were resolved through joint discussion: a document was incorporated into the corpus only if it received consensus from at least two of the three researchers conducting the data collection process. The dataset is openly available at Zenodo (https://doi.org/10.5281/zenodo.15000426).

To analyse the content, we defined *a priori* six main coding categories that we believe are crucial in understanding the nature of strategic documents discussing HEIs' institutional-level visions for digital transformation (Krippendorff, 2019; Neuendorf, 2002). These coding categories aim to grasp the extent of publicity, level of detail, area, scope and time interval of interpretation of digital transformation, and the issues addressed in relation to it. Three researchers coded independently, using an inductive coding strategy based on the six pre-defined categories in the process. The results of the coding process were verified by the three coders together through a joint discussion, in which each researcher explained their coding results along with relevant excerpts from the coded texts.

The objective of our analysis was to investigate and compare, in an international setting, how HEIs address and conceptualise the phenomenon of digital transformation and the related initiatives undertaken within their organisations in their external communication. Therefore, we collected only publicly available English-language documents and website content, easily accessible to a wide range of international actors. This activity highlighted a limitation of the research: the probable differences between the target groups of specific HEIs' English-language strategic documents and reports. Namely, whereas the published materials of HEIs in English-speaking areas target both local and international audiences, the English-language external communication of HEIs in non-English-speaking countries primarily targets international audiences. It is also worth noting that focusing on the institutional-level strategic approach of highly ranked HEIs both guides and narrows down the interpretational context of our results. As such, our results reflect the content of the communication these institutions publicly share regarding their institutional-level strategic approach to digital transformation and not, for example, other non-public policies or practices. Finally, we acknowledge that this area is rapidly evolving. Institutions can easily update their websites, and digital transformation is currently a significant focus in the HE sector. Hence, HEIs are preparing and revising their digital strategic documents daily. Thus, this analysis aims to provide a snapshot of the top-ranked institutions' strategic approaches to digital transformation and GenAI as of spring 2024.

4. Results

In the following section, we first present the identified strategy types and their frequencies. After a brief reflection on the "breadth" of these strategic responses, we provide short descriptions of the different types.

4.1 Types of organisational responses

In Figure 1, we depict the distribution of the units and organisational forms we identified, which strategically address aspects of digital transformation at the leading HEIs. Among the 31 examined universities, we found 98 relevant strategies (see Appendix and the open dataset at Zenodo: https://doi.org/10.5281/zenodo.15000426). Notably, the most prevalent were teaching-learning strategies (n = 20). This was followed by general institutional strategies (n = 16), IT unit strategies (n = 15) and collection of other initiatives (n = 15). Committee reports (n = 13) constituted 13% of the corpus, whereas library strategies (n = 12) accounted for 12% of the documents. The less frequent strategies were research-related (n = 4) and those emerging at the faculty level (n = 3).

4.2 Institutional diversity in the breadth of addressing change

We delineated three categories regarding the number of documents held by the examined universities, containing guidelines on digitalisation and GenAI. The first category comprises institutions addressing digital transformation strategically at only one organisational unit

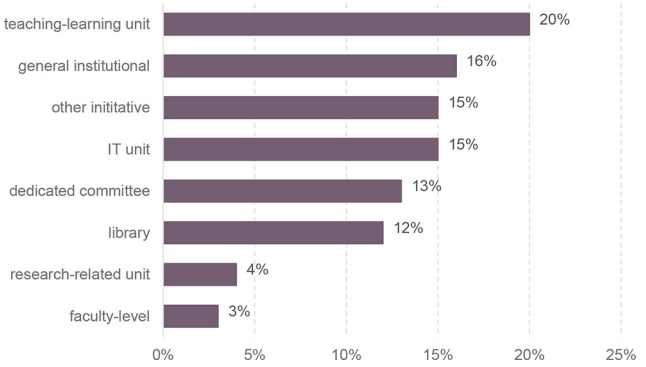

Figure 1. Frequency of the document types
Source: Authors' own work

(n = 9). The subsequent category contains universities involving two to three areas (n = 10). Finally, the third category encompasses institutions with the highest number of such directives, in which four or five involved units were identified (n = 12, see Figure 2 and Appendix).

Among the 12 universities with the highest number of documents, only two, namely, University of California, Los Angeles (UCLA) and Duke University, addressed the issue in five different areas in early 2024. In both institutions, we identified general strategies as well as educational strategies. Furthermore, UCLA had research, IT and faculty-level strategies, whereas Duke University had a Library Strategy, a Digital Strategies Unit (classified as a committee) and other initiatives (an AI survey).

Of those universities that formulated strategies in two or three areas, nine out of ten have either general, teaching-learning, or IT strategies among the addressed areas. When we examine those HEIs that formulated strategies in only one related area, we find general strategies at 22.2%; the same proportion had IT strategies and one university had a library strategy. In addition, 44.4% of these universities had other initiatives, such as digital consultation, online educational brochures or the Facilities Services Strategic Plan.

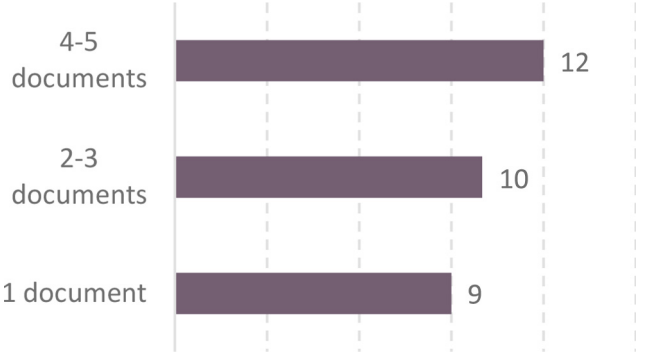

Figure 2. The number of universities by document-number categories (n = 31)
Source: Authors' own work

4.3 Short descriptions of the different types of organisational strategies

Regarding the variety of organisational responses we identified, Table 1 contains the general characteristics and the main issues addressed by the different organisational strategy types. Following Table 1, we explain in short with good examples of the most relevant types (general strategies, teaching-learning strategies, IT strategies and committees) for a more nuanced understanding.

4.3.1 General university-level strategies. Thirteen institutions published general, institutional-level strategic plans that include the topic of digital transformation or AI. Among them, nine HEIs included these issues in their broad strategic plans, two published separate digital strategic plans, and two institutions (Oxford and UCL [3]) addressed these topics in both. These can be seen as different levels of strategic focus on the issue of digital transformation, assuming that a separate digital strategy indicates specific importance rather than a lack of integration into the organisational strategic directions.

In terms of AI, 7 of the 13 institutions explicitly addressed AI in their university-level general or digital strategies. In these texts, AI has been mentioned in varying depth, mainly as a cutting-edge field in which the university is (or aims to be) at the forefront. Guidelines regarding AI use, either in research or in teaching and learning, were relatively rare in these texts. Furthermore, only four institutions addressed ethical issues regarding the use of GenAI – some even referring specifically to bioethics and techno ethics – while another three interpreted the topic of ethics and responsible use concerning data handling.

Even more expressive is the wide variety of detail in the strategic documents regarding digital transformation, information technology and the integration of AI. Some institutions, such as TU Munich and ETH Zürich, approached these topics from numerous angles and

Table 1. Main characteristics of the top 30 ranked HEIs' digital transformation strategies by unit

Strategy type	*General characteristics*	*Main issues addressed*
General strategies	A wide variety of areas and levels of comprehensiveness	Digital transformation, information technology, integration of AI, interdisciplinary research and digital innovation
Teaching-learning strategies	Targeting lecturers and students	Digital education, the role of AI in teaching, digital learning strategies and digital tools for lecturers and students
IT strategies	Timeframes vary from 2 to 10 years	IT services, IT systems, security and data management and development of the IT workforce
Dedicated committees	Wide variety of focuses and areas	Digital education, digital research, general digital transformation and AI-specific task forces, including administrative fields
Library strategies	Significant variation in length, detail and "outdatedness"	Digital preservation, digitisation of library collections, improvement of digital access and searchability
Research strategies	Limited in number and lacking detail	Digitalisation and AI as either research topics or tools facilitating research
Faculty-level strategies	Few and not publicly available	Focus on user experience and the importance of digitalisation
Other initiatives	Diversity in content and target audience	Statements, training materials and units, hubs, surveys, guidelines and regulations

Source(s): Authors' own work

introduced their approach to digital learning, digital innovations, the institutions' approach to data science and research enhancement through digitalisation. Other institutions focused on fewer strategic areas but provided detailed plans for their digital transformation, usually concentrating on one or two strategic areas, such as Johns Hopkins University, whose strategic plan mainly emphasises how machine learning, AI and health data science can improve medical research, innovation and, through those, social wellbeing. Frequently detailed areas include research, digital and AI innovation and support for interdisciplinary research with humanities and social sciences.

Finally, some institutions addressed these topics only sporadically. They mentioned the importance of digital transformation, or the development of information technology infrastructure occasionally but still did not provide a plan for the systemic integration of any of these topics into the institution's strategy and operation.

This diversity indicates the absence of a single common interpretative framework for digital transformation at the sector level yet.

4.3.2 Teaching-learning strategies. Documents related to GenAI and the digital transformation of education were identified for 14 institutions. Among them, four universities have formulated digital education strategies (Oxford, Cambridge, Berkeley and ICL), whereas one included digital education as part of their vision and mission statement (UMICH), and one in their overall educational development objectives (UCLA). All this demonstrates that these institutions strongly emphasise the role of digital transformation and GenAI in education, as they have included the topic in essential documents such as their mission and vision statements and educational development objectives, and even created a specific digital education strategy.

We can also find examples of the Digital Learning Innovation Unit (at Toronto), an articulated Digital Learning Commitment policy (at TUM) or digital learning websites (at Northwestern). In addition to the comprehensive materials regarding digitalisation in teaching and learning, two universities dealt with the potential of blended learning (MIT, Cambridge), one university creatively applied digital tools in education (Princeton), and five universities explicitly discussed the role of AI in teaching (CalTech, Berkeley, Cornell, Toronto and Duke). All five institutions created AI teaching guidelines. Most of them also addressed the ethical use of the technology; for example, CalTech formulated four guiding principles to follow when using GenAI, which refers to the ethical aspects of applying such technologies. In addition, Berkeley founded an AI community, which serves as a hub for the university's members to share their "AI-related approaches and needs", and Duke University surveyed the AI usage of users and researchers. It is, therefore, clear that institutions are paying close attention to AI solutions.

4.3.3 IT strategies. Of the 31 HEIs examined, only 13 provided IT strategic information related to digital transformation and GenAI. Four outstanding IT strategies were built with extensive university-wide engagement (Princeton, ICL, Berkeley and UCLA). At these universities, the available information is also manifold and comprehensive, typically including not only teaching and research-related strategic topics but also cybersecurity and data management issues, inclusive IT workforce initiatives and infrastructure development. At other universities, we can find information about strategic IT plans, but they are not as extensive. Regarding the time period of the collected strategies, they vary from two years to ten years. Overall, the focus areas are mainly IT services, IT systems, security and data management and IT workforce development. However, six universities address the teaching-learning experience as a strategic priority in their IT strategic communication and two IT strategies explicitly include "digital transformation" as a core area. However, GenAI-related topics appeared only in two universities' IT unit communications, and both of them are

guidelines for AI. Unfortunately, IT is one of the units in which the strategic documents are not necessarily publicly available (in the case of two universities).

These results indicate that the IT units focus more on the basic operational aspects of digital transformation at the HEIs, with a special emphasis on security, data management and data privacy issues. The examples of GenAI-related initiatives and strategic directions at these units are very few.

4.3.4 Dedicated committees. Eleven of the examined universities formed dedicated committees to address the challenges of GenAI in digital transformation. Two of them focused specifically on questions of digital education (Cambridge–Digital Education Futures Initiative; NYU–Faculty Committee on Technology-Enhanced Education). Two universities launched digital transformation offices and committees (MIT and ETH) and another two established digital strategy committees (UCL and Edinburgh). However, we identified AI-related committees at four universities (for example, Berkeley's AI Community serves as a hub for staff, faculty and students interested in AI, whereas at the University of Michigan-Ann Arbor, a GenAI Advisory Committee provides guidance to the university community on AI-related subjects). The most extensive AI committee structure among our sample in early 2024 was at Cornell University, where, in addition to a general Digital Literacy and AI initiative, there is a Cornell AI initiative, which was started at the end of 2021 and includes a task force on the use of GenAI in research, one committee to develop guidelines and recommendations for the use of GenAI for education at Cornell, and a Generative AI Administration Task Force. However, like IT strategies, some of the strategic documents are not publicly accessible, so we cannot ascertain their content.

It appears that a typical organisational response to the newly emerging challenges of digital transformation, particularly the fast-developing GenAI, is to establish dedicated committees. This area seems to be the most dynamic and responsive. Naturally, it is easier to address a new and somewhat unknown or ambiguous challenge with a newly formed committee than to find time and workforce among existing offices. However, due to their "out-of-organisational chart" nature, their role and influence can be challenged.

5. Discussion

Our focus has been on investigating the organisational response of HEIs to the challenges of digital transformation, with a special emphasis on the integration of GenAI. This research is deemed crucial due to GenAI's transformative potential in education, as highlighted by Jell *et al.* (2023) and Krenn *et al.* (2023).

Our results show that all 31 of the examined top universities addressed the issue in some form and made most of their strategic documents and information publicly available. This approach clearly indicates the urgency of the issue and the commitment of the HEIs to address the challenges of digital transformation and GenAI.

However, the organisational strategies vary considerably. Naturally, different units focus on different areas. However, as illustrated in Table 1, even within the strategy types, the diversity is noticeable, ranging from general strategies addressing digital transformation and interdisciplinary research to faculty-level initiatives focused on adopting GenAI. This diversity reflects the ongoing need to balance innovation with ethical considerations, ensuring that GenAI advancements align with institutional missions while safeguarding integrity, trust and equitable access (Jin *et al.*, 2024).

These results mirror the complexity of the transformative-generative technologies (Fekete, 2025; Feher, 2025) and the HEIs' struggle to grasp their intricacies, as even the globally leading universities are in the midst of building strategies, establishing committees and developing guidelines and regulations. On translating these efforts into different levels

of organisational change or adaptation processes (Sporn, 2001), our results indicate that HEIs are in the midst of the adaptation process, trying to (re)define their roles, structures and processes regarding GenAI in digital transformation.

If we apply Kotter's (1995) adaptation-steps model (see Table 2), the awareness is palpable, but the actual organisational responses oscillate between different steps. We can find examples of universities with tentative initiatives without any further strategic movement (Step 1) or freshly funded dedicated committees (Step 2 at Kotter, 1995). However, there are also HEIs in which comprehensive digital strategies, policies, task forces and four to five involved units are present, which can be seen as the "empowering others" phase (Step 5) according to Kotter. As Table 2 illustrates, when moving towards a higher level of commitment, the frequency starts to decline slightly. Thus, while all the examined top universities communicated about the topic, only slightly more than half had reached Step 5 (empowering others) in early 2024 based on their external communication. We did not find examples of Steps 6, 7 and 8, which clearly indicates that we are in the midst of the HE field's transformation.

Regarding the organisational responses and adaptation strategies, a critical issue arises concerning the *separate digital (education) strategies* we found. They can indicate two different organisational adaptation processes: 1) a strategic response to a new disruptive challenge with engagement, vision, goals and well-defined tasks and responsibilities (Step 5 by Kotter, 1995); or 2) they may reflect a separate attempt to understand this disruptive phenomenon without clearly integrating it into core operations. This evaluation, however, requires time and further research involving organisational actors, not only publicly available information.

Similarly, a dual-faceted phenomenon is the *role of the dedicated committees*, especially concerning GenAI. They can either reflect what Kotter (1995) defined as the necessary second step in an organisational adaptation process, i.e. "strong committees with powerful actors", and a fast way to build a clear mission, define strategic directions and acquire committed leadership—essential elements for a successful change procedure in HE (Sporn and Godonga, 2024:4). Or they can be (weak) attempts to incorporate new topics and challenges into the university agenda, trying to squeeze out some quick response within a very slowly responding organisational structure (Zighan, 2022). Or – if we are even more critical – they may serve merely as "window-dressing", indicating that the HEI acknowledges the new challenges and is addressing them but remains at the level of general communication and emphasis on importance without real strategic commitment. Again, this situation requires further research beyond the analysis of external communication.

Another significant result of our research is that *teaching-learning offices and development centres* appear to be the foremost innovators and the quickest-responding organisational units within universities. Particularly concerning the challenges posed by the GenAI milestone of digital transformation in HE, they are the leading innovators among the top HEIs analysed. The responsiveness of these units can be attributed to multiple factors. First, their structural flexibility allows them to adapt more quickly than faculties or institutional strategies, which remain less agile even in the loosely coupled HE system (Orton and Weick, 1990), positioning them at the forefront of change. Second, these units, concentrated on teaching expertise, possess the knowledge and influence to respond effectively to disruptions, aligning with the university's core mission of rapid adaptation (McDonald *et al.*, 2024). Alternatively, the nature of the GenAI challenge itself, with its disruptive impact on knowledge acquisition and dissemination, may demand their immediate intervention rather than that of IT or research units. Consequently, they function as structurally pivotal entities, ensuring institutional adaptability in a top-down approach. On

Table 2. Applying Kotter's (1995) eight-step adaptation model to higher education, based on leading HEIs external strategic communication

Steps of Kotter's Model (1995)	Application to digitalisation and GenAI challenges in HE	Situation among the top 30 ranked HEIs in early 2024
Step 1: Establishing a sense of urgency	• Communicating changes related to digital transformation and GenAI • Using terms such as "disruptive", "challenges" and "transformation"	• All the examined leading universities have engaged in external strategic communication regarding digital transformation and/or GenAI
Step 2: Forming a powerful guiding coalition	• Establishing committees dedicated to addressing digital transformation and GenAI challenges • Initiating AI-related projects	• One-third of the leading universities have funded dedicated committees • Almost half have launched relevant initiatives
Step 3: Creating a vision	• Developing and communicating a dedicated digitalisation strategy	• Thirteen universities have provided institutional-level strategies addressing the topic
Step 4: Communicating the vision	• Incorporating digitalisation and GenAI into the overall university strategy with clear emphasis and detail	• But only four have developed dedicated digital strategic plan and • Seven HEIs have explicitly addressed AI in their strategies
Step 5: Empowering others to act on the vision	• Providing guidelines, principles and initiatives for implementation	• Almost half (14) of the HEIs have developed teaching-learning strategies
	• Empowering units such as teaching-learning centres, IT departments and libraries to develop strategies, initiatives, guidelines and programmes	• IT strategies have been implemented by a similar number (13 HEIs) • Addressing four to five areas (including general strategies) at 12 HEIs
	• Encouraging stakeholder engagement, particularly among teachers, students and administrators	• There are examples of university-wide engagement, though they are rare

(*continued*)

Table 2. Continued

Steps of Kotter's Model (1995)	Application to digitalisation and GenAI challenges in HE	Situation among the top 30 ranked HEIs in early 2024
Step 6: Planning for and creating short-term wins	• Beginning to measure improvements • Establishing a reward system for new initiatives, innovations and the application of new teaching methods	No documented examples were found
Step 7: Consolidating improvements and producing still more change	• Restructuring the teaching model, credit system and administrative processes by incorporating successful examples, innovations and improvements from previous steps • Integrating digitalisation and GenAI-related goals and expectations into the hiring and promotion systems	No documented examples were found
Step 8: Institutionalising new approaches	• Stabilising new operational methods • Connecting separate developments from IT, education, research and administration into a coherent structure • Maintaining and fine-tuning the new system	No documented examples were found

Source(s): Authors' own work

the other hand, they are the units of the universities that can absorb individual, bottom-up knowledge and initiatives, embracing new ideas, innovative approaches and fresh experiments from lecturers. Thus, they are doubly positioned to be the leading unit in innovation related to technology, digital transformation and the current GenAI discourse, reflecting what Haggerty and Golden (2002, p. 249) emphasised: that technological adaptation occurs at both individual and organisational levels.

However, we must not forget that the impact of GenAI appears to be far more complex than merely presenting significant challenges for the educational tasks of HEIs. The anticipated challenges and transformations encompass the entire operation of universities and even influence their social roles and responsibilities (Feher, 2025).

The collected strategic documents reflect this complexity, indicating that an effective organisational strategy should not only promote digital literacy and integrate AI tools into curricula but also ensure that faculty are not overburdened. In addition, it should involve updating policies and encouraging AI-related educational research to genuinely harness the educational benefits of GenAI while managing its challenges (considering Rudolph *et al.*, 2023). It is critical for HE to balance the benefits and disadvantages of digital transformation and GenAI. A trusted AI approach, combined with critical thinking (Feher *et al.*, 2024), can significantly enhance the reputation of universities within the socio-economic environment.

Our findings illustrate how institutions balance AI-driven innovation with ethical imperatives, offering practical frameworks to facilitate responsible integration while addressing challenges such as privacy, transparency and trust in organisational strategies. Highlighting exemplary cases, we can refer to ETH Zürich, where the HEI integrates data science and AI into its Strategy and Development Plan 2021–2024, underscoring the importance of embedding transformative technologies within institutional frameworks. CalTech emphasises transparency and ethical considerations in its guidelines, while Berkeley addresses the potential and risks of GenAI through detection tools and policy recommendations. Cornell promotes reflective AI integration in courses, Toronto supports faculty through workshops and Duke provides detailed guidance on the complexities of GenAI. TU Munich prioritises data enablement in teaching, research and operations, whereas UCL leverages AI-driven technologies for library transformation.

These examples highlight the necessity for dynamic strategies that address concerns regarding privacy, authenticity and trust. As emphasised in AI academic literature, a robust framework must integrate dynamic ethics alongside technological advancement to effectively navigate the innovation-versus-ethics dilemma. By fostering AI literacy and embedding ethical principles (Feher, 2025), HEIs can act as societal stewards, aligning institutional missions with responsible GenAI adoption, training and curriculum (Bobula, 2024), while mitigating risks to public trust and academic integrity. In this way, they can not only react but also become change agents themselves, steering society towards a responsible and sustainable future (Sporn and Godonga, 2024).

6. Conclusion

In light of the conclusions drawn above, it is evident that GenAI in digital transformation presents a complex challenge to HEIs. The growing interest suggests that both world organisations, consultancy agencies and academic policy analysts will soon respond more intensively to rapid practical implementations, for which this article has already provided a preliminary overview. By learning from emerging trends and future signals, HEIs can proactively address areas such as IT strategies, teaching-learning strategies, library strategies, research and faculty-level strategies and dedicated committees. This strategic anticipation enables institutions to adapt effectively, ensuring that they remain at the forefront of educational innovation and are prepared to responsibly leverage GenAI technologies to enhance their educational and research missions. Therefore, this paper offers practical guidance for proactive institutional development and policymaking while highlighting academic implications for adaptive governance in ethically sound, forward-looking GenAI-driven digital transformation in HE.

Notes

1. The data gathering included 31 institutions, as two institutions simultaneously occupied the 30th place of the THE ranking.
2. We searched for both English and American versions of words with different English and American spelling.
3. The full names of the universities with their abbreviations can be found in Appendix.

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Table A1. Types of digital strategies at the top 30 ranked universities of THE 2024 ranking

Rank	University (abbreviation in paper and Zenodo data set)	General strategy	IT policy, strategy	Teaching-learning strategy	Library strategy	Research-related strategy	Faculty level	Committee	Other initiatives
1	University of Oxford (Oxford)	x (2)		X					
2	Stanford University (Stanford)								x
3	Massachusetts Institute of Technology (MIT)			x	x			x	x
4	Harvard University (Harvard)				x				
5	University of Cambridge (Cambridge)			x	x			x	x (2)
6	Princeton University (Princeton)	x	x	x					x
7	California Institute of Technology (CalTech)		x	x					x
8	Imperial College London (ICL)	x	x	x (2)			x		
9	University of California, Berkeley (Berkeley)		x	x (3)				x	x
10	Yale University (Yale)		x		x				
11	ETH Zurich (ETH)	x						x	
12	Tsinghua University (Tsinghua)								x
13	The University of Chicago (Chicago)								x
14	Peking University (Peking)								x
15	Johns Hopkins University (JHU)	x							
16	University of Pennsylvania (Penn)				x		x		
17	Columbia University (Columbia)		x						
18	University of California, Los Angeles (UCLA)	x	x (2)	x		x	x		
19	National University of Singapore (NUS)	x	x						x
20	Cornell University (Cornell)			x (2)		x		x (3)	x
21	University of Toronto (Toronto)		x	x (2)	x	x			
22	University College London (UCL)	x (2)			x (3)			x	x
23	University of Michigan-Ann Arbor (UMICH)		x (2)	x	x			x	
24	Carnegie Mellon University (Carnegie)		x						
25	University of Washington (UW)	x (2)						x	
26	Duke University (Duke)	x		x (2)	x			x	x
27	New York University (NYU)		x					x	
28	Northwestern University (Northwestern)			x	x				
29	The University of Tokyo (Tokyo)	x							
30	University of Edinburgh (Edinburgh)	x	x					x	
30	Technical University of Munich (TUM)	x		x		x			x

Source(s): Authors' own work

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