Digital Transformation in Higher Education

PART B

Cases, Examples and Good Practices

EDITORS

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Digital Transformation in Higher Education, Part B

EMERALD STUDIES IN ACTIVE AND TRANSFORMATIVE LEARNING IN HIGHER EDUCATION

Series Editor: Miltiadis D. Lytras, College of Engineering, Effat University, Jeddah, Kingdom of Saudi Arabia

Filling a significant gap in the body of knowledge related to the emerging agenda of active and transformative learning strategies, Emerald Studies in Active and Transformative Learning in Higher Education is a helpful resource for policy-makers, curriculum designers, and school leaders aiming to develop value-based strategies for promoting quality education with an emphasis on active and transformative learning techniques.

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Digital Transformation in Higher Education, Part B: Cases, Examples and Good Practices

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In recognition of the persistent advocates of academic excellence who navigate the complexities of the digital revolution in higher education, this volume acknowledges the significant impact of this transformation on the learning process. It highlights those who employ innovative technologies to enhance learning outcomes and the overall student experience. Our investigation into the profound consequences of artificial intelligence for education pays tribute to the dedication of scholars, practitioners, and learners who foster inclusive, forward-thinking academic communities guided by ethical principles. This endeavor is aimed at inspiring sustained excellence and innovative management in adapting to the ever-changing digital environment.

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Contents

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Preface

The first volume of this compendium laid the groundwork, exploring the philosophical underpinnings and the strategic frameworks essential for navigating the digital shift in higher education. It illuminated the paths that institutions might traverse to harness the potential of Artificial Intelligence and foster human-centric educational models.

In this second volume, we aim to provide a comprehensive exploration of the connection between digital transformation and higher education. Each chapter focuses on a specific aspect of this dynamic relationship, covering topics such as the impact of digital transformation on learning outcomes and student experiences, the role of emerging technologies in shaping inclusive internationalization efforts, and the ethical considerations surrounding the use of artificial intelligence tools in academic research (Lytras, 2023a). Through detailed analyses and case studies, this book offers insights into how professors, learners, and policymakers can use and improve the power of digital transformation to enhance research, teaching, and learning practices, prepare students for future challenges, and encourage innovation in higher education.

In the context of digital transformation in higher education, cooperation and competition emerge as dual forces driving innovation and improvement within academic institutions. Collaboration among universities, both locally and globally, encourages the sharing of resources, expertise, and best practices, with the final objective of increasing the quality of education processes and research (Aldosemani et al., 2019; Lytras & Vaz de Almeida, 2023). Constructive competition encourages institutions to strive for excellence, driving them to adopt innovative technologies and teaching methods to act as relevant players in an increasingly competitive landscape. This competition drives culture of innovation, encouraging institutions to explore new pedagogical approaches, integrate emerging technologies, and adapt to changing student needs (Aldosemani, 2023; Alkhaldi, 2022; Vasilescu et al., 2020).

As an essential part of our current society, digital transformation in higher education facilitates English language learning through interactive online platforms, multimedia resources, and virtual collaboration tools (Lytras, 2023b; Malik & Mantas, 2021; Sairete et al., 2021). This enables students and professors from diverse linguistic backgrounds to engage with English language content, communicate effectively across borders, and participate in international academic communities. The internet serves as a powerful enabler of collaboration and knowledge exchange within higher education across borders (Lytras et al., 2023).

Rapid advancements in technology and communication have led to the globalization of knowledge and research production and dissemination (Şerban et al., 2022a). Higher education institutions are increasingly interconnected, with trends, opportunities, and innovations emerging from various countries, influencing practices and policies on a global scale. Institutions must adapt to these global effects by embracing digital transformation initiatives that enhance their competitiveness, relevance, and capacity to address the evolving needs of students, professors, labor markets, and society as a whole (Alkhaldi et al., 2024; Sarirete et al., 2022; Şerban et al., 2022b).

In this volume, the narrative progresses, deepening the exploration of digital transformation with a focus on tangible impacts and the frontiers of teaching excellence.

- Digital Transformation for Learning Impact and Enhanced Student Experience: Investigating the pivotal role digital transformation plays in enriching the educational journey, enhancing both the impact of learning and the overall student experience.
- ChatGPT: Revolutionizing Lifelong Learning in Higher Education: Emphasizing on the transformative impact of AI-driven chatbots like ChatGPT on continuous education and lifelong learning processes.
- Pre-service Teachers' Digital Self-efficacy toward Education 5.0: A thorough literature review that unpacks the readiness and confidence of future educators in the digital-forward Education 5.0 landscape.
- Integrating Digital Transformation in Nursing Education: Detailing the incorporation of digital tools in nursing programs, outlining successful practices, and addressing the complexities faced in curricular innovation.
- Digital Transformation in Teaching and Learning of English in Higher Education: An exploration of how digital advances are reshaping the teaching and learning of the English language in academic settings.
- The Role of Emerging Technologies in Advancing Inclusive Internationalization in Higher Education: Highlighting how new technologies are crucial in creating a more inclusive and globally connected educational environment.
- Ethical Considerations for AI Tools in Academic Research and Manuscript Preparation: Offering a web content analysis on the ethical use of AI tools in academic research, framing guidelines and ethical considerations.
- Digital Transformation in Higher Education: A chapter that encapsulates and reflects the ongoing changes and adaptations in higher education driven by digital transformation.
- Transformative Learning for Future Higher Education: The AI-enabled Learning Revolution 2035: Projecting the future landscape of higher education as influenced by AI, this chapter forecasts the shape of transformative learning by the year 2035.

In Fig. 1, we provide a graphical overview and synopsis of the coverage of the second volume of our edition.

Fig. 1. A Snapshot of the DT Themes, Volume Coverage. *Source:* The authors.

The conclusion of this volume invites higher education institutions to embrace a comprehensive digital transformation and learning and teaching excellence strategy. It advocates for transcending the limitations of time and space through innovative modalities of instruction. We emphasize the promotion of team-based and active learning interventions, which are powered by technology and underscored by digital transformation initiatives.

As we project our sights to the future, it is imperative that these educational strategies not only adapt but thrive within a digital ecosystem of enhanced human capabilities for knowledge creation, dissemination, and utilization. The collaborative, developmental interventions discussed herein are not merely enhancements but essential pillars that uphold the integrity and efficacy of higher education. By embedding these practices, institutions will not only respond to the current digital imperatives but also cultivate an academic landscape that is resilient, inclusive, and dynamic, equipped to foster the next generation of learners, leaders, and innovators. It is about refocusing and redefining the objective of higher education as a game changer for the prosperity, peace, and well-being of humankind.

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We also wish to acknowledge our colleagues and students, whose inspiration was pivotal in initiating this timely project during a period of rapid changes in higher education.

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Chapter 1

Digital Transformation for Enhanced Learning Impact and Student Experience

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Abstract

In this introductory chapter, we collaborate on how digital transformation (DT) supports a value-driven educational approach, emphasizing the need for regular assessments of stakeholder needs, enhancing students' abilities to solve complex problems, applying learned knowledge effectively, nurturing creativity, and boosting employment prospects through skill development. Strategic considerations for implementing DT include creating a shared vision through collaborative strategy development, establishing clear objectives, designing a detailed action plan for DT initiatives, encouraging active participation from all educational community members, and maintaining the DT strategy through continuous evaluation and adaptation. By interweaving DT with these strategic educational priorities, higher education institutions can not only improve the learning experience but also equip students to succeed in a rapidly evolving future.

Keywords: Digital transformation; higher education; future education; enhanced learning impact; enhanced student experience; active learning

1. Introduction

The digital transformation (DT) vision in higher education (HE) sets new avenues of meaningful student engagement, robust faculty development, and resilient

Digital Transformation in Higher Education, Part B, 1–12

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academic administration efficiency. It also promotes the social impact and the footprint of HE in the economic social inclusive economic development. In order though, to exploit the fruitful results of the DT, it is necessary to understand the diverse value pillars. In this introductory chapter of the second volume of our edition on DT in HE, we first elaborate on the DT as a unique value proposition in the context of academia.

1.1 Digital Transformation as a Value Proposition

In Fig. 1.1, below we provide our basic interpretation for the role of DT in HE as a unique value proposition. To our understanding, five unique gears of impact are attached to DT namely: business process reengineering, workflow automation, utilization of resources, financial sustainability, disruptive innovation.

In the next paragraphs, we elaborate further on these and we also discuss their potential in the next generation of HE.

Business process reengineering: The HE institutions need to reinvent business processes and also to enhance significantly the workflows and the business automation of the core business processes. They have in this direction to deploy streamline and emerging technologies, and also need to develop an integrated

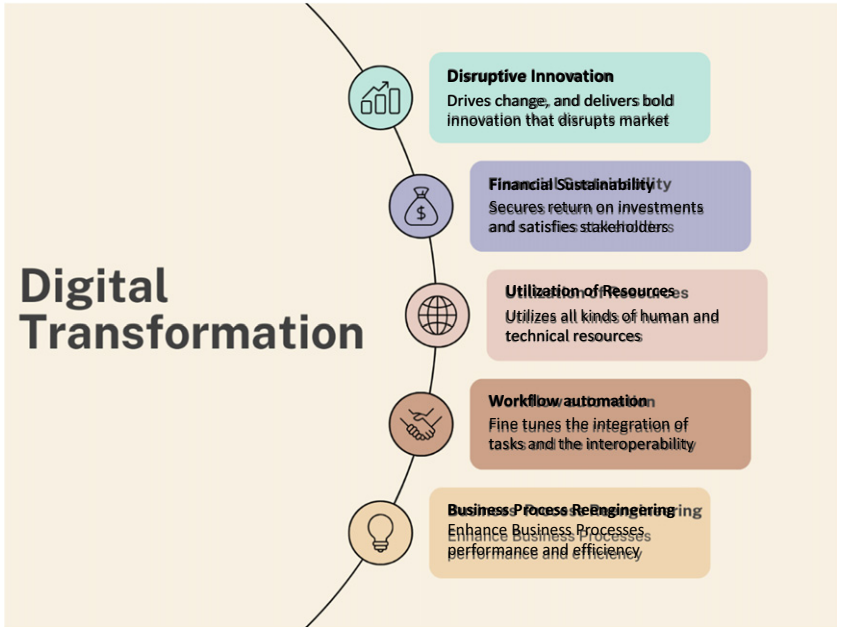

Fig. 1.1. Digital Transformation in Higher Education as a Unique Value Proposition. *Source:* The authors.

backbone of value-adding services to utilize the human talent and the technological infrastructure. In this context, the following is a list of meaningful tasks and strategic priorities:

- Enhance business processes performance and efficiency
- Deployment of artificial intelligence (AI) for redesign of workflow automation
- Utilization of AI/machine learning (ML) for the development of new processes to promote student experience and impact of education in society and economy

Workflow automation: In close relevance to the previous pillar, the workflow automation dimension brings additional value to the utilization context in HEs. These are few indicative areas of improvement:

- Fine tuning and integration of tasks and the interoperability
- Better monitoring or roles and responsibilities collaboration
- Orchestration of complicated tasks and delivery of promised work
- Expanding of value context of interactions between student, faculty, stakeholders

Utilization of resources: DT as a bold and transparent strategy is also related to the utilization of all the resources that are available in the context of HE institutions. The following are actions in this direction:

- Utilization of all kinds of human and technical resources
- Dynamic allocation of capability and competence
- Growth and development programs for faculty
- Team building capacity

Financial sustainability: This is another significant pillar of the utilization of DT in HE. The use of resources, strategies, and instruments of DT has to promote the sustainability and the financial stability and development of institutions. The following list summarizes indicative areas:

- DT for the enhancement return on investments and stakeholders' satisfaction
- DT as a bold instrument for fundraising in HE
- Robust R&D financing
- Academia-industry venture capitals

Disruptive innovation: DT can serve as a catalyst of innovation in HE. It has the capacity to promote a holistic strategy for innovative services and new educational markets and services.

- DT initiatives that drive change, and deliver bold innovation that disrupt the educational market
- Design of new educational e-marketplaces

- AI-enabled channels for microcredentials
- AI-enabled channels for robust development of skills and competencies
- Resilient academia-industry partnerships for future jobs.

2. Digital Transformation as a Bold Enabler and Multiplier of Value in Higher Education

From the diverse areas of bold contribution of the DT strategy in HE institutions in this section, we decided to focus on two distinct contexts: the quest of enhanced learning impact and the enhanced student experience. It is critical for the next wave of evolution in HE to transform these bold strategic objectives to daily routines, integrated services, and technology transformed channels for the value realization and the sustainable impact.

2.1 Enhanced Learning Impact

In the context of value-based education, the justification, delivery, and realization of value must guide the strategic decisions as well as the implementation plans and also the deployment of DT strategy. In an ontological discussion on the determinants of the potential learning impact through value we summarize in Fig. 1.2, below our ideas.

In this section, we comment on the capacity of five factors to promote significant learning impact: needs assessment, problem-solving capacity, application of knowledge to contexts, creativity, employment, and social impact. A more detailed look on these concepts is provided below.

- Needs assessment: A systematic, periodic, and regularly updated assessment of the needs of the key stakeholders in HE should be delivered. This allows the anchoring of the strategy to a thorough understanding of needs. For example, the personalization of learning to student needs must allow diverse degrees of flexibilities in the selection of courses and the exploration of learning content. The need of some students to utilize education for entrepreneurship or research should also be supported by bold HE administration's decisions and initiatives.
- Problem-solving capacity: In our times, more than even the problem-solving capacity of students must be exploited boldly. In this direction, the redesign of programs and the update of educational strategy have to be considered as top priorities. In parallel, the investment of technologies, tools, and services that promote meaningful context for problem-solving capacity building is a must.
- Application of knowledge to contexts: The applicability of knowledge disseminated in academic context has to be extended. DT can result to a significant boost on the provision of alternate and high influential context such us industry, research, innovation. sustainability, economic development, etc.
- Creativity: DT can also promote creativity and visioning of young talented student. Can support the talent and the capacity of young people and professionals in

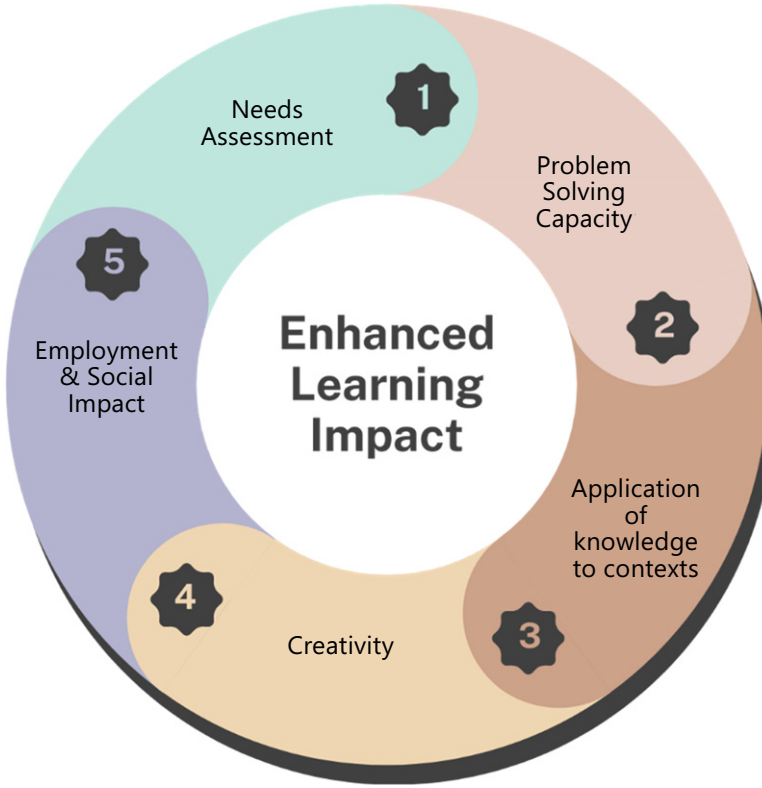

Fig. 1.2. Determinants of Enhanced Learning Impact in Higher Education. *Source:* The authors.

postgraduate programs to bring in to life novel solutions to challenges and problems.

- Employment and social impact: DT should also cultivate an educational culture that will equip students with the required skills and knowledge that will allow them to promote their careers and their contribution to the society.

2.2 Enhanced Student Experience

Expanding on the capability of DT in HE to promote an enhanced student experience across various dimensions, we comment onto how it intersects with the areas of self-accomplishment, learning outcomes, skills building, teamwork and collaboration, and quality of the entire learning environment, along with growth and career prospects. This expansion ties closely to the concepts of enhanced learning impact discussed earlier. In the next paragraph, we summarize some of our thoughts:

- Self-accomplishment: DT fosters a sense of self-accomplishment by providing personalized learning pathways and digital tools that allow students to track their progress in real time. This customization ensures that students can work at their own pace and according to their personal goals, mirroring the value-based education's focus on individual student needs and the strategic deployment of digital resources to meet these needs.
- Learning outcomes: By leveraging advanced analytics and AI, DT ensures that learning outcomes are closely aligned with the needs of the job market and societal expectations. This alignment is critical for ensuring that students are not only absorbing knowledge but are also able to apply it effectively in real-world contexts, thus enhancing the overall learning impact.
- Skills building: The integration of digital platforms and tools in HE curricula promotes the acquisition of critical 21st-century skills. DT facilitates hands-on experiences through simulations and virtual laboratories, directly contributing to the development of problem-solving capabilities and the application of knowledge to diverse contexts.
- Teamwork and collaboration: Digital platforms enable more effective teamwork and collaboration among students, regardless of their physical location. This fosters a sense of community and allows for the exchange of ideas in a diverse learning environment, enhancing the quality of the learning experience by bringing together varied perspectives and expertise.
- Quality of the entire learning environment: The holistic application of DT upgrades the entire learning ecosystem, making it more adaptable, inclusive, and supportive. Through smart campuses and virtual learning environments, students can access a wealth of resources and support services that enhance both the educational and social aspects of university life.
- Growth and career prospect: DT aligns educational offerings with career opportunities by incorporating industry-relevant skills and knowledge into the curriculum. This strategic alignment ensures that students are well-prepared for the workforce and can effectively contribute to society, thereby enhancing their career prospects and potential for societal impact.

By integrating DT strategies that focus on value-based education and the determinants of enhanced learning impact, HE institutions can significantly improve the student experience. This approach not only supports the academic and personal development of students but also prepares them to meet the challenges and opportunities of the future.

3. Strategic Considerations for the Impact of Digital Transformation in Higher Education

DT in HE isn't just a trend; it's an imperative driven by the need for educational institutions to adapt to a rapidly changing educational and technological landscape. It incorporates the integration of digital technology into all areas of academic and administrative operations, resulting in fundamental changes to how institutions operate and deliver value to students and stakeholders.

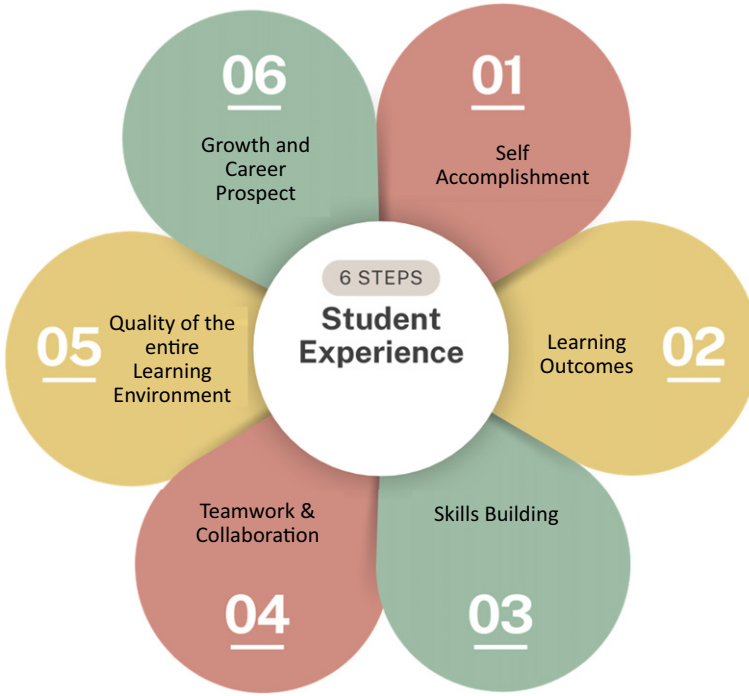

Fig. 1.3. Digital Transformation as a Bold Enabler of Enhanced Student Experience. *Source:* The authors.

In Fig. 1.3, below we elaborate on our ideas on the strategic considerations for the impact of DT in HE.

Developing the DT strategy involves a collaborative effort where faculty, students, administrators, and stakeholders collectively define the breadth and implications of the DT context. This participatory approach ensures that the strategy is well-rounded, catering to the diverse needs and objectives of the academic institution community. By building a comprehensive open repository of policies, documents, strategic initiatives, and roadmaps, the institution creates a transparent and accessible reference point that details the roles, responsibilities, and objectives associated with the strategy. This foundational step ensures that all members of the academic community are informed and engaged with the DT journey.

Setting strategic objectives requires the creation of a systematic matrix that outlines the strategic priorities within each pillar of the transformation strategy around the strategic house of the HE institution. This process is not done in isolation; it requires visualization in the form of a comprehensive strategy house that is open to consultation by diverse stakeholders, fostering an inclusive approach. By communicating these objectives broadly, HE institutions ensure

that every stakeholder is aligned with the vision, facilitating a unified move toward the digital future. This shared understanding is vital for the successful implementation and realization of the DT goals, as it establishes a common language and set of expectations for all involved.

As the HE sector evolves, these strategic considerations (Fig. 1.4) are essential for institutions to not only survive but also to thrive in the digital age. They pave the way for a more dynamic, responsive, and student-cantered educational experience, aligning with the overarching goals of enhanced learning impact and societal contribution.

A high-level overview of associated tasks is also provide below:

3.1 Develop the DT Strategy

- Define the depth of the DT context. Offer co-design opportunities to faculty, students, administrators, and other stakeholders.
- Develop a comprehensive open repository of the strategy, with references to the complementary roles, responsibilities, and objectives.

3.2 Set DT Strategic Objectives

- Develop a systematic matrix of strategic priorities per each pillar of the strategy. Visualize this in a comprehensive strategy house and allow consultation by diverse stakeholders.
- Communicate the objectives to the entire HE community and stakeholders.

3.3 Develop a Comprehensive Digital Transformation Road Map

- Provide a comprehensive, abstract roadmap for the execution timeline of the strategic initiatives and the depth of DT.
- Allocate responsibilities and roles as well as task forces to deliver the outcomes of the strategy.

3.4 Evolve Stakeholders and Initiatives

- Allocate resources of all kinds to well-defined initiatives. Communicate the impact of the outcomes for the entire HE institution.
- Develop engagement plans for all the stakeholders by assign to the responsibilities and capacities. Design bold capability development programs.

3.5 Monitor the Effectiveness and Update Strategy

- Develop high-quality, relevant, and valuable KPIs and metrics for the robust monitoring of performance and efficiency.
- Develop channels and teams to be responsible for the periodic update of the DT agenda and strategy.