

CHAPTER

13

DIGITALIZATION AND INTERNATIONALIZATION IN HIGHER EDUCATION

Wafa Troudi, Maryem Bouallegue, Meriem Somai, and Monia El Barhoumi

13.1 INTRODUCTION

Higher education is already undergoing monumental transformation, as a correlative result of speeding technological advancement and further propagation of globalization. High on the list of constituents reframing the future of higher education are learning management systems (LMS) through digital platforms such as Blackboard and advanced simulation technologies, such as those used in medicine. Students today work, learn, and live in an environment saturated with technology. LMS platforms help educational institutions (e.g., universities) engage with students through appropriate mediums (Almarashdeh et al., 2013; Momani & Abualkishik, 2014).

Blackboard Learn, a proprietary LMS, has faced strong competition since 2002, particularly from other proprietary LMSs like Canvas and Desire2Learn, as well as from open-source platforms such as Moodle and Sakai. Blackboard Learn is the most popular LMS in the US and other regions that are leaders in higher education. It is a modern technology that enables knowledge sharing and serves as a communications channel

between students and instructors, providing both asynchronous and synchronous interactions (Almarashdeh et al., 2013).

Medical education is one of the fields that has significantly embraced simulation technology as part of its digital transformation. Digital medical simulations allow students the opportunity to practice complex medical procedures in a safe and controlled environment, enhancing both their technical skills and decision-making abilities. Simulation has become an integral component of undergraduate, postgraduate, and continuing medical education curricula. The essential skills required by physicians can be categorized into three areas: (1) patient-centered skills, (2) process-centered skills, and (3) environment-centered skills (Lane et al., 2001; Ziv et al., 2006).

Two key trends shaping the future of academia are digitalization and internationalization, along with the intersection between them. The interplay of these forces influences the global higher education landscape. While digitalization focuses on technological advancements, internationalization emphasizes incorporating international, intercultural, and global dimensions into curricula, research, and institutional policies. Internationalization not only equips students for a globalized world but also boosts the reputation and competitiveness of universities on the international stage. (Knight, 2008; Beine et al., 2014).

In Tunisia, LMS have become essential tools in higher education, particularly with the increasing adoption of blended learning and e-learning. The COVID-19 pandemic significantly accelerated this shift, forcing universities and institutions to rapidly transition to online learning, highlighting the crucial role of LMS in maintaining academic continuity and enhancing educational delivery (Treve, 2021).

Université Centrale Group in Tunisia is one of the largest private educational institutions in the country. It is part of Honoris United Universities, a Pan-African network of private universities that aims to provide high-quality education across the African continent. Founded in 2001, Université Centrale offers a wide range of programs across various fields of study, such as health sciences, engineering and technology, business and management, law and political science, and

arts. Université Centrale is known for its modern curriculum, industry-focused programs, and partnerships with international universities and organizations. Its reputation attracts students from both Tunisia and other parts of Africa.

The use of a LMS is essential for facilitating education and enhancing student learning experiences. Since 2017, Université Centrale has implemented a specialized digital platform known as MyU, which serves as the Student Information System (SIS) for both students and faculty. This digitalization model integrates various tools designed to enhance 21st century education, including interactive whiteboards, online curriculum management systems, and advanced tablets. Currently, the Blackboard and the Lecturio platform, LMS play a crucial role in providing national and international students with seamless access to information, accelerated learning opportunities, and interactive environments for applying knowledge in real-world contexts. These systems have redefined the roles of faculty and students, promoting increased interaction and collaboration within small groups. The integration of these technologies has significantly enhanced learning efficiency while also cultivating critical thinking and analytical reasoning skills among all students (Chuang, 2018; Dziuban et al., 2018).

Moreover, Université Centrale has established a medical simulation center since 2018, dedicated to continuous professional development across various health disciplines. This center organizes specialized workshops tailored to specific educational objectives and student needs—such as nasogastric tube placements for nursing students, cardio-respiratory arrest simulations for anesthesia students, and postpartum hemorrhage scenarios for midwifery students. These sessions benefit both national and international participants, enriching the overall learning experience through a more globally integrated framework.

13.2 METHOD

The research analyzed the implementation of digitalization at Université Centrale, particularly focused on the use of digital platforms,

such as MyU (Student Information System), Blackboard, and Lecturio (Learning Management System). MyU, which began operation in 2017 and is designed to improve access to educational content, assessments, and teacher-student interaction, even includes regulations for students who are expatriates. The digital model also integrates high-fidelity simulators in the Medical Simulation Center for training in paramedical disciplines along the lines of integrating e-learning technologies in health sciences education. Information on the usage of these platforms, including log-in rates and content access, is analyzed for the purpose of evaluating the impact of this digital transformation. Moreover, internationalization is also viewed in the welcoming of foreign students and the provision of a globalized environment for both national and international students.

13.3 EVOLUTION OF DIGITAL TOOLS: MYU AND BLACKBOARD IN ENHANCING STUDENT ENGAGEMENT AND LEARNING

Table 13.1 illustrates the connection rate of students using the SIS, MyU. This digital tool allows students to access their courses, exams, attendance, and other essential components of their curriculum. In 2024, pedagogical content was provided by the Blackboard LMS; course content and scenario development are no longer managed by MyU.

Table 13.1 Digitalization by using MyU

Year	2022	2023	2024
Total of Student UC	4103	4202	4061
Total of Foreign Student UC	383 (9.3%)	345 (8.2%)	264 (6.5%)
Connection Rate MYU	95.36%	80.00%	88.99%
Content delivery Rate MYU	74.62%	71.20%	0%

Digitalization has been adopted in our school to transform processes by integrating digital technologies into teaching, learning, administration, and research practices. This transformation was

accelerated during the COVID-19 pandemic. Nearly all our students have embraced the SIS tool, MyU (Figure 13.1), and in the past two years, Blackboard, the new LMS tool (Figure 13.2), has successfully attracted all our students, becoming the unique LMS used within our institution.

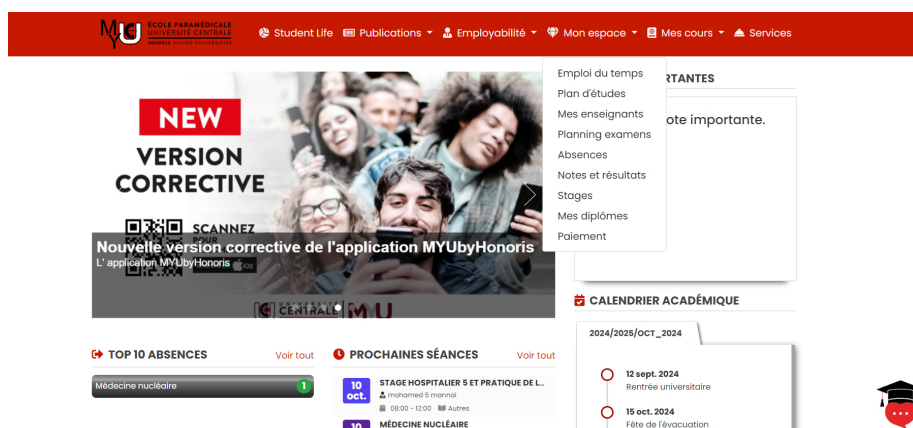


Figure 13.1 Interface Overview of MyU Learning Management System

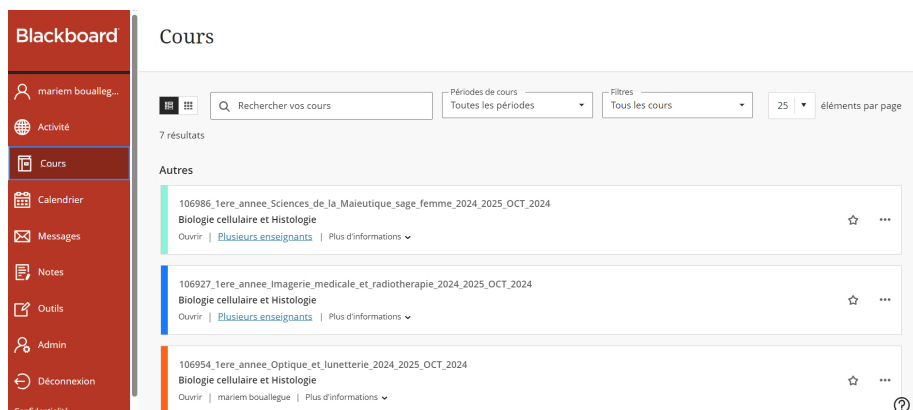


Figure 13.2 Course Navigation and Tools in Blackboard

13.4 INTRODUCTION TO LECTURIO: REVOLUTIONIZING MEDICAL EDUCATION AND PROFESSIONAL TRAINING

Since 2022, Lecturio has been introduced as an online platform (Figure 13.2). It provides high-quality medical education and professional training resources with diverse offerings for everything from basic medical knowledge in school to entry-level healthcare professions and anyone seeking to learn something about medical fields. Some of the key features of Lecturio include: (1) Expert video lectures in various medical subjects for effortless comprehension of tough topics, (2) Supplementary materials to the videos, including lecture notes, slides, and references, (3) Interactive quizzes that engage learning and reinforce outpatient knowledge, (4) An interactive space where users can connect with each other, ask common questions, share their ideas, and discuss medical topics, and (5) Tools and resources aimed at preparing test candidates for a variety of exams.

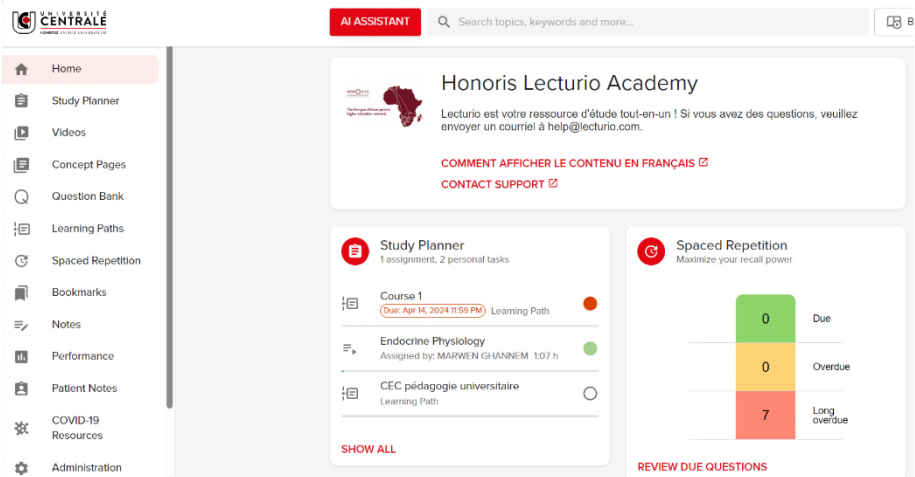


Figure 13.3 Honoris Lecturio Academy

13.5 INTEGRATION OF SIMULATION-BASED LEARNING IN HEALTHCARE EDUCATION: ADAPTING TO REMOTE TRAINING AND SKILL DEVELOPMENT

The integration of high-fidelity simulators at the Medical Simulation Center allows students to engage in practical scenarios that enhance their clinical skills and decision-making abilities. Over the past five years, nearly 8,000 students have participated in simulations, completing at least one scenario. Among them, 120 obstetrician-gynecologists have engaged in simulations related to medically assisted reproduction. During the COVID-19 pandemic, online simulation techniques were adopted via Microsoft Teams, with a learner-guided teaching method. These resources include videos on cardiorespiratory arrest, peripheral venous access, nasogastric catheterization, and slow sequence induction, complete with accompanying questions and corrections for students.

The simulation process for students in the paramedical field is now an integral part of today's educational curricula. All students in nursing, anesthesia, and midwifery programs have seamlessly integrated the simulation program as a tool to allow them to refine their technical competence. This approach promotes technical mastery and cultivates the critical thinking and collaborative skills essential to the medical profession.

13.6 DISCUSSION

Internationalization and digitalization are the two key drivers, which, taking higher education as a global entity, shall be a source of change over the years. Although internationalization and digitalization have quite different consequences, their overlapping areas have created new opportunities and challenges for universities, faculty, and students. The work of universities must absorb these lessons of developments in the context of globalization and changes in the educational environment for

the effective delivery of education to increasingly diverse student populations.

Digitalization involves the integration of advanced technologies into educational processes to incrementally develop improvements in teaching, learning, and administration. By using such learning management systems as Blackboard, online learning platforms (Lecturio), virtual classrooms, AI and automation, data-driven insights, and open educational resources (OERs), it will be able to make learning more accessible and flexible. The Université Centrale has adopted digital technologies and changed much in higher education. Starting in 2017, the implementation of platforms such as MyU and Blackboard has allowed students to smoothly work on course materials, assessments, and interactive learning exercises. The year 2024 saw more than 3,000 use Blackboard, suggesting healthy participation in digital resources meant to aid student and instructor communication (Chuang, 2018; Dziuban et al., 2018; Kwan & McKay, 2018).

Integration of high-fidelity simulators in the Medical Simulation Center enables students to enter practical scenarios that enhance their clinical skills and decision-making capabilities. Every year, more than 1,000 students completed one or two scenarios equipped with high-fidelity simulators. This approach fosters technical proficiency and cultivates critical thinking and collaborative skills essential for the medical profession (Lane et al., 2001; Ziv et al., 2006). The COVID-19 pandemic further accelerated the shift toward digitalization, as institutions rapidly adapted to online learning, highlighting the necessity of LMS in maintaining academic continuity (Treve, 2021; Hwang et al., 2020).

Student exchange programs, partnerships with foreign universities, and study abroad opportunities offer students global exposure. Internationalization fosters cross-cultural competencies, preparing students to work in an increasingly interconnected world. With more than nine nationalities represented at our university, the cultural diversity and the concept of global education are often among our top priorities (Knight, 2008).

These two trends—digitalization and internationalization—are in a kind of synergy, enabling the institution to provide an inclusive, diverse, and globally oriented learning experience. In the coming years, this fusion of digitalization and internationalization is likely to deepen. Universities that can integrate both trends into their offerings will provide more flexible, accessible, and globally relevant education.

Digitalization and internationalization are complementary forces driving the transformation of higher education. Their intersection creates more inclusive, accessible, and innovative learning experiences, preparing students for the challenges of a globalized world. However, careful attention to inclusivity, quality, and technological infrastructure is essential to ensure that these trends benefit all students equally (Jansen et al., 2020; Treve, 2021). Several challenges have to be addressed, such as the digital divide, assurance of quality, cultural sensitivity, academic integrity, verification of credentials, and faculty adaptation.

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