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THE DIGITAL TRANSFORMATION REVOLUTION

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Aysha Mohammad ABD-RABO ¹ & Sherine Adnan HASHAIKEH ²

Abstract:

In the context of sweeping social, economic, technological, and demographic changes, digital transformation is a series of deep and coordinated culture, workforce, and technology shifts that enable new educational and operating models and transform an institution's operations, strategic directions. Digital transformation is a destination that is practically mandatory for most organizations. The interconnectivity that it fosters will make the communication flow between students and teachers more fluid. It also helps to improve the relationship and promotes the best use of available resources, especially in higher education. So, the researchers shed light on digital transformation, its importance and the challenges it faces, especially in higher education institutions. Therefore, higher education institutions must keep pace with all these changes and take them into account if they want to develop and compete with their peers.

Key words: Digital Transformation, Learning Technology, Higher Education Institutions.

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¹ Researcher, An-Najah National University, Palestine, ayshe.abdrabo@stu.najah.edu, <https://orcid.org/0000-0002-8817-6443>

² Researcher, An-Najah National University, Palestine, sherinehashaykeh@gmail.com, <https://orcid.org/0000-0002-9448-9796>

Introduction:

The use of web technology has become a "legitimate activity in many areas of higher education" (Maltese,2018). There has also been a major shift in digital transformation progressively, teachers are using the digital technology during their classrooms, and they are encouraging students a lot to engage with digital technology and discover new ways to use technologies information and communications for academic purposes and not only for an academy for social communication (Grosseck & Bran,2016).

Technology: in the past and in the present

In the past the use of technology in education was a very controversial topic. Many people criticized it, (Maltese,2018) saying that modernizing education would lead to a range of negative effects in society. With time however, educational institutions started to experiment with technology in the classroom and it quickly became apparent that when implemented correctly, these technologies had a great deal of potential to improve the educational system. Today evolving technology has been at the heart of innovation for decades, , many industries have had to begin a transformation to adapt to the digital era. Higher Education institutions are no exception (Saykili, 2019).

The Proponents of the idea of a digitally native generation argue that this digital divide between generations (Ugur, 2020). has profound implications for education, and the teaching digital natives requires a complete pedagogical shift. Hence, the educators must become more creative in their approaches so as to meet the needs of and relate to these young students who think and process information in a completely different way from older generations.

What is Digital Transformation?

It is not a basic hardware or software upgrade, digital transformation is a physical and philosophical change designed to meet the ever-growing demands of students, faculty and campus to create a learning environment where everything connects. This is an ecosystem that combines technology, services and security to bridge the digital gap to create collaborative, interactive and personalized learning experiences (Marcum, 2014). The digital transformation in higher education is the application of digital technology across the university, it is critical to the future success as an institution

How does Digital Transformation in our life look like?

Digital transformation is currently hitting everyday life with great revolutionary power, it has touched all areas of our life, it has become one of the main trends and we are surrounded by intelligent systems that assist us with our daily tasks. Those living services are wrapping around us, adapting to our needs (Maltese,2018). Over the past several years, we find digital transformation in the industry sector, in various fields of science, in the occupations and business sector, in scientific research and also in higher education (Saykili, 2019).

Higher education and digital transformation

Digital transformation is the soul of any education system, not just skill, dealing with paper has become a deaf method no longer able to attract a generation brought up on digitization. Digital transformation is now becoming a necessary mean of survival as this new digital world requires educators to adapt and adopt digital technologies and methodologies and to build a new system based on a concept " Interactive digital content" (Du Toit & Verhoef, 20181).

One of the areas that have enormous potential for digital transformation is the higher education system, especially the system of university education. University education requires the development of a strategy for digital transformation, and the formation of new information and communication competencies (Marcum, 2014). This includes the modernization of IT management, which could provide an important contribution to structuring the efforts of innovation in education (Obaid, 2019).

The digital transformation will use digital technology to fundamentally change the way that many higher education services are delivered. It will encourage digital literacy across the university, set standards and principles and provide services and platforms (Türkeli & Schophuizen,2019). The changes will underpin, enable and join other higher education programs to provide a stronger focus on digital users' needs (Grosseck & Bran,2016).

The key concepts about digital transformation

There are certain basic concepts (Mahlow & Hediger, 2019) when deciding to adopt a technological solution.:

- User experience.
- Intelligent automation.
- Artificial Intelligence.
- Machine Learning.
- Cyber security.
- The Internet of Things.
- Big Data,
- Mobile Cloud IT

How to Bring Digital Transformation to higher education system (Roadmap):

people, process, technology and content, we need to start with a current assessment identify gaps and define the actions and resources required to fill gaps along these four paths, this is done through:

- Training the educational staff in building digital curricula.
- Adopting the concept of scientific commons - not doing that hinders the reuse of knowledge and slows innovation- and starting securing its requirements, such as infrastructure and various tools (technology enablement), making data available in the public domain via the Web so that other scientists can use it for new purposes (Du Toit & Verhoef, 2018).
- Focus on applied and hybrid specialties, and to be the basis for launching important and necessary scientific research worldwide (Marcum, 2014).
- Adopting the concept of interactive digital curricula and virtual universities.
- Establishing policies that clarify and support digital transformation in universities (Mahlow & Hediger, 2019).

What are the potential challenges?

While some literature indicates certain challenges in using the digital transformation (Du Toit & Verhoef, 2018), in general, the emphasis is on an encouragement and promotion of digital technology in higher education. The transformative power of digital technology for higher education is similarly widely acknowledged. Whatever the digital transformation strategy adopted, higher education may face many challenges. One of the main challenges is the definition of a strategic vision for digital transformation. The strategic vision is needed to allow the whole institution to be united in the implementation of the digital initiatives (Ugur, 2020). For this it is important a strong leadership and a specialized team that can confidently explain and implement their plans. A clear vision will make the team and stakeholders more involved and invested in the process of digital transformation. Another important challenge is the digital literacy of all stakeholders. A third challenge is meeting the new expectations and needs of the students A fourth challenge is related with the financial and technological constraints (Du Toit & Verhoef, 2018).

At the other side the use of digital technology (Du Toit & Verhoef, 2018) in higher education has a huge positive effect on various aspects of enhancing learning and teaching practices, but the ambiguity of the use of digital technology in higher education should not be ignored. The way digital technology is used is often based on a certain understanding of it. To achieve the digital transformation at higher education, a more bodily understanding of digital technology is needed. There are many benefits of digital transformation at higher education, which can be achieved by indicating the right tool and how and when use it?

The challenges can be summarized as follows:

- Adaptation: many key decision-makers are reluctant to take important steps towards digital maturity resulting in stunted growth and progress.
- Inferior knowledge or skills: to ensure an effective digital transformation, educational institutions must adopt new approaches and benefit from the
- a digital skill and fostering a culture of continuous learning (Ugur, 2020).
- lack of strategy: universities should understand which direction to take or how to form a good strategy.
- System-based compatibility: an inherent challenge with digital transformation is that many systems that educational institutes adopt are not compatible with the new digital innovations required to drive them forward. This level of incompatibility results in a

necessity to upgrade, customize or replace a current system to achieve integration, which ultimately costs time and money (Marcum, 2014).

Education and the Fourth Industrial Revolution

We stand on the brink of a technological revolution that will fundamentally alter the way we live. the transformation will be unlike anything humankind has experienced before, the response to it must be integrated and comprehensive (Pawlowski, 2009).

The possibilities of billions of people connected by mobile devices, with unprecedented processing power, storage capacity, and access to knowledge, are unlimited. And these possibilities will be multiplied by emerging technology breakthroughs in fields such as artificial intelligence, robotics, nanotechnology. We must develop a comprehensive and globally shared view of how technology is affecting our lives and reshaping our educational system (Marcum, 2014).

The Fourth Industrial Revolution caused rapid changes in all sectors of life, 75% of children entering primary school today will ultimately end up working in completely new job types that don't yet exist., this requires transforming "education "into " learning". As a result, education models have changed, which became based on transferring experiences and knowledge instead of transferring content (Türkeli & Schophuizen,2019).

Features of the fourth-generation universities

- a. Multiple and mixed courses, the digital transformation means the interdisciplinary overlap.
- b. Melting differences between education patterns, and melting difference between academic, professional and applied degrees (Mahlow & Hediger, 2019)
- c. Scientific research makes everyone capable of creativity and innovation regardless of the nature of its specialization. In case of a fourth-generation university, it is important that research results should possess significant practical value and with it we should be able to solve real problems.
- d. Governments shift from funding for the academic institution to student funding, this increases the competitiveness of enterprises (Pawlowski, 2009).
- e. Early specialization and guiding students in basic education stages to choose their majors based on their interests.
- f. Modifying curricula, teaching methods and scientific research methods.
- g. internationalization a fourth-generation university has to support mobility of students. The possession of a wide system of networks is necessary to ensure opportunities and mobility programs for students with adequate financial sponsorship. Besides openness regarding foreign students is also important (Maltese,2018).

How improve digital transformation

Digital transformation primarily needs an advanced infrastructure and technology, it needs training for faculty staff and students to use many applications and programs effectively and not just use fundamentals those application and programs, as it requires the presentation of curricula in a new way that suits this transformation (Du Toit & Verhoef, 2018). Therefore, the curricula must be rearranged and appropriate content should be designed for distance education with its good tools and methods. The success of the implementation of a shift in pedagogy is determined by the interactions of many different factors. These factors include the culture of the educational institution and classroom resources, such as equipment and materials, but also the different players involved, which include instructors, students, and communities (Türkeli & Schophuizen,2019). A successful shift in pedagogy is also based on how well the policy is integrated into the broader educational system. In addition, the levels of improvement in digital transformation depend on a wide range of variables, particularly the way in which technology is integrated into traditional teaching methods and the way lessons are communicated, it has been demonstrated that technology is one of the best tools to provide a more flexible education framework. The well-implemented digital transformation helps to get good results at many levels (Pawlowski, 2009).

The digital transformation in higher education in Palestine

When we look more closely in the Palestinian context, we find many university initiatives that have just started the digital transformation back in 2013 and still working on it.

Unfortunately, our higher education system is not working in line with the concepts of digital transformation, the classroom environments are the same to some extent those in the past years, today's learning needs are overlooked and they are partially away from digital technologies. Stakeholders in some Palestinian universities were not entirely ready. There are some challenges, for example more infrastructure needs should be met and even if we have some technologies adopted in our educational system, they are still not adopted properly well because of poor instructional design. Inequity and quality of services were also some of these challenges that stakeholders have experienced (Obaid, 2019).

Conclusion

Digital transformation is a challenge. It not only involves the installation of technological solutions but also requires users and organizations to change mindsets. The process is a challenge in itself. Not only it considers the installation of technological solutions but requires users and organizations alike to change their mindset. For the Palestinian universities, they work really hard to implement lectures via the Internet and use other tools like online activities, forums and different assessment tools as a method of digital transformation. Cognitive and emotional engagement were two aspects that were not achieved properly. Corona crisis provided a good reason to think about digital transformation and the use of the Internet, to activate the globalization of higher education. Being able to handle all the data that the university manages in one single platform, allows operations more productive. And achieve lots of benefits.

Therefore, it is not enough for a Higher Education institution to optimize internal administrative processes with technology. It is essential for its leadership to understand clearly why it needs to do this, what are the capabilities available and objectives, and the long-term consequences for expansion plans.

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