Research Article

Digital transformation at higher education institutions for the academic year (2020-2021): Departments of College of Administration and Economics, University of Basrah as a model

Asst. Lect. Arafat Nasser Jassim[1], Asst. Lect. Areej Kareem Rahman[2]

[1]Department of Management Information Systems, College of Administration and Economics, Basrah University
[2]Department of Management Information Systems, College of Administration and Economics, Basrah University
[1]Arafat.alyousuf@uobasrah.edu.iq, [2]areej.rahmam@uobasrah.edu.iq

Article History: Received: 5 April 2021; Accepted: 14 May 2021; Published online: 22 June 2021

Abstract: Due to the accelerated pace of developments in information, society and the digital economy, it becomes a fact that the digital environment requires the essential skills and competencies in order to achieve professional success. The individual development of any of them requires the availability of infrastructure, human resources and management competencies. Employment of digital transformation in higher education involves not only technology but also adopting new working methods to continue to provide user-focused services in the face of digital change. This is required in order to maintain survival in a competitive environment and to meet the needs of beneficiaries of digital services with digital skills. This research aims at identifying the level of digital transformation in the College of Administration and Economics at University of Basrah. In this research, the analytical approach and questionnaire were applied to collect research data. The study community was represented by the heads of departments, associate dean for scientific and administrative affairs, and the dean. This comprehensive and focus sample was used for being responsible for leadership and decision, and relied on qualifications, scientific level, position and years of service.

Keywords: Digital Transformation, Higher Education Institutions, Academy, Digital Technology, University Development

1. Introduction

In the second decade of 21st century, higher education institutions (HEIs) have prioritized digital transformation (DT), which is a natural and necessary process for organizations. The third technological knowledge revolution "the digital revolution" (Benavides, Arias, Serna, Bedoya, & Burgos, 2020, p. 1) is the real basis for the development of information and communication technology and the accompanying transformations in production patterns, forms of exchange and consumer. Digital technology forms the basis of modern electronic broadcasting, and accordingly the nature of knowledge and education systems has changed (as-Saudi, 2019), in addition to thoughtful changes in university centers, conditions and relationships. This leads to the necessity of bridging the digital gap in the use of modern technology and the inevitability of changing to digital universities. Therefore, higher education institutions must interact with the variables, requirements, conditions and necessities of the new reality (ben Naji, 2020). Over the past few years, different technological and social movements towards digitization have affected the system of higher education. This, in turn, has resulted in the emergence of various projects of educational innovations based on digital technologies, which are considered to be the real digital examples of transformation in higher education (Machado & Esteban, 2016). This change has obliged higher education institutions not to be individual and isolated and to deal with it with the power of integration. In this context, educational institutions strive for rehabilitating their systems, adopting strategies to develop and exploit the best opportunities and preparing the administrative and technical infrastructure with a decision of higher management encouraging it (Madhi & Abu Hajeer, 2020). This has put these institutions in the midst of digital revolution. Like all revolutions, digital transformation involves a restructuring in all systems and sectors. This digital transformation leads to significant changes in higher education and research (al-Balochia, al-Harasi, & al-Awfi, 2020). In addition to the attention to the academic staff and work to create the appropriate conditions to cope with these technological changes through training and development of skills, competencies and capabilities. This can be achieved through communicating information to students using programs (Mahmoud, 2018). These constant changes reflects the sense that the development of the combination of powerful new communications technology and huge data at a rapid rate under the daily practices of institutions leads to a high level of uncertainty (Seres, Pavlicevic, & Tumbas, 2018).

Digital implications extending to scientific disciplines, economic sectors and civil society generate non-linear correlations and changes. There are different views on technology-driven or people-focused change, the role of the public sector, civil society and larger economic forces. Digital transformation is one of the most important events in the process of developing information technology (Segura, Zamar, Moro, & García, 2020). Business in the digital age relies on technologies to maintain operational efficiency. Many academic institutions still need digital transformation and provision of high-quality digital, academic and educational services to compete with their counterparts. Hence, the College of Administration and Economics represents the university's backbone because of its large size and the large number of students at the level of undergraduate and postgraduate studies (Amin,

2018). Consequently, students' participation in scientific discussions and technological development will increase, creating new and possibly stronger relationships between academia and civil society. The Digital University is a center for technological transformations with the aim of developing the components of the educational process, including students, academic staff, study programs, management, finance and student's evaluation. It includes student learning objectives and courses of action within the university, human resources development and shaping the nature of institutional culture (as-Saudi, 2019).

2. **Research** Problem and Questions

Digital transformation obliged higher education institutions to benefit from modern technologies to be more managed, flexible at work and able to innovate. With these features, they can keep up with and adapt renewable needs faster (Amin, 2018). There is an acceleration of digital transformation in many aspects of life, including how to communicate socially, how to shop and how to teach and learn. The impact of these changes is very complex and far-reaching. In the field of teaching, interactive learning is changing rapidly in universities. The Covid-19 pandemic has led to an increase in the use of many online processes by universities with a long and diverse history. The academic staff have repeatedly had to change what they do and how they do it to accommodate the time (Rospigliosi, 2020), design and use interactive learning environments in a broad sense, including environments that support individual learners and those support collaboration between groups of learners or co-workers. The university often makes online conferences on knowledge progress (Mahmoud, 2018). Much of the scientific work is done in isolation, a computer-backed footnote, and collaborative work tools such as email, correspondence, shared files and semi-video conferencing. These tools may not have caused a significant change in researchers' practices in contrary to the increasing use of virtual conferences, replacing face-to-face gatherings. But what about the ability of universities to do so to serve the community? Here the change to the Internet may have a mixed effect (Rospigliosi, 2020). Study at universities has turned to digital and e-learning and the use of software and modern technologies. The Faculty of Administration and Economics has faced a major challenge to shift from traditional to digital teaching and provide integrated infrastructure for that transformation with the training of educational staff and students for this transformation in a way that suits the stage and the status of the college and its scientific history (as-Saudi, 2019). Higher education institutions must cope with huge data, and analysis tools and techniques as key devices of evidence-based and data-based forecasting decisions. Digital transformation of higher education institutions is critical to their future success. We focus on the data aspects of this transformation (Mahmoud, 2018), bearing in mind that the data itself is an asset, while the real challenge is to convert that data into value. Accordingly, this main question arises: "Is there an integrated readiness for the College of Administration and Economics in all its departments to digital transformation of teaching and other educational and research services? The following points are derived from this main question to be discussed in the analysis section:

1. The availability of the infrastructure for digital transformation in the college in the field of education and other services.
2. The availability of academic staff and maintenance staff in the college that commensurate with the volume of use.
3. The availability of the financial and administrative environment to lead this digital transformation in the college, especially support of the higher management.

3. Research Objectives

1. The research aims mainly at determining the readiness of the College of Administration and Economics and its departments for digital transformation through the availability of infrastructure.
2. Measuring the availability of technical infrastructure in the college and its departments to be ready for digital transformation.
3. The extent to which academic staff are qualified for using technology tools through training and development.
4. Demonstrating the contribution of the higher management to supporting digital transformation of the College.

4. The Scientific and Practical Significance of Research

1. Under the current circumstances of Covid-19 disease and the difficulties faced by the college in relation to digital change and transformation, this topic is considered new and has received researchers' attention.
2. Practically, this study will provide a vision on the employment plan for each department, obstructions and achievements during the first academic year of use to keep pace with national efforts for developing information and communication systems at the College.

3. The study will contribute to drawing a future plan for the college to develop capacity, exploit opportunities and eliminate weaknesses, benefiting the decision makers through directing them to the importance of digital transformation and its requirements for university development.
4. This study is at the core of researchers and academics' attention and thus it shall be expanded in the future to include other colleges and make comparisons, benefiting from its conclusions and recommendations and generalize them to convey the college experience to other colleges.

5. Theoretical Framework

The Concept of Digital Transformation and Its Importance

Digital technologies have changed the lives of people, businesses and society. Higher education systems and institutions are particularly affected by digital transformation. Academics and people working in or with higher education institutions in general are increasingly aware of these transformations (Madhi & Abu Hajeer, 2020). For example, there is a strong positive sense on digitization from the point of view of scientists and researchers regarding the promotion, cooperation, efficiency of scientific research and the impact of digital transformation. Technologies may affect the comprehensiveness of research and sharing opportunities with the public. Accordingly, the dimension of digital transformation and capabilities within a framework that considers digital innovation as a way for people interaction, learning, production, motivation and leading digital transformation. It creates opportunities for new markets and business models to emerge along with new products, directly affecting audience efficiency. Digital transformation affects and changes important aspects of education and research (Romanova, Sabirova & Sidorova, 2020), participation and management activities of higher education institutions. The education system as a whole strive for adaptation and development to take advantage of new technologies and tools to develop strategies and procedures to play an active role in the digital transformation process. Higher education institutions can become an engine of digital innovation (al-Aqbali, 2019), including providing skills in general to transfer this change model. For higher education institutions, dealing with digital transformation means introducing new digital processes into them, adopting new digital teaching methods and tools, helping students achieve the skills and competencies needed to work in digital communities and economies or having open scientific policies. It also means adopting a broader vision of their role as actors in digital innovation for higher education institutions (Seres et al., 2018). This is done through appropriate policies and support from the government. The penetration of technology into society has changed the nature of services and products, the importance of time at work, as well as many changes in the learning processes themselves. Thus, we can say that the new technology has formed a new scenario in the field of education. In this context, interdependence emerges as a learning theory of the digital age that tries to interpret complex learning in a constantly evolving digital social world (Romanova et al., 2020). The educational community has taken into account this theory, which some consider a model derived from computer science, as it is based on the concept of the network with connections to identify learning. Here, the principles of communication are based on the fact that learning and knowledge recognize the diversity of opinions and that the relationship between sources of information has priority, making continuous learning easier. Similarly, the ability to see the connections among topics, ideas and concepts is essential. In addition, the decision-making process itself is a learning process, i.e., choosing what to learn and the changing meaning of the information received (al-Balochia et al., 2019). Students have grown up with the Internet and are interacting normally on social networks, especially using mobile devices (smartphones, tablets and laptops). It is expected that they can also use these devices in their classes at university. They use technology intensively and expect some technological standards at the university that resemble other aspects of their lives (Bond, Marín, Dolch, Bedenlier, & Richter, 2018). With this technology, they feel that education is important for their future and their jobs. The spatial and temporal boundaries between man and his work and between man and another man have collapsed. Therefore, it becomes necessary for the educators to pay attention to this issue and then prepare their students and learners about these new releases of technology, whether it is a distant learning, group learning, learning by participation or learning by correspondence, to many broader horizons that are formed and changed all the time. Digital transformation of higher education institutions is a technological process, reflecting the organizational changes that are primarily resulting from the development of digital technologies (Seres et al., 2018). It is defined as a profound transformation of business activities, organizations, processes, competencies and models to maximize the transformation of changes and opportunities for the technology mix and its accelerated impact on society in a strategic way with priority (Benavides et al., 2020).

Digital Transformation and the Impact of Adopting New Technologies on Higher Education Institutions

Over the past few years, higher education has felt the impact of various technological and social trends towards digitization that have led to many educational innovation projects based on digital technologies. These innovations (Bejinaru, 2019) should not be considered as being isolated and constant phenomena, but should be seen as examples of a real digital transformation of higher education. However, this is not limited to higher education only,

but also many other sectors such as journalism, banks, television or the music industry, which are also affected by digital transformations as they have been disrupted in many cases. The main argument in this research is that the study of e-innovation in university teaching must be dealt with through a full analysis of digital transformation taking place in higher education institutions (Seres et al., 2018), which are very complex institutions. Only by adopting this organizational perspective, one can get a full vision and overview of the changes and challenges facing universities. Digitization means the conversion of material products into digital resources. Digitization is a radical development of organization function using modern digital technologies in line with the objectives of the organization and customers (Amin, 2018). Higher education organizations can transfer their products and processes to the cloud or virtual network to allow access to more beneficiaries, as well as save costs or reduce environmental impacts. Digitization is a form of material removal. Converting into digital technology allows companies to take advantage of emerging trends, such as huge data or the Internet of Things. Digitization is increasingly affecting the lives of individuals and the work of institutions, so that it has become rare to find an institution or person with no relation to digitization (Rospigliosi, 2020). This has created the term "digital illiterates", referring to people who do not know how to deal with digital information technologies. The primary objective of the digital transformation process in higher education is to redefine education services and to redevelop the operational processes of higher institutions (Bond et al., 2018). There are three possible approaches to achieve this objective. The first involves converting the service first, focusing on changing and redefining services before making major improvements and changes to processes, i.e., activities within operations. The second is the first transformation process, which aims to identify the new and modify current processes, activities and digital processes, as a basis for redefining the highest education services. The third is the service operating group, which includes an integrated transformation through the systematic correlation of both previous approaches (Seres et al., 2018). Digital transformation integrates digital technology in all aspects, requiring changes in technology, culture and processes, among others. In order to take advantage of emerging technologies and rapidly expand human activities, organizations must reinvent themselves and transform all their operations (Rospigliosi, 2020), so that any technology innovation strategy and corporate culture modification are among their priorities. Digital transformation refers to changes associated with digital application technology in all aspects of human society. Digitization is also defined as the ability to convert existing products or services into digital variables, thus providing advantages for the concrete product (Bejinaru, 2019). With regard to time, digital transformation is the basis of the fourth industrial revolution, because of the technological change it has brought about, involving the adoption of new skills for individuals, as well as the restructuring of institutions, as these transformations take place in the world of industry and work. Accordingly, digital transformation, through digital literacy, can make many interventions that allow for the widespread use of digitization, with new learning spaces including huge data and artificial intelligence (AI) as educational resources, adding value to the interconnected issues of higher education (Bejinaru, 2019). Thus, huge data allows students to discover trends in new teaching methods, such as adaptive learning, which generates personal education derived from the collection of student's data on age, habits or behavior. The university strategy should also address how to respond to changes in digitization (Bond et al., 2018) because it is not just about teaching the activity that is affected, but there are changes in internal processes that must be more flexible to comply with expectations by both students and university specialists themselves (academics and administrators). People who work at many universities tend to be proud of their century-old traditions but hope that management systems are more modern than the foundation age (Menendez, Machado &Esteban, 2016). These tools help teach at a lower cost, enhance users' abilities and create a personal profile for the student. On the other hand, higher education institutions use artificial intelligence to personalize the student admission process and identify applicants most likely to succeed in their grades and certificates. In addition, this technique, among other things, allows helping the teacher to determine the student's progress, or to control the teaching process if s/he notices that there is a gap in understanding (al- Aqbali, 2019). On the other hand, robots, automation and other technological learning tools change our way of life, work and interaction. Therefore, educational institutions face the challenge of maintaining a learning system that implements a culture of continuous learning and learning led by emerging technologies (Bond et al., 2018). In addition, digital transformation has the ability to lead practical and creative education, and to include new educational models for students and teachers and the entire educational process, and to bet on creativity and entrepreneurship, as it represents an opportunity to increase educational and productive coverage of institutions (al-Balochia et al., 2019) in response to a growing number of challenges that will lead higher education institutions to integrate digital technologies into their business much more than ever before. This will result in fundamental changes in how business works and how it delivers value to its customers. There are many aspects of the digitization of higher education institutions, so the digital transformation in universities has become a contemporary trend that corresponds to the nature and requirements of the time (Benavides et al., 2020) and an essential condition to build knowledge in society. The process of employing that knowledge becomes the main way for achieving development. Building a knowledge society mainly requires advanced university education, opening a room for science and technology, thought of work and production, confidently planning for a prosperous future, contributing to creativity and innovation (al-Balochia et al., 2019), preparing staff, and building knowledge partnerships with different institutions at national and

international levels. With the spread of the Internet, there is a growing awareness of participation in the knowledge community at the global level. Moreover, digital education has become an effective tool for digital transformation. This transformation needs an effective digital management system, which facilitates the process of making the right decisions at the right times. All of this require universities to work on a similar conversion in educational and administrative practices in order to achieve the objectives of digital transformation (Amin, 2018).

Digital Transformation in Higher Education: Current Trends

Digital learning at university is distinguished from traditional learning in terms of the educational medium or the power of the means of communication represented by digital technology. In fact, digital technology takes many forms, most commonly used among staff and students, such as audio and image recording tapes (Mahmoud, 2018), broadcasting of audiovisual satellite, CDs, and the possibility of the internet expert replacing traditional universities and colleges as a source of learning for life (as-Saudi, 2019). The digital transformation affects higher education on two main parts of the business departments:

a) The transformation of services emphasizes on producing new learning products and converting existing ones into digital products. This generally indicates transforming offline lectures into video lectures, and making digital texts and tests. Furthermore, it contains providing students with digital means of communication for (Mahmoud, 2018).

b) Transforming processes will essentially require digitization of all joint processes of educational institutions, such as student admission, registration in programs, courses, examination, program development and quality assurance. In addition to support services such as study planning, facilities management, teacher allocation, scheduling, etc. and emerging techniques in higher education. Directors of higher education are already making serious investments in the Internet of things (Benavides et al., 2020). It defines learner-centered or student-centered learning, including teaching methods that change from focusing on staff to focusing on the student as the core of the learning process. It also aims at developing the significance of student independence and self-reliance, making him responsible for learning (as-Saudi, 2019).

There are many smart things around us including smartphones, watches, cars and homes, but what about a smart campus? The Internet of Things provides many advanced data and helps automate many useful processes. Smart thermostats can balance the temperature inside the building by adapting to the external and internal situation. This will save money for universities and colleges and create a more comfortable environment for students and teachers (Benavides et al., 2020). Future campus may convert into small smart towns through installing smart media kiosks, tracking vehicle and pedestrian traffic to improve load and use smart electricity grids. IoT-based security solutions, including remote monitoring and authentication based on biometrics, can also be implemented (Bejinaru, 2019). Blockchain is a modern technology used to store and transmit information in a distributed, safe and effective way. Educational facilities may use blockchain to store students' data, such as personal data and learning performance. The advantage of this technology among other things is security. Furthermore, blockchain is commonly used to verify authenticity, so fraud will be significantly reduced (Segura et al., 2020).

The Prospects for Digital Transformation in Higher Education

Digitization no longer refers to department of information technology at university. It means having buildings equipped with computers and printers, or keeping Wi-Fi running. The role of digital system now should be realized in all departments and jobs. Nowadays, there is a global competition among universities for students, academics, finance and opportunities of employment. Theoretically, institutions of traditional education someway compete against different sources of information including Wikipedia, YouTube, massive open online courses (MOOCs) and open educational resources (Segura et al., 2020), broadcasts, videos, blogs and online seminars. So, can universities compete with cheaper e-learning providers? As the university is increasingly viewed as a means of employment, most of students claim the useless of massive student loans; instead, they choose low-cost colleges, online courses, and private e-learning. For example, Lecturio provides online videos for more than (200,000) medical students. It employs professors as independent production partners from (6) of the world's top (11) medical schools, including Harvard Medical School, Yale School of Medicine, UCLA, The University of Western Australia, School of Medicine at Johns Hopkins University and Columbia University. As for School of Physicians and Surgeons and London University College, they can claim credibility. Moreover, students aiming to have accredited qualifications should keep in mind that e-learning is often limited to sectors of medicine, law and engineering. Additionally, the experiences and relationships acquired at university will always compete efficiently with online equivalences. Therefore, digital technology must be employed at universities to add more value to their systems. They can invest the payments of undergraduates in digital campus where digital applications increase and strengthen service items, ease the material for teachers and lecturers to be more effective, improve the experience of students, make the campus safer for everyone, and provide more information to guests and business partners.

Currently, Universities possess a tremendous amount of non-open potential. Having the appropriate digital strategy, it is time now to reveal this potential and employ digital platforms to make more value for students, and compete more efficiently against options of e-learning (Segura et al. 2020).

Practical Section

The College of Administration and Economics was established at Basrah University in Iraq in 1970-1971. Its first dean was Prof. Dr. Ghaleb Al-Dawoodi. It currently has six scientific departments: Business Management, Economics, Accounting, Statistics, Financial and Banking Sciences, and Management Information Systems. The duration of study in it is four years, after which the student is awarded a bachelor's degree in business administration, economics, accounting, statistics, financial and banking sciences and management information systems, which was recently established in 2018. Since 1982, the College has been awarding a master's degree in administrative, economic, accounting and statistical sciences. In addition, it has been awarding a Doctorate in these disciplines since 1987. Postgraduate studies meet the needs of the college and corresponding colleges at other Iraqi and Arab universities with teaching staff.

The Survey

6. Method and Procedures

The research relied on the design of a questionnaire to determine the requirements of digital transformation in the College of Administration and Economics. The questionnaire included items on the requirements and mechanisms of digital transformation. These requirements were the higher management support for digital transformation, appropriate trends for transformation, the required technical infrastructure, the required organizational human resources, and appropriate administrative and financial environment. The questionnaire was distributed to (130) respondents, who were asked to choose one answer out of five including strongly agree, agree, neutral, disagree, strongly disagree. There were (88) forms returned. Then, the questionnaire was assessed and its data were inserted in the computer, using (SPSS) to determine frequencies, relative weights, weighted mean and arithmetic mean of items, to arrange them from the respondents' point of view. Hence, (6) forms were excluded for being inappropriate for analysis. Thus, the number of questionnaire forms suitable for analysis was (82).

Research Community and Sample

The study community included all instructors, associate dean, and heads of departments in the College of Administration and Economics at University of Basrah. Table (1) presents the distribution of research sample according to gender, scientific rank and years of experience.

Table 1: the distribution of research sample according to the study variables

Main variables	Sub-variables	Number
Gender	Male	**33**
	Female	**49**
Scientific rank	Assistant lecturer	**52**
	Lecturer	**23**
	Assistant professor	**6**
	Professor	**1**
Years of experience	Less than 15 years	**41**
	16-25	**33**
	26-35	**7**
	36 and more	**1**

Results and Discussion

To answer research questions, the arithmetic mean, standard deviation, relative weight, and rank were calculated, as shown in the following tables.

Table 2: arithmetic mean, standard deviation, relative weight, and rank for items of "**the higher management support for digital transformation**"

No.	Items	Arithmetic mean	Standard deviation	Relative weight	Rank

1	The college administration allocates the right time towards digital transformation efforts of all college transactions	**3.02**	**0.93**	**0.64**	**1**
2	The college administration undertakes the planning process for digital transformation at university	**3.01**	**0.88**	**0.62**	**2**
3	The college administration considers digital transformation in its business and transactions a priority in its future objectives	**2.92**	**0.77**	**0.57**	**4**
4	The college administration provides a special budget to develop the quality of its electronic services as an entry point for digital transformation	**2.90**	**0.85**	**0.58**	**3**
5	The college administration adopts all creative initiatives seeking to implement digital transformation at College	**2.74**	**0.65**	**0.54**	**5**

Table (2) shows that the arithmetic mean ranged from (2.74-3.02) as answers to item (1) ranked the first with (3.02) while the fifth item was the last with (2.74). In the item of the higher management support for digital transformation, there is a deficiency in providing the adequate financial budgets for the advancement and continuous development at the present time. This requires the university to keep pace with the latest global technology in order to generate knowledge and publish it, and encourage staff participation through creative initiatives that seek to implement digital transformation.

Table 3: arithmetic mean, standard deviation, relative weight, and rank for items of "**appropriate trends for digital transformation**"

No.	**Items**	**Arithmetic mean**	**Standard deviation**	**Relative weight**	**Rank**
1	The college has clear short-term objectives for digital transformation in education	**3.47**	**0.83**	**0.69**	**2**
2	The college is working to understand its internal environment (strengths and weaknesses) related to its ability to digital transformation	**0.53**	**0.84**	**0.70**	**1**
3	The college seeks to develop the transformation of threats into opportunities that will be utilized in the future in the process of digital transformation	**3.40**	**0.82**	**0.68**	**3**
4	The college works to study and understand its external environment and the opportunities and threats that may surround it if it implements the process of digital transformation	**3.33**	**0.81**	**0.66**	**4**
5	The college works to spread the culture of electronic distinction at all academic and administrative levels	**2.80**	**0.77**	**0.56**	**5**

Table (3) reveals that the arithmetic mean ranged from (2.80-3.53) as the second item ranked the first with (3.53), while the fifth item was the last with (2.80). The researchers attribute the result to that the College puts within its concern an understanding of its internal environment represented by strengths and weaknesses through its potential and the control of weaknesses. It also works to enhance its strengths. Spreading the culture of electronic distinction needs further support and attention of the university by informing the beneficiaries of the changes that are taking place continuously within the university and spreading the culture of continuing education and training.

Table 4: arithmetic mean, standard deviation, relative weight, and rank for items of "technical infrastructure required for digital transformation"

No.	Items	Arithmetic mean	Standard deviation	Relative weight	Rank
1	The college provides high-tech and modern computers to benefit from the information	**4.02**	**0.88**	**0.80**	**3**
2	A communication network is available to accommodate the services provided in the college	**4.04**	**0.92**	**0.80**	**2**
3	Technical support services for programs and electronic transactions are available continuously	**3.31**	**0.40**	**0.66**	**5**
4	Educational computer applications and social media are used at work within the college (WhatsApp, Facebook...)	**4.05**	**0.93**	**0.81**	**1**
5	There is coordination and interconnection between the internal computers in the college	**3.86**	**0.89**	**0.77**	**4**

Table (4) states that the arithmetic mean ranged from (3.31-4.05) as the fourth item ranked the first with (4.05), while the third item was the last with (3.31). The researchers explained that despite the adoption of educational computer applications and modern means of communication in administrative and academic work of the best features for any institution that wants to be at the top rank, a few technical continuous support for programs is provided and this negatively affects the work of the University.

Table 5: arithmetic mean, standard deviation, relative weight, and rank for items of "organizational human resources required for digital transformation"

No.	Items	Arithmetic mean	Standard deviation	Relative weight	Rank
1	The college has a sufficient number of qualified specialists to develop its IT infrastructure	**2.72**	**1.06**	**0.54**	**4**
2	The higher management at the college pays attention to training employees and developing their capabilities in the field of digital transformation and electronic educational services	**3.01**	**0.87**	**0.60**	**2**
3	Consulting bodies and experts are used to provide advice in the field of digital transformation implementation	**2.92**	**0.76**	**0.58**	**3**
4	The college allocates an effective incentive system for the distinguished, which encourages the employees to move quickly to the application of management by electronic means	**2.67**	**0.93**	**0.53**	**5**
5	Opportunities are available for all employees to learn the skills of dealing with modern technologies and digital transformation	**3.03**	**0.87**	**0.61**	**1**

Table (5) indicates that the arithmetic mean ranged from (2.67-3.03) as the fifth item came at the first place with (3.03), while the fourth item was the last with (2.67). The researchers explained that this result is according to respondents' opinions who believe that there are opportunities for all workers to learn the modern technical skills necessary for digital transformation. Therefore, without the human element the college will not be able to achieve its objectives even if it has the latest equipment, machinery and electronic devices. This requires an incentive system, which encourages the speed in applying digital transformation.

Table 6: arithmetic mean, standard deviation, relative weight, and rank for items of "the appropriate administrative and financial environment for digital transformation"

No.	Items	Arithmetic mean	Standard deviation	Relative weight	Rank
1	Digital transformation can be implemented under the current organizational structure of the college	**3.76**	**0.90**	**0.75**	**4**
2	There is a clear documentation of the procedures for how to provide electronic services	**3.93**	**0.93**	**0.78**	**2**
3	The college provides the necessary financial support for hardware and software maintenance	**3.48**	**0.75**	**0.69**	**5**
4	The college is keen to purchase the electronic technologies necessary to implement digital transformation	**3.82**	**0.77**	**0.76**	**3**
5	The college employs financial allocations to purchase information protection systems	**3.98**	**0.63**	**0.79**	**1**

Table (6) demonstrates that the arithmetic mean ranged from (3.48-3.98) as the fifth item ranked the first with (3.98), while the third item came in the last place with (3.48). Despite respondents' approval towards the college's employment of financial allocations for purchasing protection systems like antiviruses that help protect information and data from penetration in the light of technology revolution, especially after the spread of attempts to penetrate, this matter requires more financial support for the maintenance of hardware and software in the case of failure or suspension. This always requires the university to perform maintenance procedures in order to continue, succeed, and achieve the desired objectives.

7. Conclusions

1. E-learning programs will not be in the short term a substitute for the prevailing methods at the university education but complement them. These programs can be used to make a positive impact on the level of learning skills among academic staff and students.
2. Weakness in the higher management support to provide special budgets for developing the quality of its services that strengthen the concept of digital transformation for students during the teaching process at university.
3. Weakness of the culture of electronic distinction, which reflected that the college is in the primitive phase of digital transformation, and still fails to provide the necessary components for spreading this culture among all academic and administrative levels.
4. Supporting the infrastructure and using the educational computer applications and social media at work.
5. The college's failure to allocate rewards to distinguished staff in the field of e-teaching.

8. Recommendations

1. In order to implement a successful digital transformation, higher education institutions must develop a wide range of capabilities in their field, depending on the educational programs whereby they present their projects and their strategic vision.
2. A lot of attention is required for all means, thus easily joins the essence of our activity. This is a strong motivation for organizations such as higher education institutions to reconsider them, to review their strategy and even upgrade their vision and not remaining restricted to the past. Unlike business organizations that lead digitization to reduce entry barriers and disrupt current value chains, industry structures and business models, higher education institutions have an insurmountable field advantage.
3. The college's management adopts the importance of using e-learning in skills development and helping the academic staff to shorten the time and effort to deliver the scientific material to the student through clear and binding guidance using learning technology.
4. The necessity to provide appropriate software, equipment and educational materials for use in teaching the curriculum and thus help the academic staff to use technology and be a complementary part of their teaching and application work.
5. Attention to planning, design and development of curricula and courses at different stages of learning in a digital way to transform educational approaches from traditional to digital.

6. Following the experiences of developed countries in the field of digital transformation and smart educational technologies, especially to employ these technologies in smart learning in the future.
7. Work to transform the entire educational system into a digital education system.

References

1. Al-Aqbali, H. (2019). The requirements for converting into digital learning for young people in the Arab world. *Educational Journal*, 66, pp. 412-434.
2. Al-Balochia, N., Al-Harasi, N., & Al-Awfi, A. (2020). Digital transformation in Omani institutions. *Journal of Science and Technology Studies: Arabian Gulf Branch, 1*(1), pp. 1-15.
3. Amin, M. (2018). Digital transformation in Egyptian universities as a requirement for achieving the knowledge society. *Journal of Educational Management*, 19, pp. 111-117.
4. As-Saudi, R. (2019). A comparative study of some foreign and Arab digital universities and the possibility of benefiting from them in the Arab Republic of Egypt. *Journal of the College of Education, 4*(34), pp. 447-612.
5. Bejinaru, R. (2019). Impact of digitalization on education in the knowledge economy. *Management Dynamics in the Knowledge Economy, 7*(3), pp. 367-380.
6. Ben Naji, F. (2020). Digital transformation in Arab universities: Iraqi university as a model. *Journal of the College of Economics for Scientific Research, 1*(6).
7. Benavides, L., Arias, J., Serna, M., Bedoya, J., & Burgos, D. (2020). Digital transformation in higher education institutions: A systematic literature review. *Journal Sensors*.
8. Bond, M., Marín, V., Dolch, C., Bedenlier, S., & Richter, O. (2018). Digital transformation in German higher education: Student and teacher perceptions and usage of digital media. *International Journal of Educational Technology in Higher Education, 15*(48).
9. Farhat, A., Farhat, N., Abou Yassine, W., Halat, R., & El Khatib, S. . (2021). University Instructors' Perceptions toward Online Teaching at the Onset of the COVID-19 Outbreak in Lebanon: A Descriptive Study. Middle Eastern Journal of Research in Education and Social Sciences, 2(2), 37-57. https://doi.org/10.47631/mejress.v2i2.243
10. Madhi, K., & Abu Hajeer, T. (2020). The readiness of private Palestinian universities towards digital transformation. *The first international conference in information technology and business (ICITB)*.
11. Mahmoud, W. (2018). Elements of academic human resources development at Binha University in the digital age: The reality and scenarios of the future. *Journal of the College of Education, 2*(90), pp. 1-89.
12. Makhzoum, V., Berri, A. ., & Ajami, Z. . (2021). The Role of Teachers' Digital Communication Skills in the Success of the Distance Learning Process in Private Universities in Lebanon. Middle Eastern Journal of Research in Education and Social Sciences, 2(1), 16-30. https://doi.org/10.47631/mejress.v2i1.120
13. Menendez, F., Machado, A., & Esteban, C. (2016). University strategy and digital transformation in higher education institutions: A documentary analysis. *Int. J. Adv. Res. 4*(10), pp. 2284-2296.
14. Romanova, N., Sabirova, Z., & Sidorova, O. (2020). Digitalization of higher education in the context of information inequality. *Journal of Physics: Conference Series 1691*, doi: 10.1088/1742-6596/1691/1/012099.
15. Rospigliosi, P. (2020). Digital transformation of education: Can an online university function fully? *Interactive Learning Environments, 28*(8), pp. 945–947.
16. Segura, E., Zamar, M., Moro, J., & García, G. (2020). Sustainable management of digital transformation in higher education. *Global Research Trends*, doi:10.3390/su12052107 www.mdpi.com/journal/sustainability
17. Seres, L., Pavlicevic, V., & Tumbas, P. (2018). Digital transformation of higher education: Competing on analytics. *Proceedings of INTED Conference*, 5th-7th March 2018, Valencia, Spain.