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Roles of Digital Transformation Skills in Enhancing the Efficiency of Job Performance

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Abstract

Digital transformation is a complex and demanding process that requires the commitment of all the company's resources. Thus, this study spotlighted the knowledge of digital transformation skills and its roles in raising the efficient functionality in dealing with electronic systems, as well as the positive effect on the employees and the university as an environment. Also, the challenges and difficulties of digital transformation skills that are faced by the employees, and to what extent the employees know about it were recorded. Further, the relationship between digital transformation skills and the efficiency of career performance at the University was identified. To achieve the previous aims, the researchers used the case study approach and field study method based on an interview tool, conducted on the maximum diversity sample which consisted of 10 human resources employees. This study's results revealed that the employees sample had strong knowledge about applying digital transformation skills using electronic systems, and their levels of functional performance in applying digital transformation skills were increased. In addition, the available electronic systems have contributed effectively to improving employee performance. Moreover, the proportion of constraints faced by the employees was moderate, and the existing electronic systems received a high degree of positive evaluation in terms of their effectiveness. The study recommendations are to digitize all the current administrative procedures and enhance the awareness of administrative employees about the positive roles of digital transformation by improving the available infrastructure and existing systems to suit the technological development in terms of speed, performance, and suitability to business needs.

Discipline: Management (HRM), Information Technology.

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1 Introduction

The development in information and communication technology and the rapid spread of the Internet with its various applications contributed greatly to the multiplication of human knowledge, especially scientific and technological knowledge (Jessup and Valacich, 2017). The development of the technical process and several new concepts such as digital transformation, distance education, virtual universities, e-education, distance training, digital library, and other modern concepts and developments have become the features of the modern digital environment (Jessup and Valacich, 2017, Kolagar et al., 2022). The model of electronic digital transformation and the application of its skills were applied by educational institutions ((Pucciarelli and Kaplan 2016, Menendez et al., 2016, McCowan 2017; Sperling 2017). Higher education and its employees tried to use integrated approaches that included mechanisms and practices to ensure the achievement of high-quality technology. As well as, increasing their capabilities and skills available to serve and develop the technical sector (Gisbert and Bullen, 2015). Technological development has led to the emergence of new methods and skills that include the integration of multiple technologies that contribute to employing digital transformation skills to achieve the desired goal for each section (Al-Adwan and Almashaqba, 2012, Haines and Lafleur, 2008, Rahman and Hussain, 2011, Saleem et al., 2011).

Digital transformation is defined as investing in technology to transform traditional work into electronic so that the vital and basic services associated with serving individuals, institutions, and various investments are transformed from their traditional form to the smart electronic form, relying on modern and advanced technologies (Abolhassan, 2017). It has become important to consider digital development as an effective and important tool to move from traditional paper-based work to digital transformation based on the computer and the Internet through electronic systems and programs. Its role is in facilitating the process of exchanging information and data without being exposed to spatial or temporal barriers in all sectors and institutions such as education, health, government, and financial services (Kolagar et al., 2022). Therefore, raising the efficiency of job performance in dealing with electronic systems is one of the modern administrative trends that contribute to improving dealing with technical and administrative systems significantly in educational institutions through measuring digital transformation skills. This also achieves excellence and distinction in the quality of digital and technical services provided. Moreover, digital transformation is one of the most important requirements in the Kingdom's Vision 2030, as it is considered one of the most necessary tools to facilitate the process of providing services digitally and the possibility of completing them electronically. From this principle and based on what was mentioned before, the skills of digital transformation are divided into three levels, Basic skills, Intermediate skills, and Advanced skills. Basic skills, including using the keyboard, word processing, managing files on computers, and using e-mail while Intermediate skills include desktop publishing, digital graphic design, and digital marketing but Advanced skills

include artificial intelligence, big data, Cryptography, Cyber Security, and the Internet of Things (Creswell, 2012, Loonam et al., 2018, Lorna, 2018, Kő et al., 2022).

In light of this, electronic systems administrators must adopt digital transformation skills, as these skills are among the necessary requirements for most educational organizations and their employees. Also, identifying job performance helps to improve the work environment (Jorgenson, 2001, Al-Aaama 2008, Saidi et al., 2019, Bin Naji, 2020). In addition, the development of the organization's performance depends on the principle of building a vision and moving from theory to application and practice (Al-Shammari, 2018, Boateng et al., 2020). The goal of digital transformation at the university has been gradually implemented since 2012 when it launched the slogan "Paperless University" and this contributed to reducing time and completing electronic transactions for raising the efficiency of job performance. From this point of view, this study aimed to highlight the skills of digital transformation by looking at the latest studies and literature that dealt with this aspect and focusing on the role of skills in raising the efficiency of job performance in dealing with electronic systems. The current situation in the university's administrative and technical staff was studied to measure their digital transformation skills, analyze them and conclude what serves the case of the study.

2 Materials and Methods

This study used the qualitative approach, specifically the case study approach, which is defined as a collection method using personal interviews and summarizing a large amount of information. The case study was chosen with the belief of its effectiveness in order to obtain a deep understanding of the research problem, in addition to what it has in enabling the researcher to describe and analyze the research problem effectively compared to other research methods.

2.1 Variables of the Study

The independent variable is the digital transformation skills while the dependent variable is job performance efficiency.

2.2 Study population and Sample

The population of this study consists of university employees. To better answer the interview questions, this study's sample had the maximum diversity due to intended characteristics related to the sample members such as experience, specialization, and qualification. The studied samples consisted of 10 members of the human resources staff.

2.3 Data Collection Procedures

To answer the questions of the study, the current study used a review of job description documents and compared them to the nature of the work of the sample members, in addition to an individual interview whose questions were semi-open, in order to know the extent to which employees are familiar with digital transformation skills and their role in raising the efficiency of job performance in dealing with the electronic systems of universities. The practice of digital transformation skills in the university's electronic systems and dealing with them, the most

important challenges of digital transformation skills that may face university employees, the extent of familiarity with the basics of using e-mail, and the efficiency of job performance focused on the impact of digital transformation skills on the efficiency of job performance, and the challenges of electronic systems that affect job performance.

The researcher identified several places for the interview, due to the presence of the sample in their workplace, such as the archive room in which the interview took place, where it was quiet and free of distractions, the secretarial room as well, and the technical support room. Physical preparation was used in the audio recording procedures in order to accurately record the information. The participants were selected according to the sample of maximum diversity, where the age, qualification, specialization, experience, and job title were recorded. This study gave the participants the freedom to answer, whether in text or audio recording, according to the time available to them. They were also told to hide their names and their confidentiality and to give them digital codes in the interview records in order to preserve their identity Ensuring confidentiality, privacy, and credibility of participation were observed, and the possibility of their withdrawal from participation if they wish to do so, in order to ensure that answers are obtained without any pressure. The researcher designed a sample interview protocol, which was eight pages long and contains the following: The purpose of the interview. The amount of time required for the interview ranges from 30 to 45 minutes. Each question with space for writing the answers. Also, the researcher thanked the participants for their time during the interview.

2.4 Ethical Approval

The researcher applied for approval to facilitate the researcher's task to the institution to which the study sample community belongs. The research also gave the participants the freedom to participate and withdraw at any time and determine the appropriate time to interview according to their circumstances. The name of each participant was not mentioned, and the participants were informed of the confidentiality of their information and the lack of any consequential benefits or job losses, but their use is limited to achieving the objectives of the study.

2.5 Data Analysis Method

In this study, the research adopted the general method of qualitative research as indicated by Fossey et al. (2002) or the basic qualitative analysis, as called by (Creswell, 2012), where qualitative data are collected and then analyzed for central topics. The analysis procedures were as follows: The data from the study sample, in addition to writing the audio data, were collected. The next step was to subdivide all the text and audio data on the Word program and organize it so that each interview is separate from the other. Initial coding was added for each response, and after completing the coding process, similar ideas were grouped together, and classified the sub-categories into main categories as groups, and gave each group a code that helps in extracting the results of the study. To improve the accuracy, credibility, and validity of the data analysis reached

by the researcher, the explanations were presented to the participants to verify that they were correct and covered what they had talked about.

3 Results

A detailed description of the results of the data obtained through the research tool which was an interview was represented. The used questions revolve around the extent to which administrative staff is familiar with skills in digital transformation at the university and the role of digital transformation skills in raising the efficiency of job performance in dealing with electronic systems.

Regarding the familiarity of the employees of the university with digital transformation skills:

The interviews revealed one topic related to the extent to which employees are familiar with digital transformation skills, which is presented in the following element:

The level of digital transformation skills among university employees (through practice in technical work, electronic systems, technology projects, difficulties, and challenges) was improved. It is clear from the researcher's interview with the university's employees that they have a high ability to perform the work covered by the digital transformation systems, as it is clear from the results of the interview that the participants acquired the skills of digital transformation through the practice of technical work on the systems, in addition to the governance of all services provided to the university's employees and the target groups before the University.

This has greatly shortened the effort and time in the work implementation procedures, and some participants confirmed that they have knowledge of digital transformation skills that are considered among the digital skills strategies that specialists need to develop technologies. All digital skills are needed by everyone and employees, especially to use in life and at work. They added that transformation skills have become one of the foundations that must be available in the employee belonging to an organization and digital transformation has several components, including automation, digitization, and the complete transformation of the organization. Digital transformation has several components, including automation, digitization, and the complete transformation of the organization. Also, "Knowledge of digital transformation skills was acquired through academic work, university studies, and carrying out several technical projects related to digital transformation. All services provided to the university's employees and the groups targeted by the university are noticed. They added that digital transformation in electronic systems facilitates business and converts it from paper to electronic copies, in addition to the availability of systems all the time, reducing errors and raising employee productivity through the use of technical services that speed up work and help provide accurate and urgent studies and indicators and measure employee performance properly.

Regarding the impact of digital transformation skills on the productivity of the employees of the university:

The impact of digital transformation skills on the productivity of university employees (ease of communication, raising productivity, reducing errors, accelerating the pace of work, providing accurate studies and indicators, improving work, knowing the level of achievement in numbers, assistance in archiving, documenting all lines of procedure, accuracy procedures, cost reduction, ease of search). It is clear that digital transformation skills helped facilitate communication with all concerned parties at work and accelerate the achievement of goals by providing accurate and comprehensive studies that help in decision-making. It contributed to raising the employee's productivity and reducing errors. It also helped to manage time more efficiently, as it reduced the waste of resources at the university and reduced costs. The digital transformation also contributed to documenting all work automatically, archiving all electronic transactions, and making it easy for them at any time and any place Some of the participants praised that digital transformation helped them to speed up the completion of electronic applications and to automate and finalize them as soon as possible. Also, the electronic transactions system reduced the previous procedures used in paper-based systems, as it reduces the time for completing transactions, archiving data, and referring it at any time and from anywhere. They added that digital technology has a significant impact on the progress of the level of business at the university, which has helped quality.

Regarding the challenges faced by university employees during the digital transformation process:

The interviews revealed two topics related to the challenges faced by university employees during the digital transformation process, which are presented in two elements. The challenges faced by university employees during the digital transformation process were fear of losing jobs, difficulty in dealing with old employees of the systems, poor handling of new technologies, poor training, lack of employee acceptance of digital transformation, and lack of knowledge of some employees about technology. It is clear from the results of the interview that the most important difficulties faced by university employees in digital transformation skills are the weakness in dealing with technologies, lack of trust and acceptance of some employees with technical services, the difficulty of dealing with some systems and programs, the difficulty of interpretation among some employees, especially those whose service period has exceeded many years at the university and their use of many traditional services, fear of losing their jobs as a result of shifting many of their tasks to automated technical services. Some employees' reported a lack of knowledge of technology and weakness in dealing with modern technologies. With all the previous systems, they need to develop, train and share experiences among employees to gain confidence in dealing with these systems, they find some fear and hesitation about dealing with digital programs and exchanging experiences. Thus, development and training make it easier to deal with these programs and the continuous updates that occur to them.

Professional growth includes basic skills, intermediate skills, and advanced skills. It is clear from the results of the interviews that some participants need to master some basic skills, which include using the keyboard, word processing, managing files on computers, and using e-mail to

meet the job tasks assigned to them. Some of them have knowledge of the intermediate skills necessary to perform work-related tasks such as desktop publishing, digital graphic design, advanced search on the Internet, and access to correct information and social networks. The other category also desires to attend training courses and workshops on advanced skills mastered by specialists in information and communications technology, artificial intelligence, big data, encryption, cyber security, and the Internet of things. They also reported that the use of digital skills for the development of the digital economy, graphic design, digital shopping, artificial intelligence, and undoubtedly cyber security contribute to raising the quality of the entity digitally and improving its operations.

The university has largely provided all the programs that the employee needs to operate the various electronic systems. It has also provided a fast, safe, and effective communication network, and computers with appropriate specifications. Technical requirements for the interest of work, spreading technical awareness of new systems and their inauguration, and providing training courses, workshops, and manuals for using electronic systems. There are challenges among the sample members regarding the use of electronic systems, as the results showed that there are no difficulties in using the computer or dealing with electronic systems by the sample members, and their desire to develop various digital transformation skills from basic, intermediate, and advanced skills. Through the results of this study, the researcher deduces a set of elements that enhance the efficiency of employees on electronic systems. Attention must be paid to training and qualifying employees on the skills and systems of digital transformation at the university on an ongoing basis and the need to employ information technology in training them continuously in their workplace without moving to training centers because of its positive impact on the quality of productivity, providing employees' needs on electronic systems, which serves the interest of work, continuity of research. The creative programs aimed at increasing the efficiency of employees, getting rid of traditional procedures when building electronic systems that are characterized by speed, which helps to raise the efficiency of employees in the systems and improve their performance, working on developing systems in terms of speed, safety and compatibility with work needs, and continuous improvement of the infrastructure to be compatible with The requirements of digital transformation and technological development.

4 Discussion

Nowadays, the used new technology called cloud-based system is increasingly applied because it is cheap and easy to use and had many analytical applications in artificial intelligence, big data, the internet of things, and robotics (Bragg and Bowling, 2018, Stark, 2020). As it is well known, the technology needed a good environment supporting digital transformations which in recent years were very popular. Almost all organizations tried to improve the user information technology which is not only a technological change, but also a change in the culture and business of the organization ((Kutnjak et al., 2019, Stark, 2020). Digital transformation required the use of all the resources of the company like technological, physical, and financial). The research aimed to

study the skills of digital transformation and their role in raising the efficiency of job performance in dealing with the electronic systems of universities. The data was collected and analyzed using interview forms and coding the participants' answers to test questions, and a set of results were reached as follows. There is a positive impact on the application of digital transformation skills on the development of work at the university, and it is negative in raising the efficiency of the employee's job performance. The university's electronic systems have greatly contributed to communication between different sectors, improving the level of service provided, simplifying administrative procedures, and supporting the university's digital transformation. The skills of digital transformation have greatly contributed to the speed of work completion, increasing employee productivity, taking into account stimulating the spirit of creativity and self-development among them, and reducing the percentage of errors at work. All participants agree to convert all traditional procedures to electronic, integrate with electronic systems, increase electronic transactions, and increase the security and protection feature of the systems. Familiarity with the concept of digital transformation is important in work, and its elements and feature must be applied and having all the knowledge about the used systems at the university through the invitation to workshops, publishing awareness or information cards about the new services that are covered by the systems, offered by the university which provides a lot of capabilities and facilities that are needed for digital transformation skills to create the necessary environment for effective functions. Ying Yu et al. (2016) mention that cloud computing services significantly influence the organizational performance of the Taiwanese textile industry. According to Itani et al. (2017), the proper use of social networks as digital tools positively affects the performance of employees while Stoeckli et al. (2019) added that the staff experience, has been focused mainly on cost reduction and computer support for decision making. In this way, its implementation provides added value by improving the performance of internal workflows, in addition to taking advantage of the benefits of business systems such as alignment, control, interaction, operability and greater efficiency, in the context of information systems (UTEC, 2019, Stark, 2020).

Digital technology has a significant impact on the progress of the level of business at the university, which has helped quality. This is in line with Stark, study (2020) revealing the role of digital transformation in improving the performance of public functions in achieving sustainable development for the organization. It also contributed to raising employee productivity and reducing the number of errors, in addition to reducing the time it takes for information from its primary source to the recipients and users and accelerating the process of searching in digital groups and retrieving information by many means and methods.

They reported that it reduces dependence on human intervention, and poor training in modern technical systems. Similar results were reported by Stark, (2020) who projects and initiatives for the digital transformation process which need training and awareness programs in addition to the development of the digital community. Also, they slow down and interrupt services which may be one of the challenges, as mentioned, and undoubtedly, some transactions need re-

engineering of some procedures due to the acceleration of ministries and relevant authorities in amending some procedures to overcome the apparent challenge. The use of social networks during the working day generates counterproductive behavior, which dissipates work resources and interferes with a performance at work (Scardovi, 2017, Khansa et al., 2017). Farivar and Richardson (2020) reported the advancement of information technologies which has diversified the forms of work, like remote work; working from home. Shishi et al. (2016) indicated that customer service orientation, training, empowerment, affective organizational commitment and emotional exhaustion influenced the recovery of staff while Pitoyo and Suharyanto (2020) reported the use of technological products in companies in the Bandung city of Indonesia, generates great benefits by improving product quality, reducing time in manufacturing processes and services, which have a significant effect on the performance of employees.

There are challenges among the sample members regarding the use of electronic systems, as the results showed that there are no difficulties in using the computer or dealing with electronic systems by the sample members, and their desire to develop various digital transformation skills from basic, intermediate and advanced skills. Through the results of this study, it was concluded that a set of elements that enhance the efficiency of employees on electronic systems, the most important of which are the interest in training and qualifying employees on the skills and systems of digital transformation at the university on an ongoing basis, and the need to employ information technology in training them continuously in their workplace without moving to train centers because they have a positive impact on the quality of productivity. Providing the employees with their needs on electronic systems from the technical requirements as soon as possible to serve the interest of the work and continuing the search for creative programs increased the efficiency of employees, getting rid of traditional procedures when building electronic systems in line with the goals of digital transformation which was characterized by speed helps to raise the efficiency of employees in the systems and improve their performance to be compatible with the requirements of digital transformation and technological development

5 Conclusion

The research aimed to study the skills of digital transformation and their role in raising the efficiency of job performance in dealing with the electronic systems of universities. The data was collected and analyzed using interview forms and coding the participants' answers. There is a positive impact on the application of digital transformation skills on the development of work at the university, and it is negative in raising the efficiency of the employee's job performance. The university's electronic systems have greatly contributed to communication between different sectors, improving the level of service provided, simplifying administrative procedures, and supporting the university's digital transformation. Also, the skills of digital transformation have greatly contributed to the speed of work completion, increasing employee productivity, taking into account stimulating the spirit of creativity and self-development among them, and reducing the percentage of errors at work. Support from all participants converted all traditional procedures to

electronic, integrating with electronic systems, eliminating electronic transactions, reducing the flow of procedures for requests executed electronically and increasing the security and protection feature of the systems. Familiarity with the concept of digital transformation and its elements and features is important in work. Full knowledge of the systems used at the university, taking into account the need to hold workshops or publish awareness and information cards on the new services and systems offered by the university are provided. Also, the university provides a lot of capabilities and facilities that digital transformation skills need to create the necessary environment for its effective functioning. Moreover, the university has largely provided all the programs that the employee needs in order to operate the various electronic systems. It has also provided a fast, secure and efficient communication network and computers with appropriate specifications. It is necessary to provide the technical requirements for the interest of the work, and spread technical awareness of the new systems and their inauguration, and provide training courses, workshops and manuals on electronic systems use.

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