Digital professional development of faculty members in universities

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Abstract

The study aimed to identify the Digital professional development of faculty members in universities. It also aimed to identify the needs of faculty members to use and apply digital competence. The researcher used the descriptive analytical approach and used a questionnaire that was applied to the study sample represented by the faculty members of the faculties of Arish University. The importance of the study was summarized in the study's response to the requirements of the twenty-first century and the changes and developments that prevail, which impose renewal on educational institutions. It may also be considered a building block that can be added to the methods of developing strategies and visions of Egyptian universities, and may work to direct the attention of designers of various educational processes and researchers towards the field of digital education and its skills and its employment in enriching and improving the educational process. The study concluded that digital competence and dealing with technology facilitates the faculty member and the assistant staff to obtain information in an interesting and enjoyable way. The study concluded that the lack of provision of training programs for faculty members at Universities is one of the most important obstacles to their digital professional development.

Keywords: Digital competence- faculty member.

Introduction:

In recent years, the world has witnessed a major development in the field of information and information technology, as knowledge and information flow at an increasing pace with the increasing use of digital software by different age groups. This development has prompted many countries to take advantage of digital technology in various fields.

With the increasing spread of digital technology and its penetration into all aspects of life, which has witnessed a remarkable acceleration in recent times and is

still growing dramatically, this technology is increasingly interfering with various aspects of daily life. This is evident in areas such as education and education, which interact with life in multiple ways. While digitization offers many opportunities, it also carries new aspirations that contribute to shaping the future. In particular in education, with the aim of promoting the educational process more efficiently through the use of computers, connected devices, Internet networks and other technical tools. It has also led to the creation of new roles for teachers and faculty, which go beyond traditional roles to meet the demands of the digital age.

Digital competence is one of the requirements of digital transformation, a set of skills based on the use of computers and the Internet. This efficiency is comprehensive and interactive, allowing interaction with digital content, as well as the complementarity and diversity of tools and means used. They are flexible and constantly updated, helping to meet changing learning needs. Moreover, it saves time, effort and cost, and allows access to knowledge from anywhere and at any time, enabling the learner to acquire and develop skills. Digital efficiency promotes collaboration and participation through the use of online tools and services (Salah EL-Din and Al-Ghoul, 2019).

It has become imperative that the educational process in higher education institutions keep pace with these digital transformations. This requires the use of these technologies in universities, which presents universities with great challenges to catch up with institutions that have experienced a comprehensive digital information renaissance in both quantity and quality. These challenges include addressing problems caused by the increase in information volume, the increase in student numbers, the shortage of faculty, and distance and so on. Universities are one of the most demanding institutions to absorb these changes and harness them in the academic and educational reality, especially with the spread of the use of digital educational technologies in various functions, whether in teaching, learning or scientific research.

Firt: Digital skills

1- **The concept of Digital skills:**

Digital skills refers to a set of abilities that enable individuals to effectively use digital devices, applications, and systems to achieve goals in work, learning, or everyday life.

It can also be defined as " digital skills are the capabilities that enable individuals to deal with digital information and technology effectively and securely, including the use of the Internet, computer software, and smart devices " (ITU, Digital skills Toolkit, 2020).

2- The importance of digital skills:

Key digital skills are needed for individuals in particular and for countries in general. Digital skills support every aspect of work and life, from filling out a government form to communicating about work. No job or task requires a basic level of digital performance,also digital skills can:

* Enhance the ability to work in technology-driven environments.
* Enable people to use digital services efficiently.
* Improve access to jobs.

3- Components of digital skills:

Digital skills consist of three skills:

A- Basic digital skills (for individual digital knowledge).
B- Intermediate digital skills (for the workforce in the digital economy).
strategies should ensure that everyone has the basic digital skills needed to work in society as well as opportunities to acquire intermediate skills that improve employment opportunities and enable the most meaningful use of technology. it enables individuals not only to search for information online but also to assess the

reliability of digital sources(World Economic Forum,2016) :

Form (1) skills of the Twenty-first century

Second: Digital Transformation

1-**The Concept of digital transformation :**

Digital transformation refers to the use of new technology and the developments associated with the Fourth Industrial Revolution such as social media, mobile, big data analytics, artificial intelligence, the Internet of things, cloud computing to achieve significant breakthroughs in business delivery by achieving new operational efficiencies (Kristin et a, 2019: 37).

Digital transformation involves redesigning processes, services and operational models using digital technologies to enhance efficiency, improve user experience, and create new value.

The term "digitalization" (digitization) is used to refer to the adoption of digital technologies to improve or develop existing processes. These terms vary in scope and objectives, as digitization is an initial stage of broader digital transformation (Al-Muslimani , 2022:804).

The study (Abdel- Ghaffar, 2019) pointed out that it is necessary for the government to realize the massive global digital transformation and to qualify its organizations

and youth on how to acquire flexibility, expertise and techniques to deal with these developments in the labor market or else it will find itself outside the framework of progress.

2- **Digital transformation Characteristics :**

Digital transformation helps educational institutions achieve many of the characteristics that set them apart from other traditional institutions. The most important of these characteristics (Al-Mutraf ,2023:164) are:

A. ability to adapt.
B. the distinction.
C. High-tech.
D. Crossing the border.

3- Digital transformation benefits :

The study (Al-Mufadhi , 2020: 8) sees that digital transformation has several benefits, including:

A- Replacing traditional digital processes.
B- increased thinking time.
C- Changing business models and changing mindsets.

4- Digital transformation techniques:

Digital transformation technologies are divided into infrastructure and human resource technologies; Improving the ICT infrastructure is essential, especially upgrading networks to provide fast connection and fast and secure data downloads. The data can then be analyzed and fraud detected (Al-Mutraf,2023: 164):

Form (2) Digital transformation technologies

5- Indicators for measuring digital transformation:

The study (William, 1988: 40) indicators measuring digital transformation in the information society were summarized in five areas:

The cultural field, the technological field, the social sphere, the economic sphere, and the field politically.

6- Justification for digital education:

Digital education has become a modern trend in line with the changes and requirements of the times, as it represents one of the basic conditions for building a knowledge society. Knowledge utilization has become the key to inclusive development, and building a knowledge society therefore requires a sophisticated education system that opens new horizons for science and technology.

Digital education also requires a radical shift in the role of human resources, from simply preserving knowledge and implementing regulations to innovation in the field of informatics and development within the framework of digital culture. It also calls for changing the nature of interactions among members of the university community, by diversifying the use of modern devices and communication channels, and expanding opportunities for interaction. This aims to take advantage of the applications of modern technology and harness them to improve university performance in all its aspects, which contributes to enhancing efficiency and innovation in academic institutions.

Third: Digital competence:

The term digital efficiency is in line with the characteristics and characteristics of this era; The abilities and skills associated with digital competence are linked to the principle of training and continuing education, not just experiences that have been randomly collected.

1- The concept of digital efficiency :

The study (Al-Obaid, 2015) indicated that digital competence is a set of capabilities that should be available in individuals using technology, including knowledge of the fundamentals of programs and knowledge of the skills specific to each program, as well as intellectual property controls and development methods in various software in the light of their employment in a way that contributes to the achievement of the objectives of the educational process, and the full realization that the advanced and constantly changing technology requires technical skills constantly.

Digital competence is defined procedurally as the body of knowledge, skills and attitudes needed to use ICT and digital media and their applications to enable, and includes content creation and sharing, and knowledge-building in an appropriate manner, to support action, learning, social participation and upbringing. in addition to

promoting empowerment in various fields correct knowledge and practical application of digital skills and orientation toward them correctly considered comprehensive for many areas.

Digital competence is based on the development of skills to use specific tools or applications that users need to develop technology in order to work in a digital environment, in addition to a range of areas, the most important of which are: information Management and collaboration, as well as communication & sharing, communication & sharing, networking through web tools, content creation & knowledge, as well as fostering ethics & responsibility, evaluation & problem-solving (Shaker, 2020: 192).

2- Elements of digital efficiency:

The use of the term competence has become more widespread than the use of the term skills, and more evidence of further advances in modern topics, reflecting the need for broader and deeper content of concepts. Digital efficiency is not just about the digital transformation of organizations and is not just about digital skills; It also includes the social and emotional aspects of using and understanding digital devices and applications (Calvani& Ranieri,2008:1):

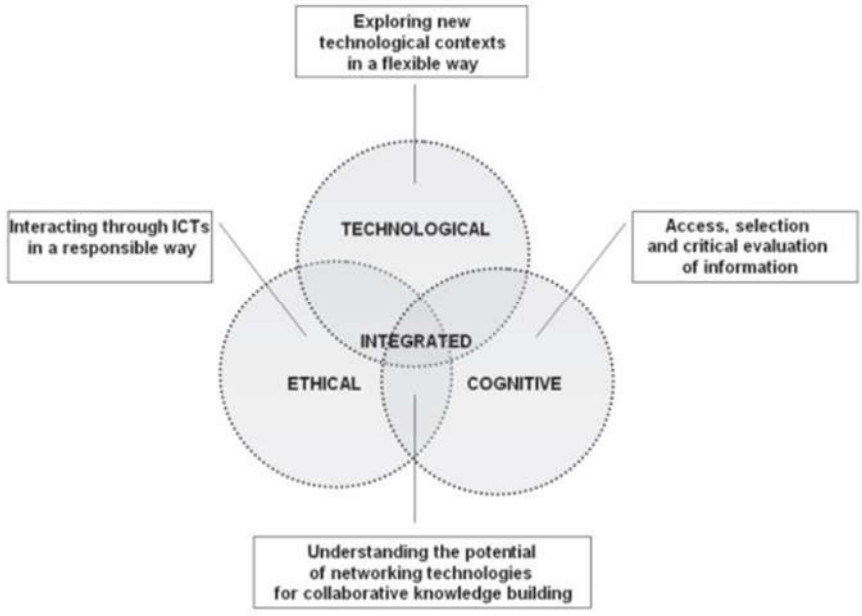

Figure (3) elements of Digital efficiency

3- Areas of digital competence:

* The first area: Dealing with information and data.
* The second area: Communication and cooperation.
* The third area: Digital content creation.
* The fourth is digital safety.

* The fifth area: Solving digital problems.

4- Digital efficiency and artificial intelligence:

There are many concepts associated with digital efficiency, including artificial intelligence. despite the difference of academics and people of science in the definition and definition of the concept of artificial intelligence, but it has been defined as the scientific and technical stream, which includes methods, theories and techniques that aim to create machines capable of simulating human intelligence and this science is considered a knowledge science and not a technical science due to its history of being started work research by a group of researchers in computational neuroscience before being copied as a branch of computing science (Qamoura et al., 2018: 5).

5- Digital competence in education:

Pedagogical digital competence refers to the ability to apply the attitudes, knowledge and skills consistently required to plan, implement, evaluate and review ICT-supported teaching on an ongoing basis, based on current theory, research and proven experience with the aim of supporting student learning in the best way possible (Higher Education Studies, 2017:43).

The Jaber study (2021) also noted that if teachers and faculty themselves lack the appropriate digital knowledge and skills, they cannot ensure that students acquire the necessary skills in the digital age appropriately. On the other hand, the lack of such skills is one of the main causes of digital inequality; It is a prerequisite for the effective use and use of the Internet, or in other words, digital skills have the influence of the medium on the adaptive behaviors of ICT, and therefore digital skills are seen as the most important reasons for the development of society, including the educational process.

6- Dimensions of digital educational efficiency:

The study (Al-Aroui, 2023: 394) identified five basic dimensions to be considered when training teachers digitally, namely:

A- General digital efficiency versus specific competence.

B- Digital tools for classroom management versus enhanced learning.

C. Technical efficiency versus reflective efficiency.

7- Areas of digital competence in education:

The study (AL-Mutraf, 2023) reported that professional digital competence is divided into three main areas:

A- Overall digital efficiency.

B- Specialized competence or educational competence.

C- Professional competence.

8- Digital requirements for university education:

Some of the requirements for university digital transformation can be summarized as follows (Ali, 2011:267):

A- Dissemination of the culture of digital education and distance learning in university colleges.

B- Production of electronic courses in the production centers of universities.

C- preparation of centers for the dissemination of electronic courses to expand their use .

The teacher at the school and the faculty member at the university are the nerve of the educational process and the beating heart of that process and the basis of its success; It has become necessary to provide all means and remove all obstacles that prevent it from being fully prepared and informed of all that is new and modern in his field of specialization in accordance with the developments of the times.

The university is one of the most important social institutions that affect and are affected by the prevailing social conditions in society, it is the making of society on the one hand and on the other hand is its tool in the making of its technical, professional, political and intellectual leadership, therefore each university has its mission to achieve.

First: Faculty members in universities

Faculty members have a responsibility to educate students to be lifelong learners. Therefore, the faculty must themselves be educated first. The roles of faculty members in teaching, scientific research and community service are the cornerstone of the university career. Universities prepare individuals for life, teach, train, and develop their skills. In line with this role, faculty members are expected to be lifelong learners, so as to set an example for their students (Elaldi, 2017:31).

1- Academic performance of faculty members:

The academic professional performance of a faculty member is defined as the set of functions and tasks performed within the university, including teaching, scientific research, and community service (Ali, 2020: 750).

The concept of academic performance of faculty members is the planned and required change in their performance commensurate with the multiple roles they perform. These roles include teaching, research, evaluative, informational, managerial, and psychological. to ensure the achievement of quality standards and ensure academic accreditation (Al-Esamy, 2023: 481).

2-Justifications for developing academic performance of faculty members:

There is a set of justifications that are related to the academic performance of the faculty members, which showed reasons and reasons for interest in upgrading this performance in light of modern and contemporary trends. Among the most prominent of these justifications, according to a study (Ahmad, 2022:81):

A- Technical justification.

B- Psychological justifications.

C- Educational justification.

D- Experimental justification.

3-Factors affecting academic performance of faculty members:

The academic performance of university faculty members is influenced by a range of internal and external forces surrounding them, which are the primary drivers of performance, such as personal, social, managerial, and other factors. both at the level of the individual and the surrounding community.

The study (Bygstad, et al., 2022: 182) indicates that the development of academic performance of faculty members requires several requirements including:

A- Faculty members should be able to receive continuous and comprehensive training to bridge knowledge gaps, with a focus on the content learned being useful to students and in line with the curriculum.

B- Universities should recognize the transformations taking place and support faculty in developing cognitive skills, personal and professional skills, and attitudes that enable them to adapt to a world that is rapidly changing by technology.

C- This continuous development requires enabling faculty members to achieve themselves and upgrade their capabilities to meet the needs of university education. Digital transformation is an essential component of achieving high-quality education, contributing to the creation of a work culture focused on innovative and creative human resources capable of meeting various challenges.

4- Qualities and ethics of faculty members in universities:

The member of the university faculty of higher education institutions holds a prominent position in society; Because it works to improve the quality of education and develop it according to scientific developments and the needs of society. It is also important as the core of scientific and academic activity in universities, where it contributes effectively to the intellectual and moral building of the individual (Sami, 2015: 379).

There are also personal characteristics and professional visions of a good university professor who is able to work in the era of information and communication technology and can be summarized as follows:

***Scientific role model**: This is the necessity of being a teacher and a professor specialized in a field of science, and specialization of his exact specialties, he works to develop and develop it in integration with other sciences and knowledge.

***Intellectual role model:** This means having a comprehensive view of life and human relations, and being able to think model and follow scientific methods in presenting and discovering facts.

***Social role model**: This requires him to educate his students on social responsibility with its three elements of attention, understanding, and participation as integral elements, attention to society moves man to understand, and attention and understanding together lead to positive participation and building the future (Abdel-Razek, 2011: 211).

***Educational role model**: This means being able to teach the learner ways of continuous learning, lifelong learning, and help him achieve this by controlling self-learning skills, and looking for information at their sources.

The qualities of a university faculty member lie in his possession of moral values and commitment to the customs and traditions of his community, all in addition to his religious awareness and tolerance with his students and with his community as a whole.

5- Roles of faculty members:

A- The role of the faculty member as a vector of knowledge:

The faculty member is considered a transporter and receiver of information through lectures, in addition to providing guidance and guidance to students. He also possesses the skill and ability to formulate educational goals and work to achieve them through lectures and classroom and non-class activities. Therefore, the faculty member is in constant need of continuous development and renewal to ensure the achievement of teaching objectives effectively.

B- The role of the faculty member as a leader of scientific research:

Universities are the main engine of the development process, and scientific research is one of the basic criteria for academic progress and advancement.therefore, scientific research is one of the most prominent roles performed by faculty members in universities.

C- Role of faculty member as leader and decision maker:

Faculty members are considered to have a significant role in administrative decision-making through the presidency of academic departments, the Deanship of Colleges, and various administrative positions at the level of the university departments. The most important roles they can play (Eldahshan, 2020:15) are:

* Updating policies and developing regulations and laws in line with the requirements of digital societies and linking them to the goals and aspirations of society.

* Adopt modern university formulas and trends such as productive universities, research universities, partnership universities, virtual universities, and open universities.

* Focus more attention and attention on the disciplines related to software and information technology to meet the needs of the digital age.

D- The role of the faculty member toward his relations with his colleagues:

Where he maintains social relations with his colleagues and with the university administration, and in this role he is required to contribute to solving problems and participate in the activity of his university because of its positive returns in the field of professional growth. they also participate in their preparation, training and development programs, both in terms of their choices and participation in them, as they reflect their real needs, and are required to be an active member of their community (Lamoushi, 2016: 100).

Given these roles, they are overlapping and complementary roles that are difficult to separate or to be satisfied with each other; This is because the requirements of the modern era differ from the previous decades and therefore it has to develop itself in accordance with the requirements and spirit of the era and in proportion to the nature and form of the surrounding society as in the society of North Sinai Governorate.

Second : Digital transformation in Universities:

Digital transformation in universities contributes significantly to the improvement and development of academic performance and the tasks performed by faculty members, whether in the fields of teaching or knowledge production, scientific research and other university jobs, and the process of evaluating faculty members, which quality systems seek to achieve, a way to measure their contribution to the development of specialized knowledge in the field of information technology in universities, and to translate their objectives by preparing highly qualified faculty to keep up with the technological challenges facing higher education (Akbari,2022: 57).

1- The objectives of digital transformation in universities:

(Amin, 2018: 50) believes that there are goals for digital transformation in universities, the most important of which are the following:

A- developing the professional performance of faculty members, including:

B. improving the quality of university education by improving the quality of courses and educational programs and designing them on international bases and standards and applying the principles of active learning, which contributes to increasing the quality of education.

C. to achieve equality and equal educational opportunities for all students participating in the university learning process

Spread good education that has no boundaries, no place, no time.

2- Requirements for digital transformation in universities:

According to a study (Shaalan, 2016: 49), the process of digital transformation is based on three main requirements:

A. define the appropriate strategy for digital transformation within the university to ensure its alignment with the institutional objectives.

B. analyze the mechanisms of work available within the university institution, while assessing the level of their effectiveness and importance in supporting the transformation process.

C .providing appropriate training programs to all stakeholders, with the aim of clarifying the best ways to implement the transformation and ensuring an effective and systematic approach to achieving the desired objectives.

The establishment of a digital university based on the integration of ICT in all fields and with all its different categories of students, faculty members and administrators is not easy and is a goal sought by many Egyptian universities through the continuous efforts of these universities to adopt the requirements of digital transformation.

3- The impact of digital transformation on universities:

Improving the quality of university education, including programs, courses and resources, and designing them on modern global bases to ensure the improvement of the quality of the educational process outputs is one of the most important results that can be brought to university education from the digital transformation.

Digital transformation has multiple impacts on educational institutions, especially universities, which can be summarized below (Ali, 2013:523):

A- Ability to adapt to a rapidly changing environment.

B- promoting competitive excellence: Digital technologies enable universities to achieve uniqueness and excellence, thus enhancing their competitiveness at the local and international levels.

C- Adopting world-class technologies: Digitally transformed universities provide modern information and communication technologies that enable them to provide advanced educational and research services. Digital transformation also helps educational institutions respond effectively to the constant changes in their internal and external environments.

4- Obstacles to digital transformation in universities:

The process of digital transformation in universities faces many challenges, which can be summarized below

(Al- Muslimani, 2022:815):

A- Lack of modern technologies: Many universities suffer from a lack of advanced technology and poor digital infrastructure, which hinders the integration of digital transformation.

B- Weak Internet networks: In some universities, poor Internet access is a major barrier to accessing available digital services.

C- Limited use of technology: Low level of utilization of faculty members from technological and information developments.

D- absence of effective professional development programs to qualify faculty members to use technology.

Third : Digital professional development of faculty members in universities:

1- The concept of digital professional development of the faculty member:

Professional development is defined as a continuous and cumulative learning process through which a faculty member seeks to develop his or her abilities and skills. This process is a permanent approach to self-reflection, discovery of potential, and promotion of professional growth. Professional development works best when it takes place within communities of practice that encourage interaction and exchange of experiences (Fadlallah, 2017, 92).

The professional development of faculty also refers to the efforts made by a university or other professional institutions with the aim of developing their professional skills and abilities.

Digital professional development for faculty is defined as processes that aim to develop the skills and behavior of faculty members, to be more efficient and

effective to meet the needs of the university and the community, and the needs of the faculty themselves by dealing with modern technology and technological culture (Knipe & Speck, 2005: 32).

2- Digital professional development goals for university faculty members:

The digital professional development of faculty members aims to achieve a set of goals, the most important of which are (Al-Zahrani, 2018: 419):

A. keeping abreast of developments in the field of specialization and applying all that is new and new.

B. to establish the principle of continuous learning, lifelong learning and reliance on technological self-learning methods.

C- deepening commitment to and adherence to the ethics of the teaching and learning profession.

3- The importance of digital professional development for faculty members:

The importance of digital professional development for university faculty members is illustrated in the following (Al- Zahrani, 2018: 419):

A- Helps in overcoming the obstacles of the traditional training of the faculty member as it helps to improve the level of training and update the training content.

B- It helps to know everything that is new in its field of specialization.

4- Digital skills and competencies to be available in the faculty member in universities:

Considering the reality of the roles of the faculty, it is clear that it needs to raise the efficiency of digital self and how to deal with electronic platforms, and communicate through the program (Zoom) and other electronic communication programs, and also communicate through modern technological means and the ownership of digital dissemination mechanisms.

The achievement of the university sector of digitization will be through the digital role of the faculty member, and thus provide educational services at one level and high quality, and the use of advanced methods in the fields of measurement and evaluation, as well as educating students how to employ their information and experience in different life situations. to the extent that it is the only one to attract and rely on students (Eldahshan, 2010:60).

5- Methods of digital professional development for faculty members in universities:

A. Self-learning.

B. distance education and e-learning.

C. Community service centers and capacity development centers in universities.

D. Cultural and social programs.

6- Obstacles of the capacity development centers of faculty members in universities:

University faculty development centers face many obstacles that prevent them from achieving their desired goals (Saraya, 2017:69):

* the conviction of the faculty members and their assistants in Egyptian universities that most of the training programs offered by the capacity Development Centers are useless.

* randomness and unconsidered repetition when choosing training programs and the near absence of training needs

* the low level of trust among faculty members and capacity development centers in Egyptian universities.

* Low level of motivation (reached the point of reluctance to participate in the matrix of training programs offered by capacity Development Centers.

Based on the above, It is clear from the foregoing that:

1. one of the most important obstacles to the digital professional development of faculty members at Al-Arish University is the lack of provision of modern training programs for its members and not being careful about the importance of these programs, which is one of the most important requirements of the digital age.

2. The need to provide material and moral encouragement to faculty members to achieve their digital competence and to encourage them to carry out scientific research that contributes to the development of the educational process using digitization.

3. Dealing with technology makes it easier for the faculty member to obtain information in an interesting and fun way and to explain to him the most important findings of scientific research, which develops his direction toward his profession.

4. Digital competence contributes to providing the faculty member with the latest developments in the technical field, which reflects positively on his teaching performance and scientific research and to meet the requirements of the regional and local community.

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