Contents lists available at Science-Gate

International Journal of Advanced and Applied Sciences

Journal homepage: http://www.science-gate.com/IJAAS.html

# The use of information technology applications by faculty members at the college of basic education in the public authority for applied education and training in the state of Kuwait

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ARTICLE INFO

*Article history:*
Received 10 September 2022
Received in revised form
6 December 2022
Accepted 19 December 2022

*Keywords:*
Information technology
Mobile information technology
Academic databases
Faculty members
Public authority
Applied education and training

ABSTRACT

This study sought to determine the importance of the use of information technology by faculty members in the educational departments of the College of Basic Education in the Public Authority for Applied Education and Training in the States of Kuwait. A descriptive survey method is used to achieve these goals. A questionnaire is utilized as the main tool for the study on a stratified random sample of 42 faculty members. One of the most prominent results is that a large number of faculty members do not deal efficiently with information technology, and are not aware of all the available technological tools. The study also concluded with a proposed vision to increase the efficiency of information technology performance, including training, periodic updating, and permanent empowerment to use it as an integral part of the quality of the educational process in the Public Authority for Applied Education and Training.



## 1. Introduction

The world has witnessed radical changes resulting from technological developments that covered all areas of life (Beniger, 2009). What we can deduce from these developments is the emergence of renewed needs of society related to knowledge. According to many specialists, the relationship with knowledge has witnessed a tremendous change due to the reality of the information revolution and research skills that are steadily increasing (Schneckenberg, 2009), and technology tools have become a decisive factor in facilitating access to information sources in all its forms. According to the views of many scholars, Education, using information technology tools, has become one of the most dynamic sectors at the level of human thought. As a result, the majority of university educational institutions at the level of developed countries have added to the entry requirements for the position of a university professor the ability to use information technology and the ability to manage its tools. So that the faculty member has a set of skills related to IT technology. Therefore, the educational system had to keep pace with these transformations and reconsider its traditional perceptions of the requirements of society, as it is the responsibility of university education to deal with these new facts by proposing modern models that respond in appropriate ways to the needs of faculty members and work to encourage them to own. The appropriate and necessary capabilities in order to control the management of the appropriate information technology tools to perform their educational tasks. Information technology is an integrated process based on the application of a structure of science and knowledge about human learning and the use of human and non-human learning sources to confirm the learner's activity and individuality in the methodology of the systems method to achieve educational goals and reach more learning. Effectiveness (Lewis and Rush, 2013).

The technological use of a faculty member is also reflected in each of the development of his research capabilities as an important tributary to upgrading his educational capabilities, as scientific research is an organized method of collecting information, taking notes, and objective analysis of that information by following specific scientific methods and curricula; With the intent of verifying their validity, modifying them or adding new ones to them, and then arriving at some laws and theories, predicting the occurrence of such phenomena and controlling their causes (Mirriahi et al., 2015).

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Despite the availability of many theoretical and field studies that emphasized the importance of information technology in universities, and despite the efforts of the General Authority for Applied Education and Training to move towards the adoption of quality standards and academic accreditation, including the establishment, dissemination, and use of information technology among its branches, with the foundations of information technology. To succeed in developing the effective teaching process, development of scientific research performance, and excellence in the educational process within the university, however, studies are not available, and this matter prompted the researcher to think of conducting a study to evaluate the use of information technology for faculty members in the educational departments of the Public Authority for Applied Education and Training. Hence, the research problem of the study can be summarized in the following questions:

1. What are the information technology tools provided by the Public Authority for Applied Education and Training to its members of the teaching staff?
2. To what extent did information technology tools contribute to improving the educational process of faculty members in the Public Authority for Applied Education and Training in educational disciplines?
3. What are the obstacles that prevent the spread of information technology in the educational departments of the Public Authority for Applied Education and Training?
4. What is the proposed scenario for developing the technological capabilities of faculty members in the educational departments of the Public Authority for Applied Education and Training?

The study aimed to achieve the following:

1. Recognizing the reality of the use of information technology by faculty members in the educational departments of the College of Basic Education.
2. Analyzing the information technology tools used by faculty members in the educational departments of the College of Basic Education.
3. Assessment of strengths and weaknesses in the use of information technology among faculty members at the College of Basic Education in the Public Authority for Applied Education and Training.
4. Determining the shortcomings and obstacles that limit the ability of faculty members at the College of Basic Education in the Public Authority for Applied Education and training in the use of information technology.
5. Understand the reality of the availability of information technology by the Public Authority for Applied Education and Training to its members.
6. Reaching specific results for the problem of the study through which a proposed scenario and specific recommendations can be built to develop the technological capabilities of the teaching staff at the College of Basic Education in the Public Authority for Applied Education and Training.

The importance of the study is in the following aspects:

- The study deals with the information technology variable in universities (the Public Authority for Applied Education and Training as a model), which seeks to implement quality standards and academic accreditation, as information technology is one of the main requirements for quality standards and academic accreditation.
- The study seeks to identify the current reality of the use of information technology by faculty members at the College of Basic Education in the Public Authority for Applied Education and Training.
- The study lays out a proposed scenario and specific recommendations that can be relied upon to activate the role of information technology in the educational departments of the Public Authority for Applied Education and Training, in a way that helps improve the performance of faculty members, leading to quality and excellence at the university, in order to present it to the decision maker, to take the necessary steps towards that.

The limitations of the study can be categorized as follows:

- Objective limits: It is represented in evaluating the use of information technology and its role in developing the educational capabilities of faculty members in the educational departments of the College of Basic Education in the Public Authority for Applied Education and Training.
- Human limits: It is represented in knowing the use of information technology for faculty members at the College of Basic Education in the Public Authority for Applied Education and Training, where the study included all academic degrees: (Professor - Associate Professor - Assistant Professor - Lecturer), and for both types.
- Time limits: The study tool was applied during the second semester of the academic year 2021-2022.

## 2. Methodology

The study depends on the descriptive survey method, which allows for obtaining accurate data for the subject of the study, and the focus of the research, which helps the researcher in generalizing the results of his study to the corresponding scientific departments in universities. Classes of faculty members. The study also used two methods to verify the validity of the tool:

- Apparent honesty: presenting the questionnaire to a group of specialists for evaluation, arbitration, modification, and redirection to faculty members once and for all.

- Internal consistency validity: where (Pearson Correlation Coefficient) was calculated in order to know the internal validity of performance, where if the value of the correlation coefficient is less than (0.25), it is considered low, but if its value is (0.25 - 0.49), it is considered moderate, but if its value is (0.50 - 0.75), the coefficient is high and the relationship is strong, but if it is higher than that, this means that the relationship is very strong. The study also used the scale (Cronbach's Alpha) to measure the stability of the study tool.

Each answer was given a choice and weight based on the three-point Likert scale. Also, there are some important terminologies in this study as follows:

- Information technology is a broad discipline concerned with all aspects of technology, information processing, and management, by dealing with computer software and electronic computers with the aim of converting, storing, protecting, processing, transferring, and retrieving information. Mobile technology and the Internet uses academic databases, all of which are concerned with the production, storage, dissemination, and sharing of information through information technology tools in an effort to form a sophisticated university knowledge society (Naylor and Gibbs, 2018).
- Mobile technology is a modern technology that frees users of information from being in a specific place for permanent access, access to information, dealing with it, and adding to it and sharing it with others in the knowledge society (Traxler, 2017).

## 3. Theoretical framework

### 3.1. Information technology in the public authority for applied education and training

University education in any society is a title for its development, which expresses the different interactions between its various elements. The internal and external dissemination of knowledge based on a clearly defined vision, based on scientific studies and societal data, through the transition to dynamic, dynamic planning, which requires defining the vision in the way educational institutions work, and which seeks to make educational planning a solution to the upcoming problems, as this planning must face Coming crises, not existing problems, with the pursuit of consultative planning that motivates decision-making processes to develop the system, which makes planning a broad work for the participation of workers in this system, as well as the broad beneficiary and financing sectors of the educational system, with the expansion of strategic planning processes as a tool to achieve a balance between operations Different educational short and long-term as a tool to achieve the structural change required in the areas of development.

### 3.2. The use of educational technology media in universities

The term media is used to describe the presentation and representation of knowledge, as well as its reorganization into presentable forms. Certainly, the distinction between media and technology will become less important when they all become integrated into one mechanism. Our world is moving more and more towards integrating information and communication technology into a single system that includes phones and communications Electronic computers, satellites, and telecommunications (Tella et al., 2018), which are the following phenomena, that have transformed technology into forces driving profound change in the field of education.

### 3.3. Multimedia

Where multimedia technology has crossed the barriers between the different media, communication, and media, and the term multimedia has emerged in the field of educational technology since the sixties, and the concept of multimedia has become clear with the beginnings of using the systems approach in education to improve the methods used in the educational process (Babiker and Elmagzoub, 2015), Multimedia is the aggregation and integration of multiple media through information technology and therefore consists as a mixture of text, audio, and graphics (animation and video) (Komalasari and Saripudin, 2017). The stage of hypermedia when adding the roaming method, and the emergence of the possibilities of integrating video and computer has led to a boom in the design and production of multimedia programs by knowing the nature of the learning environment, the nature of the target group, the minimum number of means used and the possibility of employing them when designing these programs (Haydon et al., 2017).

### 3.4. Mobile learning technology

It is a technology that allowed individuals to be free from the constraints of being in a particular place to communicate, access, and possess scientific information, and made it possible for individuals in isolated, remote areas to access the finest educational institutions.

### 3.5. Mobile phones

Mobile phones have developed greatly during the past three decades, as they have gone through many stages of development adding each stage to the previous one. The services provided by mobile phones in the educational process can be shed light on (Keengwe and Bhargava, 2014) as follows:

- Providing a Short Message Service (SMS), which allows mobile phone users to exchange short text messages with each other so that the letters of a single message do not exceed 160 characters.
- Providing WAP service, a wireless application protocol that helps users to access the Internet wirelessly using small portable wireless devices such as mobile phones.
- Availability of the GPRS Messaging service, as it is a new innovative technology that allows mobile phones to access the Internet at high speed and the ability to receive data and files, store, retrieve and exchange them wirelessly at high speeds. The mobile phone needs to be configured to use GPRS technology and subscribe to GPRS WAP services. Modern mobile phones are equipped with this technology, whereby the user can access the Internet at any time and from anywhere to browse the Mobile Internet, read and reply to e-mail, and send and receive MMS messages (Pu et al., 2016).
- Providing Bluetooth service, which is a Bluetooth wireless technology that connects a group of portable communication devices with each other with short-range wireless links such as mobile phones and pocket computers to exchange data and files between them wirelessly.
- Providing a Multimedia Service (MMS). This service allows the user to send and receive multimedia messages where text messages, video clips, animations, and color images can be exchanged.

### 3.6. Personal digital assistants

Personal Digital Assistants (PDAs) are handheld computers or pocket devices (Mechling and Seid, 2011), initially designed for use in organizing personal appointments, storing friends' phones and addresses, recording private data, and writing notes during lectures or meetings, and Task Lists (Germany, 2012).

With the passage of time, these devices evolved into miniature computers, where they became able to run text editing programs and arithmetic tables. Capture video, connect and browse the Internet, download and read e-books, read e-mail using wireless modems, and allow connection to Intranet and Extranet LANs, with the feature of providing infrared communications allowing wireless data transmission over short distances (Yang and Wu, 2017).

### 3.7. Tablet PC

Tablet computers are a development for laptop computers, and the tablet computer is accompanied by a keyboard that can be detached or folded, and it may be without a keyboard, so there is the latter type with touch-sensitive screens with a thin pen for data entry (Cuhadar, 2014), and these devices run on Windows XP It has the advantage of recognizing the fingerprint, and it also has the ability to use infrared rays to transmit data from a nearby location (Maclaren et al., 2017).

## 4. Study procedures

### 4.1. Objectives of the field study

The researcher conducted a field study, which aimed to assess the reality of the use of information technology tools by faculty members in the educational departments of the Public Authority for Applied Education and Training and to identify the obstacles that prevent the effective use of information technology at the university, to arrive at a proposed vision for developing the capabilities of faculty members to use information technology. In the teaching and scientific research processes at the university.

### 4.2. The study sample

Based on the limits of the aforementioned study, its community included a stratified random sample of faculty members in the educational departments of the College of Basic Education of Education in the Public Authority for Applied Education and Training, who numbered 42 faculty members in the academic year 2021-2022., as follows:

#### 4.2.1. Gender

The community of the sample members is the content of 42 members as follows in Table 1.

**Table 1:** Distribution of study sample members according to gender

| Gender | Frequencies | Percentage |
|---|---|---|
| Male | 24 | 57% |
| Female | 18 | 43% |
| Total | 42 | 100% |

#### 4.2.2. Academic degree

The distribution of the study sample regarding the academic degree is as follows in Table 2.

**Table 2:** Distribution of study sample members according to the academic degree

| Academic degree | Frequencies | Percentage |
|---|---|---|
| Professor | 2 | 4.7 |
| Associate professor | 5 | 11.9 |
| Assistant professor | 27 | 64.3 |
| Lecturer | 8 | 19.1 |
| Total | 42 | 10 |

### 4.3. Study tool

A questionnaire was designed and consisted of three main parts, the first of which dealt with the characteristics of the sample members, and the second dealt with the reality of the use of faculty members in the educational departments of the College of Basic Education in the Public Authority for Applied Education and Training for Information

Technology, and the third part dealt with the role of the Public Authority for Applied Education and Training in providing technology Information for its members of the teaching staff in the educational departments of the college.

### 4.4. The authenticity of the tool

The researcher used two methods to verify the validity of the tool:

#### 4.4.1. Virtual validity

After designing the questionnaire, the researcher presented it to a group of specialists in the field of education, which included: the affiliation of the questionnaire phrases to the objectives and questions of the study, the quality of the formulation of each phrase, the appropriateness of the gradation of the questionnaire, and comments and corrections were received, as the researcher made them completely.

#### 4.4.2. Internal consistency validity

By ascertaining the apparent validity of the study tool, the researcher distributed the questionnaire and applied it in the field through both personal interviews and distribution via e-mail to a stratified random sample of faculty members with a total of (45) questionnaires. The SPSS statistical package program, in calculating the correlation coefficient (Pearson) to find out the internal validity of the performance, where the correlation coefficient was calculated between the degree of each of the questionnaire terms with the total score of the part to which the phrase belongs.

It is clear from the Table 3 that all the statements of the questionnaire questions have a positive relationship, even if they ranged between moderation and elevation, but did not rise to the level of strong elevation, which indicates that all statements are true in what they measure, represent the part to which they belong, and achieve the characteristic of internal honesty for resolution.

**Table 3:** Pearson confusion coefficient to find out internal honesty

| S | Phrase | Pearson correlation coefficient |
|---|---|---|
| 1 | Using an IT tool on campus | 0.432** |
| 2 | The use and contribution of the e-learning program in improving the educational capabilities of faculty members | 0.556** |
| 3 | The use and contribution of mobile technology in improving the educational capabilities of faculty members | 0.619** |
| 4 | The use and contribution of the tablet computer (tablet) in improving the educational capabilities of faculty members | 0.577** |
| 5 | The use and contribution of academic databases to improving the educational capabilities of faculty members | 0.679** |
| 6 | The use and contribution of multimedia in improving the educational capabilities of faculty members | 0.761** |
| 7 | The use and contribution of learning resource centers on improving the research capabilities of faculty members | 0.675** |
| 8 | The university's keenness to spread awareness of the importance of information technology and the benefits of using it in developing educational capabilities and increasing scientific research for a faculty member | 0.736** |
| 9 | The university's keenness to develop the skills and capabilities of faculty members in order to use modern applications of information technology | 0.784** |
| 10 | The university's keenness to motivate faculty members to use the available Arab and foreign academic databases in carrying out academic research for faculty members | 0.561** |
| 11 | The availability of a clear and continuous plan for periodic training on the use of the latest information technology applications at the university | 0.537** |
| 12 | The university endeavors to periodically update information technology tools and other educational media | 0.539** |
| 13 | The extent to which faculty members are satisfied with the information technology applications used at the university, and that it works to develop educational capabilities and increase their scientific research rate | 0.671** |

**: Function at 0.01 level

## 5. Results

The researcher concludes the following items through the study:

1. There is a divergent trend among faculty members in the Faculties of Education and Arts in terms of the axis of using information technology tools in the educational process of faculty members, as it is clear that all university faculty members use one way or another one of the information technology tools in the teaching process.
2. A clear contrast appears between the use of forms of information technology, where we find that there is an increase in the use of the e-learning program, while we find an average pattern of using mobile technology in improving the educational capabilities of faculty members, and to the same extent the use of a computer (tablet).
3. We find an apparent weakness in not using academic databases in the educational process.
4. As for the use of multimedia, we find that the dominant feature of the use was moderate.
5. The percentage of non-use of the scientific research program increased again.
6. There is a general phenomenon among faculty members at the College of Basic Education not to use these tools well, and the average general use leads to a weakness in the development of their educational capabilities.
7. With regard to the facilities provided by the University for Faculty Members to use information technology tools, the results show that the university seeks well to spread awareness of the importance of information

technology and its benefits to faculty members in the educational process.
8. There is an apparent weakness in the university's keenness to develop the skills of faculty members in order to use information technology tools
9. There is a weakness in motivating faculty members to use academic databases.
10. There is a large segment of faculty members who are not aware of the university's plan to provide periodic training on the use of information technology tools.
11. There is a great belief among faculty members that there is no periodic and continuous update of information technology tools.
12. The degree of satisfaction with the available information technology tools is a medium ratio among faculty members at the College of Basic Education.

### 5.1. Recommendations

1. The necessity of working to raise awareness of spreading the importance of information technology to faculty members at the College of Basic Education by organizing workshops and training courses, holding conferences, and the positive participation of specialists with advanced studies in this regard.
2. The necessity of periodic updating of the information technology tools system at the College of Basic Education, through the transfer of technology and its resettlement at the university through international experiences and companies working in this field.
3. The university seeks to further spread awareness of the importance of information technology by distributing tablet computers connected to the Internet and text databases at the university to its members of the teaching staff.
4. Intensifying periodic training on the use and application of the latest information technology tools by the university.
5. Increasing technological tools in the lecture halls for faculty members to use in research and continuous explanation.
6. The university is committed to directing faculty members to prepare scientific research in accordance with scientific research curricula on an ongoing basis.
7. Preparing specialized courses in scientific research curricula for faculty members, which are conducted by specialists from inside and outside the university.

### Compliance with ethical standards

### Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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