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Obstacles to the use of information technology in university teaching - (Red Sea University as a model)

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Abstract:

The study aimed to identify the obstacles of using information technology in teaching, also to identify the differences of statistical significance at the level of significance (0.05) in the obstacles of using information technology in teaching among the study sample, attributed to variables (gender, scientific qualification ,type of faculty), .

In order to achieve the objectives of the study, the researcher designed a questionnaire and distributed it to (60) faculty member of the Red Sea University and the study reached the following results:

1. The lack of suitable infrastructure for the use of information technology in teaching is the major obstacle to the study sample (76.7) followed by the large numbers of students in the classroom, and the computer equipment available in the laboratory is not suitable for students' preparation, and it is also (71.7%.).

Key word: obstacles, information technology, university teaching

Introduction:

Many higher education institutions in many countries of the world face major challenges, most notably the weakness of their budgets due to critical economic conditions. They seek to allocate most of their financial budgets to access various forms of information and communication technologies to establish, equip and support their information systems infrastructure, Hardware, software, local area networks, metropolitan area networks, and other wide-area networks, ICT has played an important role in all aspects of life, helped to bring about a great civilizational shift, reduced spatial and temporal barriers between members of one society, or between members of society andanother society. The world has become a small e-village; .

The role of information and communication technology (ICT) in the educational process has emerged since the mid-20th century. It helps teachers plan, prepare and provide their lessons, and help students to learn effectively, in an exciting and effective way (Leach, 2005)

Referring to previous studies, Al-Na'abi (2010) points out that there are a number of studies and reports that confirm the impact of the use of ICTs on students' achievement and motivation to learn, develop innovative thinking abilities, solve problems, reduce learning time, , The consolidation of concepts and their approximation, the preservation of historical facts and the promotion of the principle of collective learning, as well as the services and facilities provided to teachers such as: administration and preservation of student records and marks, in addition to communication with students and their parents, Full of teachers, and experienced in his field of specialization. (Awda, 2014). This was reflected in the tremendous development of the learning system, as the educators

discussed new methods, strategies, techniques and models to meet the challenges facing the educational process in order to reach the best educational results, so(E-learning) appeared (Turki, 2010)

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The term "Information Technology" (IC) means all types of technology used for the operation, transmission and storage of information in electronic form, such as computers, communications, networking, fax and other equipment used in communications.

The study Problem:

The researcher noted that as a faculty member in university education and its direct relationship with students, there were many evidence that the use of teachers for this technology did not reach the required level, and that there are obstacles that some professors limit their use and the need to use information technology in University teaching, and the importance of possessing the university professor of skills in the use of information technology in the educational process This study was to find out what impedes its use in teaching. The problem of study can be summarized in the following questions:

1. What are the obstacles to the use of information technology in teaching a for a sample of professors of the Red Sea University?

2. What are statistical significant differences in the study sample, which are attributed to the variable (gender, scientific qualification and type of college)? **Objectives of the study:**

The objectives of the study were as follows:

1. Disclosure of obstacles to the use of information technology in teaching with

a sample of professors of the Red Sea University.

2.knowing thestatistical significant differences in the obstacles for the study sample that attributed to the variable (gender, scientific qualification, type of college). 3-Reach recommendation that help to increase the efficiency of using information technology in teaching for the study sample.

Sample of the study: A random sample of 60 Red Sea University professors was selected, of which (35) were males and (25) females.

Study Methodology: The study adopted descriptive analytical method. **Study tool:** The researcherdesigned a questionnaireanduseditto gather information. **Terminologies of the study:**

Obstacles:

In this study, it means, difficulties, intellectual, physical, technical, administrative, supervisory and other problems that prevent the use of ICT in teaching by the faculty members of the Red Sea University.

Information Technology:

These processes are used to create, transport, store, display and manage information using modern digital technologies, the most important of which are computers and peripherals such as printer, scanner, digital camera, multimedia, CD-ROM, **Teaching:**

The traditional concept of teaching is the group of verbal and written activities undertaken by the university professor in order to explain subjects to the students. This concept is linked to the idea that the teacher is the only source of the study information and has all the answers to the students' questions. Either the contemporary concept of teaching is a set of joint activities between students and teachers, which are based on the exchange of ideas, information about the subject matter, becoming the role of professor from the only source of information to a

mentor, and participants to the subject of the lesson, which depends on discussion, dialogue and research even Students can clearly understand the course material (<u>http://mawdoo3.com</u>, 2016) **Limitations of the study:** The study identified the obstacles to the use of information technology in university teaching. A questionnaire was used to gather information on a sample of the professors of the Red Sea University in the second half of the academic year 2017/2018 **Theoretical framework and previous studies:**

The use of information technology in university teaching has become an important necessity to move from traditional teaching methods to teaching using ICTs and to employ them in teaching and learning to increase efficiency in higher education.

IT has been defined as a set of different tools, techniques and systems that are used to deal with the content that is intended to be communicated to different stakeholders through several stages, The process of data processing, which includes tabulation, storage, coding and analysis to reach the results of the processing phase to take advantage of in time and form appropriate (ChechnyandSharafuddin, 2004).

It is defined as "a group of individuals, data, procedures, hardware and software that work together to reach the organization's goals, as this definition refers to the importance of the human element in the management and operation of this technology." Robbery defines IT as all types of software, Account and communication, whether a computer

- in person or by telephone or through MIS. - (Robbey1986)

From this definition it can be said that the concept of ICT is based on a combination of elements: **a. Computer:** An electronic device consisting of a group of machines working together, designed to process and operate data quickly and accurately, and this device to accept data and stored automatically, and then carried out calculations and logic, according to the directions of a detailed set and instructions called programs, and these programs prepared and stored in advance, Perform such operations on and on digital and alphabetical data. (Nadia, Othman, 2003)

B. Communication technology: consists of modern technologies (satellites, fax, telephone, networks, etc.), which are responsible for the transmission, exchange, dissemination and dissemination of information in order to influence the behavior of individuals and groups.

C. Software: All information processing instructions.

Functions of ICT in Education:

1. Information and communication technologies (ICTs) as a target: Knowledge and communication technologies are learned through structured courses. Education here means training students in using these techniques in their fields of study as well as preparing them for career and social life.

2. Information and communication technologies (ICTs) as a tool: The use of information and communication technologies (ICTs) as a tool and independent of the underlying theme in such areas as scientific communication, research and studies, data collection, introduction and analysis, and presentation, These techniques in the field of completion of assignments and duties of methodology.

3. Information and communication technologies as a medium for teaching and learning: The employment of ICTs as a means of teaching and learning, as in education through practical exercises and educational networks.

4. Use information and communication technologies as a tool for administrative and organizational development of the educational institution itself.

The introduction of information and communication technologies into the educational process has had a profound impact on a qualitative shift and a radical transformation of the nature of the tasks and duties of a faculty member. By adapting these techniques to constructivist learning, the role of a university teacher is no longer limited to " To provide knowledge or information "to the learners, but it has become necessary to exercise other new tasks, such as directed to the thought and coordinator of student activities, facilitator of the educational process and facilitator, and an academic guide, and collaborating with students and colleagues in the profession, and specialist in the process of assessing the level of academic achievement of In August, measured, and other responsibilities that contribute to the success of the educational process. (Alley, L. R. 1996)

The effective applications of these techniques in the educational process, whether traditional or electronic, through ICTs, necessitated the acquisition of certain skills and experiences by faculty members in universities and colleges to deal positively with these technologies through continuing training programs and courses that ensure their follow-up of rapid developments in The field, which will undoubtedly help them to achieve the constructive recruitment of these techniques in the educational process. (Mansour Bin Ali Al Shehri, 2010) **The importance of information technology**:

Identified by Al-Mubarak (2005) as follows:

Creating an interactive learning environment through new electronic technologies, and diversity of sources of information and experience.
 Increase the effectiveness of the interaction between students and teachers through the exchange of educational experiences and opinions and discussion and dialogue and knowledge using various channels of communication such as e-mail (E-Mail)

- Raising students' higher thinking abilities.

- Provide teachers and students with the technical skills and facilities necessary to use modern educational techniques.

- Expand student communication through global and local communication networks, thereby increasing the sources of knowledge, by linking the educational site with other educational sites.

- Provide appropriate education for each age group taking into account individual differences among students.

- Helps to learn through scientific content, provided through modern electronic media such as computers and the Internet without being obliged to attend the classroom at specific times.

Characteristics of Information Technology: Information technology is characterized by a number of characteristics, including:

- **Cutting time**: Technology makes all electronic places adjacent, for example the Internet, which allows each one of them to obtain the necessary information and data in a short time, regardless of geographical location.

- **Increasing productivity**: IT works to raise productivity when used well and effectively. - **Flexibility**: Multiple uses of information technology to meet our multiple needs, the simplest example of the computer that we use in our daily lives and practical, it is a tool to write and carry out various complex processes such as communication of distance or proximity and it gives the production of high efficiency, Machine limited use.

- Telemedication: It means the fastest and smallest and least expensive, one of the most important features of information technology is characterized by continuous improvement in speed memory capacity. (Rich. and Lalush. 2001) Obstacles to the use of information technology in teaching: Several studies (Fahd, Mousa 2000, Almajhaji, Al-Obeidat 1999, Muhsin 2000 and Hind Al Hashimah 2014) indicated that there are obstacles to the transformation of the professor and his use of information technology teaching. which were follows: in as - Lack of necessary equipment and infrastructure.

- Poor training in how to employ IT in teaching.

- High material cost.

- Technical problems such as interruption of communication while searching or sending messages.

- The inability to use the computer and various technical tools.

- Fear and fear of using technology innovations in education.

- Lack of training of teachers and lack of adequate training programs especially in the use of information technology in education.

- Difficulty accessing the Internet sometimes.

- Failure to provide laboratory technicians.

- The difficulty of transferring devices and means of information technology to the classrooms.

- Fear of some professors from entering sites that are incompatible with values and ethics.

- No digital library.

Despite these constraints, we find that many studies have emphasized the need to use technology in teaching as it creates an exciting and stimulating environment for teaching and learning by the learner leads to master what he learns, which increases the effectiveness of education and education.

Previous studies:

Mansoor Bin Ali Al Shehri (2010) The use of faculty members at King Saud University for Information and Communication Technologies (ICT) in the educational process. The study aims to identify the degree of use of ICT faculty members in the educational process, as well as the knowledge of those who have previously attended training courses In this area, it also seeks to reveal the quality of the difficulties that can hinder them from their use in education. The study data were collected through the questionnaire distributed to (176) faculty members. The results showed that the rate of general use of ICTs among faculty members in the educational process is relatively low, and the study revealed that only 30.1% of them have already participated in training courses in this field, The difficulties that hinder their use in education.

Sulaiman,Awda (2012): The reality of the use of ICTs and the obstacles to using them in teaching with teachers and teachers of the schools of education of Al-Shobak Brigade / Jordan. The study aimed at identifying the extent to which a sample of the teachers and teachers of the Directorate of Education in Al-Shobak District knew about the basic applications and software of ICT, and the extent of their use and employment in the subjects they study, as well as identifying the obstacles that prevent them from using them. 40) were applied to a sample of (101) teachers, randomly selected from the schools of the Directorate of Education, which are deployed in all districts of the Shobak Brigade. The results of the study showed that the majority

of the respondents practiced the various applications and software of information and communication technology sufficiently, but their use and employment for teaching purposes was low. The results also revealed some obstacles that hindered their use of ICTs in teaching. And some are linked to weak training in how ICT is employed in teaching.

Turkey (2010), aimed at determining the requirements of using e-learning in the faculties of King Saud University, the results of the study confirmed the importance of holding training courses for the design of e-learning and teaching courses for faculty members in the field of computer, The educational environment required to implement e-learning strategies effectively. The study recommended training students to use computers and the Internet in education by providing schools with the necessary equipment.

Al-Reem (2008) conducted a study on female teachers in the Eastern Province of Saudi Arabia, with the aim of identifying the obstacles facing their use of information and communication technology represented by their use of the Internet in education. The study identified a number of obstacles such as: Such as interruption of communication during the search, occasional browsing, sometimes slow communication, and trends in the use of technology that were not aware of the importance of this technology, inability to use computer and language, fear of access to prohibited places calling for And values of religion and ethics, and the many tools of research centers, and recommended the study of the need to prepare training programs for teachers to train them on the use of information and communication technology.

Field study procedures:

The Study Methodology: In this study, the researcher adopted a descriptive analytical approach that fits the subject of the research.

The Study population: The study population includes faculty members from the Red Sea University (350) members.

The study sample:

The researcher selected from the research community a sample of (60) faculty members from the Red Sea University, with a percentage of (17%). The sample was chosen randomly.

The Study tool:

In order to achieve the objectives of the study, the researcher prepared a questionnaire to identify the detection of obstacles to the use of information technology in teaching with a sample of professors of the Red Sea University. , After the researcher acquainted with the literature related to the subject of the study, found that it used the method of questionnaire means to collect information, so the researcher sees it as an appropriate tool to collect the information needed for this study and then analyze data.

To achieve the above purpose, the researcher divided the questionnaire into two parts:

SECTION I: consideration of personal data.

Section II: included (19) paragraph to answer the questions of the study

Validity of the study tool:

To ensure the validity of the study tool and its validity for the measurement for which it was developed, the researcher presented the paragraphs after their classification in the previous fields to a group of arbitrators and experts in the university. All the arbitrators have a doctorate degree in this field. The researcher asked the arbitrators to express their opinion on the appropriate The researcher considered that the approval of the arbitrators on the occasion of each paragraph is an indication of its sincerity in measuring the field that was prepared for

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measuring it. The researcher took the notes of the arbitrators in terms of addition or deletion and correction. The researcher designed the questionnaire in its final form which consisted of (19) for the areas that previously mentioned.

Stability of the study instrument:

The researcher divided the questionnaire into fields in order to calculate their coefficient of stability using the Cronbach Alpha equation to calculate the stability coefficient value for the fields of the questionnaire and the total score was as follows:

Table (1)Stability coefficient for all resolution sector	tions
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Stability	coefficient
	(Alpha
	Cronbach's)
	paragraphs
Lack of sufficient computers in the classroom	78.1
I do not have enough time to employ IT in teaching	76.5
There is no adequate infrastructure for using ICT in teaching	91.2
Lack of educational software to serve the courses I teach	88.3
I do not have enough experience in how to use IT in teaching	68.9
The educational sites serving the courses I teach are not available on the	84.4
Internet	
Computer lab environment is not suitable for the use of information technology	77.5
in teaching	
computers available in the laboratory do not match the numbers of students	92.9
Lack of experience among most students in computer use, Large numbers of	87.7
students in the classroom	
The resistance of many in the university environment to change from	82.6
traditional ways of teaching to modern methods and the use of information	
technology in teaching	
I'm afraid. Internet information is incompatible with beliefs, values and habits	89.1
have no desire to use information technology in teaching	93.2
No screens available in classrooms	82.6
I have no conviction that IT serves the course I teach	79.8
I feel that the use of computers in teaching the educational process loses its	88.4
human nature	
I do not care about the use of information technology in teaching	93.4
stability coefficient for all paragraphs	85.4

From the above, the researcher concludes that the questionnaire in all its subjects has an appropriate stability for use for the purposes of this study, with a total stability factor (85.4%). Procedures for applying the study tool

After verifying the validity and stability of the questionnaire ,the researcher prepared its final form, distributed it to the study sample which was (60)

faculty members

statistical analysis:

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In order to reach results that support the objectives of the study, the researcher used the following statistical methods and tests:

- Duplicates and percentages of personal study data.

- The arithmetical averages and standard deviations of the fields and paragraphs of the questionnaire.

- Stability coefficient (Alpha Cronbach's) to test the stability and validity of the study tool.

Resultsof the studyandits discussions:

The study aimed at identifying the obstacles to the use of information technology in teaching. In order to achieve the objectives of the study, the researcher designed a questionnaire and after verifying its validity and the coefficient of its stability, distributed and coded it and entered it for the computer and processed statistically using the Statistical Package for Social Sciences (SPSS) Statistical Package For Social Since .

The results of the study are as follows:

Gender	Indicates	percent
Male	35	58%
Female	25	41%
Total	60	100%

The above table shows that 58.3% of the study population is male. While the percentage of females is 41.7%.

Frequency	Indicates	percent
BA	10	16.7
Master	21	35.0
PhD	27	45.0
PROF	2	3.3
Total	60	100%

Table (3): Demonstrates the scientific qualification:

The above table shows the academic qualifications of the study population. The percentage of those holding a bachelor's degree is 16.7%, while those holding a master's degree and doctorate (80%) have a professor's degree (3,3%)

Table (4)Type of faculty:					
Туре	Frequency	Percent			
Theory	22	36.7			
Applied	38	63.3			
Total	60	100%			

The above table shows that the percentage of applied colleges is the highest (3.63%), while the theoretical colleges reached (36.7%).

Table (5)Years of Experience

	Years of experience	Frequency	Percent
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Less than 5 year	13	21.7
(5 - 9) years	19	31.7
(10 - 14) years	17	28.3
More than 15 years	11	18.3
Total	60	100%

The table above shows that the percentage of those who had years of experience (from 5 years to 9 years) was the highest (31.7%), while those with years of experience (10 and under 14) were 28.3% (Less than 5 years) were (21.7%).

The first question, which states " what are t<u>he obstacles to the use of information technology</u> in a sample of faculty members of the University of the Red. Sea?

To answer this question, percentages and frequencies were extracted. The following table illustrates this:

Ν	Table (0) Frequency and percentage of paragraph	Yea	s	No	
		Ν	%	Ν	%
1		46	76.7	14	23.3
	Lack of adequate computers in the classroom				
2	I do not have enough time to employ IT in teaching	25	41.7	35	58.3
3	There is no adequate infrastructure for the use of information	43	71.7	17	28.3
	technology in teaching				
4	Lack of educational software to serve the courses I teach	41	68.3	19	31.7
5	I do not have enough experience in how to use IT in teaching	19	31.7	41	68.3
6	There are no educational sites that serve courses I teach on the	14	23.3	46	76.7
	Internet				
7	The computer lab environment is not suitable for the use of	13	21.7	47	78.3
	information technology in teaching				
8	The computers available in the lab do not match the numbers	43	71.7	17	28.3
	of students				
9	Lack of experience of most students in computer use	39	65.0	21	35.0
10	Large numbers of students in the classroom	46	76.7	14	23.3
11	Resistance of many in the university environment to change	39	65.0	21	35.0
	from traditional ways of teaching to modern methods and the				
	use of information technology in teaching				
12	I fear Internet information conflicts with creed, values and	18	30.0	42	70.0
	habits				
13	I have no desire to use information technology in teaching	18	30.0	42	70.0
14	No screens are available in the classrooms	35	58.3	25	41.7
15	I have no conviction that IT serves the course I teach	18	30.0	42	70.0
16	I do not know how many educational sites serve the courses I	19	31.7	41	68.3
	teach				

Table (6)Frequency and percentage of paragraphs

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17	I feel that the use of computers in teaching is losing the	25	41.7	35	58.3
	educational process of its human nature				
18	I do not care about the use of information technology in	24	40.0	36	60.0
	teaching				
19	My lack of English impedes my use of information technology	19	31.7	41	68.3
	in teaching				

It is clear from the above table that the total number of students in the sample of the study expressed the lack of sufficient computers in the number of students in the classrooms, and the large numbers of students in the classroom, which amounted to (76.7) The previous table also shows that there is no adequate infrastructure for the use of information technology in teaching (71.7%) Followed by the large number of students in the classroom and the computers available in the laboratory is not commensurate with the preparation of students and also accounted for (71.7)

This is followed by the return of Sulaiman (2012) and the study of Lal, ZakariaYahya (2000). **The second question**, which states: "What are the statistical significant differences in the obstacles of the use of information technology in a sample of faculty members at the University of the Red Sea due to the gender variable (male / female).

To answer this question, Table (7) shows the mean, standard deviation, value (v), dialect value and level of significance.

14		temean, su	indui dae i n	acton, raide	(,), and bet , and can all of ononsignificant con-				
				value (t)	value (t)	significance level			
					tabular				
Sex	Male	72.15	6.47	23.7381	2,76	at the significance level of			
	female	108.78	5.62			0.01			

 Table (7)
 Themean, standarddeviation, value (v), dialectvalueandlevelofsignificance.

Table (7) shows that there are statistically significant differences at the level of (0.05) about the obstacles in the use of information technology in a sample of faculty members of the Red Sea University attributed to gender variable in favor of males. This result is consistent with the study of Lal, ZakariaYahya (2000) and the study of the soldier, Alia Abdullah (2000)

The third question, which states: "What are the statistical significant differences in the constraints of the use of information technology in a sample of the faculty of the University of the Red Sea due to the variable type of college (applied / theory).

To answer this question and table (8), we show the mean, standard deviation, value (v), dialect value, and level of significance.

Table (8), Themean, Standard Deviation, value (v), Dialect Value, and levelof significance
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				value (t)	value	(t)	significance level			
					tabular					
type of	Theory	73.0	6.51	22.169	2.66		at the significance level			
college	Applied	120.0	9.37				of 0.01			

Table (8) shows that there are apparent differences between the arithmetical averages at the level of (0.05) on the obstacles of using information technology in a sample of faculty members

at Red Sea University due to the variable of the type of college in favor of theoretical colleges. This finding is consistent with a study of ZakariaYahya (2000)

Question 4: What is the statistical significant differences of the obstacles in the use of information technology in teaching in a sample of faculty members at the University of the Red Sea due to the variable of scientific qualification (BA, Master, PhD, Prof).

In order toanswer this question, the researcher used the analysis of variance (One Way ANOVA) in the case of independent samples to determine if there were statistically significant differences between the mean of the sample estimates. The statistical significance differences in the constraints of the use of information technology in the sample Of faculty members at the University of the Red Sea are attributed to the variable of scientific qualification, The results shown in Table (9)

	Source of variation	average	Total	(F)	Probability Value
		squares	squares		
BA	Within groups	37.31	18.66	0.66	0.518*
	Between groups	3.324	28.17	-	
	Total	3.361			
Master	Within groups	6.79	3.4	0.13	0.878*
	Between groups	3.105	20.10	-	
	Total	3.112			
PhD	Within groups	2.19	1.10	0.07	0.937*
	Between groups	1.991	16.73	-	
	Total	1.993			
PROF	Within groups	19.75	9.88	0.32	0.724*
	Between groups	3.634	30.54	-	
	Total	3.653			
Total	Within groups	664.06	332.03	0.62	0.540*
	Between groups	63.700	535.29	1	
	Total	64.364			

 Table (9) The ANOVA test shows the scientific qualification variable

The difference between the averages is not statistically significant at the level (0.05). Table (9) shows that there are no statistically significant differences in the statistical significance of the obstacles in the use of information technology in a sample of faculty members at Red Sea University due to the variable of scientific qualification. This finding is consistent with a study of ZakariaYahya (2000)

Conclusion& Recommendation:

The study reached the following results:

1. The lack of adequate computers in the number of students and the large numbers of students in the classroom is the biggest obstacle to the use of information technology in teaching (%76,7)followed by the lack of suitable infrastructure for the use of technology (%71.7). The computer equipment available in the laboratory is not suitable for the students' preparation. It is (%71.7.) The least of the obstacles is the computer lab environmentis not suitable for the use of information technology in teaching (%21,7).

2. There are statistically significant differences at the level of significance (0.05) in the constraints of the use of information technology in the sample of the study due to gender variable in favor of males.

3. There are apparent differences between the arithmetical averages at the significance level (0.05) on the obstacles to the use of information technology in the sample of the study due to the variable type of college in favor of theoretical colleges.

4. There are no statistically significant differences in the obstacles to the use of information technology in the study sample due to the variable of scientific qualification

Recommendations:

The results of the study recommend the following:

1-The necessity of training and qualifying the university professor in the field of the use of information technology in teaching and scientific research and the work of specialized courses for this purpose and provide full technical and technical support for them.

2-. Raising the awareness of university employees about information technology and the importance of its use.

3- Establishing specialized centers in the universities in the field of information and communication technology to supervise the training and qualification of professors

4-. Providing the necessary infrastructure for the use of information technology in teaching equipment and programs.

5 - Improve the environment of laboratories and classrooms to be appropriate and equipped to use information technology and provide the appropriate number of equipment and tools of information technology.

6- The preparation of classrooms and design in proportion to the numbers of students and provide them with a sufficient number of computers.

7 - The need to provide sufficient number of technicians in the colleges to overcome the technical difficulties of the use of information technology in teaching

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