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THE OBSTACLES HINDERING THE INTEGRATION OF ICT IN PUBLIC HIGHER EDUCATION INSTITUTIONS IN LIBYA

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Abstract

The present study aimed to explore the obstacles hindering the integration of information and communication technology (ICT) in public higher education institutions in Libya during the first semester of the academic year (2019/2020). The researcher selected a purposive sample consisting of 325 faculty members who work at Elmergib University in Al-Khums, Libya. He developed a five-point Likert questionnaire and distributed the questionnaire forms to the members of the chosen sample. However, 311 forms were retrieved. 301 forms are considered valid for analysis. The program that was used for the analysis of quantitative data is the SPSS program. It was found that faculty members at Libyan public higher education institutions don't have good capabilities in using ICT. It was found that there are several obstacles hindering the ICT integration in public higher education in Libya. Such obstacles include: the inadequacy of the professional development and training courses provided to those faculty members. They include: facing problems when accessing internet, and the poor quality of the provided training. They include: showing resistance to employing technology-based teaching methods, and showing poor attention to such integration by the concerned ministry.

Keywords: Obstacles, ICT, university, Libya.

1. Introduction:

During this century, using technology has become something essential. In fact, it has affected the way people live, work, think and etc. Technology has been playing a significant role in obtaining and sharing knowledge. Therefore, it's used in many sectors today, including the educational sector (Grabe and Grabe, 2007). In the light of the increasing use of technology, educational institutions today must seek integrating information and communication technology (ICT) in education. Such

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integration must also involve curricula. It's needed for enabling students to live and work in a society that is dominated by knowledge economy (Ghavifekr et al., 2012).

(ICTs involve the web, e-system, computers, laptop, e-books, iPads, personal digital assistants, radio, TV, projectors and etc. (Fu, 2013). The integration of ICT in education refers to the process of employing technology-based teaching and learning methods (Jamieson-Procter et al., 2013). It's considered useful for instructors and pupils too. It may involve the use of: databases, educational videos, electronic mind-mapping, electronic brainstorming, music, and the web (WWW) (Finger & Trinidad, 2002). In addition, it shall increase students' creativity and improve their imagination. It shall enable students to obtain knowledge. It shall encourage students to communicate with their colleagues. It shall encourage students to engage in class activities. It shall improve the quality of the teaching-learning process. It shall develop students' skills in writing and reading. It shall enable students to express their thoughts and ideas. It shall make students show a better behavior. It shall improve students' learning experiences. It shall enable instructors to prepare well for the class. It shall enable instructors to create their own resources and material (Ghavifekr and Rosdy, 2015).

It shall enable students to improve their learning skills and expand their knowledge. It shall improve the educational planning process. It shall provide support and assistance for students when doing their assignments and carrying out academic projects. It shall enable students to produce "productive knowledge" (Nisar et al., 2011). It shall create an environment that promotes creativity among students and supports self-directed learning. It shall promote collaborative learning. It shall participate in improving the students' critical thinking skills (i.e. higher-order skills). It shall facilitate the learners' access to the material of the course. It shall positively affect the student-instructor relationship and enrich students' vocabulary (Fu, 2013).

Despite the advantages of the integration of ICT in education, there are barriers hindering that especially in development countries. Such barriers in developing countries may be classified into: cultural, infrastructural, political and economic barriers, and barriers related to the government policies. For instance, developing countries usually have poor IT infrastructure. In addition, the integration of ICT is affected by the amount of funds allocated in the budget of the government and budget of the concerned institutions for investment in the field of ICT. It's affected by the financial status of the society's members (i.e. living conditions) and the beliefs of the policy makers. Regarding the cultural barriers, they may include: attitudes, laws, beliefs, morals and etc. For instance, most of the known electronic programs, games, and TV shows are created by Europeans or Americans whose cultural background differs from the cultural background of the ones living in developing countries. That discourages the faculty members in developing countries to use ICT in class.

It should be also noted that language is the most important cultural barrier that hinders the use of ICT in education in the developing countries. For instance, most of the known software and programs are created in English and European languages. That discourages the faculty members in developing countries to use ICT in class (Suliman et al., 2008). The researcher believes that ministries in developing countries must conduct studies to identify and address the obstacles hindering the integration of ICT in schools, training centers, universities and kindergartens. That's because improving the quality of education serves as the first step towards

achieving development in all the sectors. Therefore, the researcher believe that it is necessary to conduct the present study.

2. Statement of the Problem:

The use of ICT in higher education institutions is very useful. For instance, it shall enable students at such institutions to share information and material at any time. It shall enable students to communicate with their colleagues to discuss academic issues at any time. In a virtual classroom, ICT shall enable students to express themselves, analyze and address problems, and explore ideas. However, the availability of ICT isn't enough for benefiting from it. In fact, in addition to having ICT, there must be teachers who are capable of using ICT effectively in class in order to meet the intended academic goals (Koc, 2005)

However, there are several obstacles hindering the integration of ICT in education. Such obstacles may include: the instructors' incapability to access to computer labs, the absence of such labs, and instructors' poor capability to use ICT effectively in education. They may include: the inadequacy of the professional development courses in the field of ICT, the inadequacy of the lecture duration, and the absence of technical support. In addition, the management of many educational institutions discourage instructors to use ICT in education. Many educational institutions have ICT equipment that are not functioning, because they need maintenance (Ghavifekr and Rosdy, 2015). Due to the significance of integrating ICT in higher academic institutions, the obstacles hindering such integration must be identified in order to be addressed. Therefore, the researcher of the present study aimed to identify the obstacles hindering the integration of ICT in public higher education institutions in Libya. Conducting the present study shall encourage the Libyan government to make reformations in the educational sector. It shall enable the management of public higher education institutions to make reformations

3. Objectives:

The present study aimed to:

1. Identify the faculty members' capabilities at public higher education institutions in Libya in using ICT
2. Identify the obstacles hindering the integration of ICT in public higher education institutions in Libya

4. Questions:

The present study aimed to answer the following:

1. What is the level of the faculty members' capabilities at public higher education institutions in Libya in using ICT?
2. What are the obstacles hindering the integration of ICT in public higher education institutions in Libya?

5. Significance of the Study:

This study is significant because the studies that address such obstacles in public higher education institutions are very scarce. Thus, it fills a gap in the relevant literature. It's significant because it shall provide the Libyan government with knowledge about the reformations that must be taken in Libyan higher education institutions. That shall enable the latter government to make effective decisions for making reformations in the country. Making such reformation is needed for

addressing the implications of the Libyan civil war. It's significant to conduct the present study because it's useful for the following categories:

1. Leaders at Libyan public universities: This study provides those leaders with recommendations for overcoming the obstacles hindering the integration of ICT in higher education.
2. Officials at the Libyan Ministry of Higher Education and Scientific Research: This study provides those officials with knowledge about such obstacles. That shall enable those officials to develop effective plans for overcoming such obstacles

6. Limits:

The present study was conducted during the first semester of the academic year (2019/2020) at Elmergib University in Al-Khums, Libya.

7. Definitions

7.1. Theoretical definitions:

Obstacle: It's "Something that stands in the way of or holds up progress" (American Heritage® Dictionary of the English Language, 2015)

ICT: It involves the web, e-system, computers, laptop, e-books, iPads, personal digital assistants, radio, TV, projectors and etc. (Fu, 2013).

7.2. Operational definitions

Obstacles: They refer to the obstacles hindering the integration of ICT in public higher education institutions in Libya.

University: It refers to Elmergib University in Al-Khums, Libya.

8. Theoretical Framework:

The factors affecting the use of ICT in higher education may include: a)- providing students and instructors with inadequate support, b)- the poor competency of instructors in using some computer programs, c)- dedicating inadequate funds for the professional development of staff & d)- the poor cooperation between faculty members in the higher education institution and the faculty members in other institutions (Sinko, 2002). The obstacles hindering the use of ICT in education can be categorized into: instructor-level barriers, and organizational-level barriers. The instructor-level barriers may include: the instructor's lack of confidence in his/her own IT capabilities, and showing resistance to change. The organizational-level barriers may include: inadequacy of the provided training and ICT resources (Jones, 2004). They may include: facing difficulty in accessing ICT resources, poor competency in using ICT, providing inadequate attention to staff professional development and lack of IT support (Bingimlas, 2009). They may include: facing technical problems, such as: virus attacks, poor internet connection, inadequate technical support, and printer-related problems (Türel and Johnson, 2012). The obstacles hindering the integration of ICT in education may include: having inadequate administrative support for making such integration and having limited amount of experience in using ICT in education. In addition, instructors aren't motivated to make such an integration. Many instructors do not have ideas about the way of making such an integration (Fu, 2013).

The barriers hindering the integration of ICT in university education in Nigeria may include: providing inadequate technical support to the instructors, providing poor services of maintenance, and having poor IT infrastructure. For instance, in some Nigerian universities, it may take weeks to repair a computer that is not operating. The latter barriers include: showing resistance to the use of ICT-based teaching

methods. They may include: having inadequate free time to seek professional development and improve skills in using ICT. They may include: difficulty in accessing the ICT equipment and facing technical problems in accessing the system. They may include: poor professional development and the lack of awareness among instructors about the effective role of ICT in education. They may include: the lack of governmental attention in setting plans and providing resources in order to integrate ICT in education ((Nwankwoala et al., 2013). The difficulties that may hinder Saudi universities from using ICT include: the difficulty to access to ICT equipment, and having inadequate training and amount of time (Al-Mulhim, 2014)

There are several challenges hindering the use of ICT in African universities. Such challenges may include: the inadequacy of the experienced and trained technical staff who are capable of controlling, managing and maintaining the available ICT resources. They include: the lack of the theoretical knowledge that's possessed by the ICT staff and the poor skills of such staff in maintaining, controlling, and management of ICT equipment and software. They include: the incapacity of universities to retain and acquire competent human resources who are specialized in IT due to the low salaries. They include: the poor budget dedicated for the management and development of ICT. They include: the lack of awareness among the management and leaders of universities about the significance of integrating ICT in higher education. In addition, universities and governments in developing countries do not set policies that aim at ensuring that such integration shall be carried out efficiently and effectively (Murgor, 2015).

The challenges hindering the use of ICT in universities may include the poor computer skills of the staff. They include: the lack of knowledge of the university management about the way of maintaining, managing, developing, controlling and utilizing information systems. They include: experiencing political instability by the country which shall hinder the country from achieving development in all the areas or some areas. They include: the inadequacy of the funding provided to universities which hinders universities from providing adequate ICT facilities and equipment. They include: the poor reward and incentives system of the administrative staff and instructors in universities. That discourages them from exerting effort to integrate ICT in education effectively (Murgor, 2015).

9. Empirical Studies:

Suliman et al. (2008) aimed to explore the barriers hindering the use of ICT in higher education institutions in Sudan. They conducted interviews with several students and employees who were selected from 4 universities. It was found that such barriers include: the inadequacy of the staff training, the scarcity of the funds dedicated for staff development, the high brain-drain rates, and the lack of adequate number of competent faculty members. Such barriers include barriers related to staff retention. That's because the salaries and benefits in Sudanese universities are low. That leads to having low job satisfaction levels. Such barriers include: the lack of knowledge among the faculty members about the way of using ICT due the inadequacy of the training courses provided to them. They include: the lack of governmental plans for increasing such integration and the scarcity of the funds dedicated for supplying adequate ICT tools and software. Such obstacles include: the inadequacy of the laws regulating the use of ICT (Suliman et al., 2008).

Chitanana et al. (2008) aimed to explore the challenges hindering universities in Zimbabwe from using e-learning. The sample consists from 86 faculty members and a questionnaire was used. It was found that 89% of the respondents use computers

for preparing for the lecture. It was found that such challenges include: the inadequacy of the training and professional development courses provided for faculty members. Such challenges include: lack of technical support, suffering from problems in accessing internet, difficulty in accessing the computers at the computer lab, poor administrative support, and lack of knowledge about the IT-based teaching methods (Chitanana et al., 2008).

Dang (2011) aimed to explore the barriers hindering the faculty members at Hanoi University in Vietnam from integrating ICT in education. 350 questionnaire forms were distributed to faculty members. However, 222 ones were retrieved and analyzed. 43 faculty members were interviewed. NVIVO and SPSS were used. It was found that ICT is used much for lesson preparation. It was found that such barriers include: the belief that such integration shall increase the workload, and the lack of access to ICT equipment. For instance, faculty members can't easily access the computers that are available at the library and the computer labs. It was found that many lecture halls aren't provided with computers. Such barriers include lack of training on using ICT. For instance, the faculty members received 5 hours of training during the two years preceding the year of conducting the study. In addition, many faculty members feel that they lack confidence in their ICT capabilities. In addition, faculty members are not provided with ICT plan (Dang, 2011).

Mathevula and Uwizeyimana (2014) aimed to identify the challenges hindering the use of ICT in learning activities in the secondary schools located at South African rural areas. 222 questionnaire forms were distributed to school teachers and principals in Limpopo, South Africa. However, 146 forms were retrieved and analyzed. It was found that such challenges include: the lack of ICT resources at schools, and the inadequacy of the provided training. In addition, the provided training doesn't address nor develop advanced computer skills. Such challenges include: the lack of attention provided by schools and the Ministry of Education to the integration of ICT in education. 88% of respondents suggested that there's no access to internet (Mathevula and Uwizeyimana, 2014).

Raman and Yamat (2014) aimed to explore the barriers hindering English language teachers from integrating ICT in education in the secondary schools in China. Interviews were conducted with twelve teachers. It was found that such barriers include: too much workload, inadequacy of the period's duration, poor ICT skills & knowledge, inadequacy of the ICT training, and preferring conventional teaching methods over the modern ones (i.e. resistance to change) (Raman and Yamat, 2014)

Ghavifekr et al. (2016) aimed to explore the challenges hindering the use of ICT in school education in Malaysia. They adopted a quantitative approach and used a questionnaire. Questionnaire forms were distributed to 120 secondary school teachers. However, 100 forms were retrieved and analyzed. It was found that such challenges include: having a limited technical support, providing ineffective training of poor quality, limited access to internet, problems in internet connection, and the poor competency of the teachers in using ICT resources. In addition, the school management aren't concerned in integrating ICT in education (Ghavifekr et al., 2016).

Laabidi, and Laabidi (2016) aimed to explore the barriers hindering the integration of ICT in university education in Morocco. They used a questionnaire. The sample consists from 46 faculty members working at Moulay Ismail University. It was found that such barriers include: having too many students in class, the inadequacy of

the available computers, absence of internet service, and providing insufficient technical services and support (Laabidi, and Laabidi, 2016)

10. Approach and Method for Data collection:

The researcher adopted an analytical descriptive approach and a quantitative approach. For data collection, a questionnaire was used and the relevant books, reports and studies were reviewed.

11. Instrument

For obtaining data from the sample, a two-part questionnaire was developed. The five point Likert scale is adopted. Through the first part, the researcher collected data about the respondents’ experience and competency in using ICT. Through the second part, data is collected about the obstacles hindering the integration of ICT in public higher education institutions in Libya. The researcher developed the instrument after reviewing the studies made by: Suliman et al. (2008); Murgor (2015); Mathevula and Uwizeyimana (2014); Ghavifekr et al. (2016); Dang (2011); Raman and Yamat (2014); Laabidi, and Laabidi, (2016); and Ghavifekr and Rosdy (2015).

12. Validity

After the researcher created the initial version of the questionnaire, he passed it to two professors. Those professors are specialized in educational sciences and work at Libyan universities. They were asked to provide the researcher with their opinions about the capacity of the questionnaire’s clearness and capacity to meet the intended objectives. They suggested that the questionnaire is clear, and highly capable to meet the intended objectives. They suggested that the questionnaire is free from language mistakes. However, one of the experts re-drafted a statement and the other expert deleted a statement. These changes were made in order to produce the final version of the questionnaire which consists from 16 statements.

13. Reliability

Cronbach alpha coefficient value was calculated. It’s 0.866 which is high. Thus, the instrument is highly reliable and shall provide results that are highly accurate and reliable too.

14. Population and Sample:

The population involves all of the faculty members who work at public higher education institutions in Libya. The researcher selected a purposive sample consisting of 325 faculty members who work at Elmergib University in Al-Khums, Libya. He developed a five-point Likert questionnaire and distributed the questionnaire forms to the members of the chosen sample. However, 311 forms were retrieved. 301 forms are considered valid for analysis. The program that was used for the analysis of quantitative data is the SPSS program.

Table (1): Data about the respondents

Variable	Category	Frequency	Percentage%
Experience	7 years or less	52	17.27575
	8-14	179	59.46844
	15 years or more	70	23.25581

N=301

It was found that 17.27% of the respondents have 7 years of experience or less and 59.46 % of the respondents have 8-14 years of experience. It was found that 23.25% of the respondents have 15 years of experience or more. Thus, Elmergib

University seeks retaining and recruiting the faculty members who possess many years of experience. That shall positively affect the quality of the teaching process in the latter university.

15. Statistical analysis and criteria

The researcher entered the obtained data into the SPSS program to analyze it. He also calculated frequencies, means, percentage, standard deviations and the reliability coefficient value. He adopted specific criteria for classifying means

Table (2): The criteria that are adopted for classifying the means

Range	Level	Attitude
2.33 or less	Low	Negative
2.34-3.66	Moderate	Moderate
3.67 or more	High	Positive

16. Results and discussion related to question one

Q.1: What is the level of the faculty members' capabilities at public higher education institutions in Libya in using ICT?

Table (3) presents the results that are related to question No. 1. The answer to this question is reached through calculating several percentages and frequencies:

Table (3): The faculty members' capabilities at public higher education institutions in Libya in using ICT

Question	Category	Frequency	Percentage%
How do you assess your competency in using ICT?	Excellent	18	5.980066
	Very good	39	12.95681
	Good	34	11.29568
	Fair	152	50.49834
	Poor	58	19.2691

N=301

It can be noticed that 5.98% of the respondents have excellent capabilities in using ICT and 12.95% of the respondents have very good capabilities. It was found that 11.29% of the respondents have good capabilities and 50.49 % of the respondents have fair capabilities. It was found that 19.26% of the respondents have poor capabilities. These percentages indicate that the faculty members at Libyan public higher education institutions do not have good capabilities in using ICT. They also indicate that faculty members at such institutions are in need for receiving many professional development courses about the use of ICT.

17. Results and discussion related to question two

Q.2: What are the obstacles hindering the integration of ICT in public higher education institutions in Libya?

Table (4) presents the results related to question No. 2. The answer to this question is reached through calculating several means and standard deviations:

Table (4): The obstacles hindering the integration of ICT in public higher education institutions in Libya

No	Statement	Mean	Std.	Level
1.	It's difficult to access to computer labs	2.14	0.35	Low

2.	The professional development and training courses aren't adequate	4.62	0.21	High
3.	The provided technical support is inadequate	4.70	0.14	High
4.	The lecture duration is inadequate for using ICT in education	2.19	0.43	Low
5.	There are too many students in class. That hinders me from using ICT during lecture	2.25	0.77	Low
6.	There are problems faced when accessing the internet which hinders me from using ICT during lecture	4.49	0.61	High
7.	The quality of the provided training is poor	4.66	0.11	High
8.	I prefer employing the conventional teaching methods overemploying the modern ones (e.g. technology-based methods).	4.75	0.55	High
9.	There is too much workload which hinders me from using ICT during lecture	2.27	0.28	Low
10.	The Ministry of Higher Education and Scientific Research doesn't provide much attention to the integration of ICT in higher education	4.77	0.61	High
11.	The management of the university doesn't encourage faculty members to use ICT during lecture	2.29	0.44	Low
12.	The government doesn't provide much attention to the development of policies that enhance the use of ICT in higher education	4.86	0.26	High
13.	The lack of ICT resources hinders me from using ICT during lecture	4.89	0.45	High
14.	Public Libyan universities are poorly funded which hinders the ICT integration in higher education	4.97	0.34	High
15.	The political instability in the country negatively affects the integration of ICT in higher education	4.37	0.52	High
16.	The country has poor IT infrastructure and services	4.22	0.47	High
Total		3.90	0.40	High

The total mean is 3.90. That means that the severity of the obstacles hindering the integration of ICT at public higher education institutions in Libya is high. It was found that respondents can easily access the computer labs, because the relevant mean is 2.14. It was found that professional development and training courses aren't adequate, because the relevant mean is 4.62. The latter result is consistent with the result concluded by Raman and Yamat (2014). The latter result may be attributed to the fact that such courses are considered costly. It was found that the provided technical support is inadequate, because the relevant mean is 4.70. The latter result is consistent with the result concluded by Ghavifekr et al. (2016). That may be attributed to the difficulty of recruiting and retraining experienced IT staff who are capable of maintaining ICT. It was found that the duration of the lecture is adequate for using ICT, because the relevant mean is 2.19. That's inconsistent with the result concluded by Yamat (2014). It was found that the number of students in the lecture hall is suitable which allows the faculty members to use ICT during lecture. That's concluded because the relevant mean is 2.25. That's inconsistent with the result concluded by Laabidi, and Laabidi (2016). That indicates that the university management is against having crowded classes.

It was found that there are problems faced when accessing the internet. Facing such problems hinders respondents from using ICT during lecture. That's concluded because the relevant mean is 4.49. The latter result is consistent with the result concluded by Ghavifekr et al. (2016). It may be attributed to concluding a contract with companies that provide cheap internet service of poor quality. It is attributed to the fact that the internet services in developing countries is in need for being developed. It was found that the quality of the provided training is poor, because the relevant mean is 4.66. That is consistent with the result concluded by Ghavifekr et al. (2016). That may be attributed to the provision of training courses that do not shed a light on advanced ICT skills and knowledge nor take the needs of the trainees into consideration. It was found that the respondents prefer employing conventional teaching methods over employing modern ones (e.g. technology-based methods). That's because the relevant mean is 4.75. The latter result is inconsistent with the result concluded by Raman and Yamat (2014). That may be attributed to the respondents' lack of awareness about the benefits gained from using technology-based methods.

It was found that the workload of the faculty members is not much. That allows the faculty members to use ICT during the lecture and set plans for that. That's concluded because the relevant mean is 2.27. The latter result is inconsistent with the result concluded by Raman and Yamat (2014). It was found that the Libyan Ministry of Higher Education and Scientific Research doesn't provide much attention to the integration of ICT in higher education. That's concluded because the relevant mean is 4.77. The latter result is consistent with the result concluded by Mathevula and Uwizeyimana (2014). It may be attributed to the poor knowledge of the officials at the latter ministry about the benefits gained from using ICT during lectures.

It was found that the management of Elmergib University encourages faculty members to use ICT in education, because the relevant mean is 2.29. The latter result is inconsistent with the result concluded by Ghavifekr et al. (2016). That indicates that the leaders at Elmergib University are highly aware about the role of ICT in improving the teaching-learning process. It was found that the government doesn't provide much attention to the development of policies that enhance the use

of ICT in higher education, because the relevant mean is 4.86. It was found that the lack of ICT resources hinders the faculty members from using ICT during lecture, because the relevant mean is 4.89. The latter result is consistent with the result concluded by Mathevula and Uwizeyimana (2014). It was found that public Libyan universities are poorly funded which hinders the ICT integration in higher education. That's because the relevant mean is 4.97. Such poor funding is attributed to the military situation in Libya. It's also attributed to the poor management of the country's resources.

It was found that the political instability in the country negatively affects the integration of ICT in higher education, because the relevant mean is 4.37. For instance, such instability makes the Libyan government focus on addressing military issues, instead of exerting efforts to develop various sectors, such as: the medical, and educational sectors. It was found that the country has poor IT infrastructure and services because the relevant mean is 4.22. That may be attributed to the economic implications of the Libyan civil war. Such economic implications hindered the Libyan government from developing such infrastructure.

18. Conclusion:

Through this study, the researcher aimed to promote awareness about the effective role of ICT integration in higher education institutions. It was found that the faculty members at Libyan public higher education institutions do not have good capabilities in using ICT. It was found that there are several obstacles hindering the ICT integration in public higher education in Libya. Such obstacles include: the inadequacy of the professional development and training courses provided to those faculty members. They include: facing problems in accessing the internet, and the poor quality of the provided training. They include: showing resistance to employing technology-based teaching methods, and showing poor attention to such integration by the concerned ministry.

19. Recommendations:

19.1. Recommendations for the Ministry of Higher Education and Scientific Research in Libya:

The researcher recommends:

- Providing more attention to the integration of ICT in higher education
- Developing policies that aim at increasing the latter integration
- Providing public universities with more funds in order to purchase the needed ICT equipment and software
- Exerting more effort to achieve political stability in the Libya. That's because achieving such stability shall lead to achieving development in all the fields, including the educational field
- Dedicating more funds for improving the IT infrastructure in Libya, especially in rural areas.

19.2. Recommendations for the management of public higher education institutions in Libya:

The researcher recommends:

- Providing faculty members at such institutions with more professional development and training courses
- Providing faculty members at such institutions with more technical support
- Concluding a contract with a telecommunication company that can provide such institutions with internet service of high quality

- Promoting awareness among faculty members about the significance of ICT integration in higher education institutions. That can be done through holding awareness-raising workshops and seminars.

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