Student's Readiness for E-learning in the Universities in Yemen

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Abstract—**The e-learning is an advanced version of the traditional education. It's defined as a way of learning by using the communication mechanisms of modern computer networks and multimedia, including voice, image, and graphics and mechanisms to search electronic libraries, as well as web portals, whether in the context of distance learning or in the classroom. The people engage in the transition to web-supported education are the administrative staff, the faculty, and the students. They all have their needs and they all should meet specific requirements in order to facilitate the transition. The article presents the results of questionnaire research of the student's readiness for e-learning in Yemeni universities.**

Keywords—information technology; higher education; e-learning; questionnaire research

I. INTRODUCTION (*Heading 1*)

A survey conducted with 230 students at Sana University and at the Technology and Science University of Yemen, makes it clear that, as a whole, learners have a positive evaluation of the integration IT in education. The choice of informants has been dictated by the fact that the students at these two universities come from a variety of ethnic, cultural, and religious backgrounds. In addition, these universities seem to host the most students and many of them are women, which is not common to all Yemeni universities.

II. METHODOLOGY

The study was conducted through modification of a questionnaire to study students' readiness for mobile learning [4]. To ensure the reliability property, the reliability coefficients for each axis of the study axes have been extracted by using Alpha Cronbach [2]. It is observed that the reliability coefficients is not less than the minimum acceptable to judge the extent to which the tool has reliability property (0.6), thus the reliability property is present. Therefore, the tool is valid, suitable for field application, and measuring.

III. RESULTS AND DISCUSSION

The following table presents a demographic analysis of the participants in terms of their gender, study level, and field of studies (Table I).

TABLE I.

		Frequency	Percent %
study level	third -Year	129	56.1
	fourth year	101	43.9
field of study	Applied	95	41.3
	humanitarian	135	58.7
gander	female	87	37.8
	Male	143	62.2

A. What is the students' evaluation of the infrastructure (computer labs - the Internet - the library) in the faculties of Yemeni universities?

To answer this question, it has been extracted the arithmetic mean and standard deviation of the degree of participants' response to the level of the total degree and of the statements' axis of evaluation as can be seen from the Table II.

As can be seen from Table II the average of the total degree of the participants' response to the axis of the evaluation is (2.28), which is a value that indicates the second alternative answer (No). Therefore, it can be concluded that there is a semi full absence of infrastructure, which is necessary for the application of information technology in the Yemeni universities in general. At the level of all the statements in this axis, they have the arithmetic mean values ranging from (1.99) to (2.58). Some of these values refer to the first alternative (Yes) which is related to the statements that occupy the order (A1- A9), which is a positive answer and means that the application of information technology requirements is available in Yemeni universities that have been identified regarding the students' evaluation of the infrastructure. While we find that, the average values for the rest of the statements refer to the second alternative (No) which is related to the statements that occupy order (A10-A20). This is a negative answer and means that the application of information technology requirements is not available in Yemeni universities that have been identified regarding the students' evaluation of the infrastructure.

TABLE II.

Order	Statement	Mean	Std. Deviation	Verbal meaning
Axis I: Evaluation of the students of the infrastructure (computer labs - the Internet - the library) in the faculties of Yemeni universities				
A1	A lab specialist is available to assist students.	2.58	.569	Yes
A2	Adequate lab space for students.	2.56	.531	Yes
A3	Computers in the computer lab at the college linked to an internal network.	2.51	.611	Yes
A4	Electric current is constantly available.	2.51	.527	Yes
A5	Internet service is available at the university library.	2.50	.543	Yes
A6	The number of computers in the lab on the number of students.	2.47	.581	Yes
A7	The computer lab is available in at the college Internet service.	2.44	.579	Yes
A8	Computers in the labs work well.	2.40	.596	Yes
A9	There is maintenance for equipment and accessories.	2.38	.668	Yes
A10	Programmes are new.	2.28	.615	No
A11	Library at your university has a sufficient scientific reference.	2.27	.643	No
A12	Computer lab in your college is linked to the main network of university.	2.16	.658	No
A13	There is updated for scientific references in the library.	2.13	.643	No
A14	Accessory devices like printers & scanners are available.	2.13	.414	No
A15	Library has is subscribed to scientific sites.	2.12	.643	No
A16	The speed of the internet is fast.	2.08	.474	No
A17	There are headsets in the labs.	2.04	.371	No
A18	Computer accessories like printers work well	2.02	.498	No
A19	There are additional facilities available for students with disabilities.	2.00	.443	No
A20	Printers can be used for research purposes.	1.99	.524	No

B. Does the student have the necessary capacities for the use of information technology?

As can be seen from Table III, the average of the total degree of the participants' response to the axis of the abilities of students in the use of information and communication technology is (2.50). It is a value that indicates the first alternative answer (Yes), which means that the students have the necessary abilities in the use of information and communication technology in general. At the level of all the phrases in these axis, they have the arithmetic mean values ranged from (2.14) and (2.79), most of these values refer to the first alternative (Yes) which is related to statements (B1-B7), where is a positive answer means that the students have the abilities in the use of information and communication technology in Yemeni universities. On the other hand, we find that the average values for the two statements which come last in order refer to the second alternative (No), where a negative answer means that the students do not have the abilities in the use of information and communication technology. These have been identified as (B8 and B9).

TABLE III.

Order	Statement	Mean	Std. Deviation	Verbal meaning
Axis II: the abilities of students in the use of information and communication technology				
B1	Using word processor to prepare a CV or a type a research report etc.	2.79	.431	Yes
B2	Using Email to send attachments	2.75	.452	Yes
B3	Using PowerPoint for presentations	2.74	.503	Yes
B4	Using the Internet to find digital database.	2.55	.587	Yes
B5	Using e-mail to communicate with the teacher by the Internet.	2.50	.582	Yes
B6	Using Discussion Forums to learn online.	2.43	.555	Yes
B7	Using an interactive site for learning the Internet.	2.43	.593	Yes
B8	Using video conferencing for online learning.	2.16	.516	No
B9	Using Curriculum is based on the Web.	2.14	.484	No
Students' abilities in the use of information and communication technology		2.50	.327	Yes

TABLE IV.

Order	Statement	Mean	Std. Deviation	Verbal meaning
Axis III: Perceptions of students about education on base Information and communication technology compared to the traditional education				
1C	I believe that the information and communication technologies contribute to the improvement of education.	4.51	.685	Strongly Agree
C2	I think that the video and audio texts can improve my level of education.	4.46	.823	Strongly Agree
C3	Learning based on ICT helps the exchange of information between universities.	4.35	.661	Strongly Agree
C4	I would like to study by the computer even if it may be difficult.	4.32	.742	Strongly Agree
C5	Information and communication technology allows exchanging information in an effective manner.	4.30	.863	Strongly Agree
C6	Expanding the scope of resources and exchange information available to students by using the internet.	4.19	.866	Agree
C7	A media of information technology provides an opportunity for students in remote areas who could not get a regular education to continue their studies.	4.17	.785	Agree
C8	A media of information technology will help students to identify the institutions of higher education in their own countries and abroad	4.17	.789	Agree
C9	Learning by online helps to exchange information between the student and the teacher.	4.12	.883	Agree
C10	Learning by ICT requires high computer skills.	3.80	1.059	Agree
C11	Learning by computer lacks the interaction between the student and the teacher.	3.72	1.127	Agree
C12	It is difficult to find good quality information on the internet.	2.93	1.169	Undecided
C13	Learning through information and communication technology takes more time than the traditional method.	2.61	1.135	Undecided
C14	I prefer learning by the traditional method, i.e. from books and not computers	2.53	1.076	Disagree

C. What is the perception of students towards the education based on information technology as compared with traditional education?

As can be seen from the Table IV, the average of the total degree of the participants' response to the axis of the perception of students towards education based on information technology compared with traditional education was (3.87), which is a value that indicates the second alternative answer (Agree). This means that the perception of students towards education based on information technology compared with traditional education is positive in general.

At the level of all the statements in this axis, the arithmetic mean values range from (2.53) and (4.51). Some of these values refer to the first alternative (Strongly Agree) which refers to the statement that occupy the order (C1- C5), where a positive answer means that the students have high positive perception towards the education based on information technology compared with traditional education in Yemeni universities which. These have been identified as follows (C1-C5). On the other hand, we find that the average values for the rest of the statements refer to the second alternative (Agree) which are statements (C6-C11), where a negative answer means that the students have positive perception to some extent towards education based on information technology

compared with traditional education in the Yemeni universities.

Additionally, it should be noted that the average values of statements (C12) and (C13) before the final respectively indicate to the third alternative (Undecided), where the answer Undecided means that the perceptions of students does not show a clear tendency towards the education-based information and communication technology compared to traditional education found in (C12 and C13).

In addition, the last statement refers to the value of its arithmetic mean to the fourth alternative (Not-Agree), where a negative answer means that the students have negative perception of education based on information and communication technology compared to traditional education as shown in (C14).

IV. TEST HYPOTHESES.

A. First hypothesis: There are not statistically significant differences in the respondents' response to the study axes due to the variable academic level of the student.

To ensure the correctness of this hypothesis was used Two Independent Samples T-Test [3].

TABLE V.

AXIS	Study level	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)
Evaluation of the students of the infrastructure	third year	129	2.28	.280	.296	228	.767
	fourth year	101	2.27	.303			
The abilities of students in the use of information and communication technology	third year	129	2.44	.343	2.962	228	.003
	fourth year	101	2.57	.290			
Perceptions about students based education Information and communication technology compared to the traditional education	third year	129	3.84	.409	1.046	228	.297
	fourth year	101	3.90	.411			

The test's results indicated in the Table V show that the level of significance values (Sig) is less than (0.05), at the level of the axis of students' abilities in the use of information and communications technology which means that there are statistically significant differences in students' abilities in the use of information and communication technology due to the variable academic level. These differences are in favour of students in the fourth academic year as can be seen from the value of the arithmetic average of this category, which is larger than the value of their peers from the third level.

While it is observed that the value of the level of significance at the level of the axis of students' evaluation of the infrastructure and the axis of the perceptions of students about education based on information and communication technology compared to the traditional education was greater than (0.05), it means that there are not statistically significant differences at the level of axes due to the variable the academic level of the student.

B. The second hypothesis: There are not statistically significant differences in the participants' response to the study axes due to the variable academic specialization for the student.

TABLE VI.

AXIS	field of study	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)
Evaluation of the students of the infrastructure	Applied	95	2.31	.247	1.798	228	.074
	Humanitarian	135	2.25	.314			
The abilities of students in the use of information and communication technology	Applied	95	2.61	.284	4.737	228	.000
	Humanitarian	135	2.41	.330			
Perceptions of students about education **base on** Information and communication technology compared to the traditional education	Applied	95	3.97	.364	3.395	228	.001
	Humanitarian	135	3.79	.424			

The test's results indicated in the Table VI show that the level of significance values (Sig) is less than (0.05), at the level of the axis of students' abilities in the use of information and communications technology and the axis of the perceptions of students about education based on information and communication technology compared to the traditional education, which means that there are statistically significant differences in participants' response in the two axes due to the variable the academic specialization, these differences in favour of students in the specialization (Applied) can be seen from the value of the arithmetic average of this category, which is larger than the value of their peers in the specialty (humanitarian).

Importantly, it is observed that the value of the level of significance at the level of the axis of students' evaluation of the infrastructure was greater than (0.05), it means that there are not statistically significant differences at the level of axis due to the variable academic specialization.

C. The third hypothesis: There are not statistically significant differences in the participants' response to the study axes due to the variable gender of the student?

To ensure the correctness of this hypothesis was used Two Independent Samples T-Test [3]. The results can be seen in Table VII

TABLE VII.

AXIS	Gander	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)
Evaluation of the students of the infrastructure	Female	87	2.22	.256	2.029	228	.044
	Male	143	2.30	.305			
The abilities of students in the use of information and communication technology	Female	87	2.41	.324	3.182	228	.002
	Male	143	2.55	.318			
Perceptions about students based education Information and communication technology compared to the traditional education	Female	87	3.85	.343	.544	228	.587
	Male	143	3.88	.447			

The test's results indicated in the Table VII show that the level of significance values (Sig) is less than (0.05) at the level of the axis of students' abilities in the use of information and communications technology and the axis of students' evaluation of the infrastructure, which means that there are statistically significant differences in respondents' response in the two axes due to the variable gender. These differences are in favor of (Male) as can be seen from the value of the arithmetic average of this category, which is larger than the value of their peers (Female).

While it is observed that the value of the level of significance at the level of the axis of the students' perceptions about education based on information and communication technology compared to traditional education is greater than (0.05), meaning that there are not statistically significant differences at the level of axis due to the variable the gender.

V.   SUMMARY

The successful integration of information technology in higher education will contribute to the solution of many problems facing developing countries [5]. Admittedly, there are many problems on the way, such as lack of investment in physical assets; scarcity of qualified academic staff; hesitation of some girls to register in universities due to the conservative culture society.

Still, the application of Information technology in higher education in Arab countries, and especially in Yemen, should not be based on technical decision but on strategic planning as a national choice to improve higher education so it can meet the economic and social development needs [1].

REFERENCES

[1] Adnan Sharaf Ali Yousef Al-Absi, Some aspects of the application of information technology

for learning in universities in Yemen. PhD thesis, South-West University "Neofit Rilski", Blagoevgrad, Bulgaria, 2017.

[2] S. Stoyanova, Basics of Psychological Measurements. Adaptation of the test. SWU "Neofit Rilski", Blagoevgrad, Bulgaria, 2007. (In Bulgarian).

[3] S. Stoyanova and I. Peneva, Methodological guide for conducting empirical psychological research. SWU "Neofit Rilski", Blagoevgrad, Bulgaria, 2014. (In Bulgarian).

[4] Tuparov G., Al-Sabri A. and Tuparova D. (2016). Students' Readiness for Mobile Learning in Republic of Yemen – a pilot Study: A study at University in Bulgaria. http://www.imcl-conference.org/lmcl2015 International Conference on Interactive Mobile Communication, Technologies and Learning, Thessaloniki, Greece, November 2015, pp. 19-20.

[5] H. Zeutoon, A New Vision in the e-learning concept-application – Issues, Evaluation, Dar Alsoltah, Riyadh, 54-59, 2005. (In Arabic).