Al-Rafidain Journal of Computer Sciences and Mathematics (RJCM)

www.csmj.mosuljournals.com

Design and Implement an Application to Measure the Readiness of Teachers to Adopt E-learning in Mosul Schools After Pandemic COVID-19

Dena Rafaa Ahmed[1] , Maisirreem Adhed Kamal[2], Rashad Adhed Kamal3

[1,2] College of Computer Sciences and Mathematics, University of Mosul, Aljamia, Mosul, Nenava, Iraq.
[3]College of Engineering, University of Mosul, Aljamia, Mosul, Nenava, Iraq.

Article information

Article history:
Received : 14/6/2021
Accepted : 13/9/2021
Available online :

Abstract

Nowadays, due to the rapid increment of the pandemic COVID-19 which affects the teaching environment, a need appeared to use a new alternative education style, which helps to decrement the injuries and the continuation of the education. This study designs an application to measure the teachers' readiness to use e-learning. A questionnaire was designed to collect as much information as possible to measure the teachers' readiness to adopt e-learning in Iraqi schools after pandemic COVID-19 by analyzing the factors that affect the education process. The questionnaire consists of thirty-three questions in the Arabic language and includes three sections (background information, attitude toward e-learning, and computer skills). The collected responses are taken from Mosul's primary and secondary schools' teachers and the sample size is (261). A test of reliability was carried out on the study instrument, and the value of Cronbach's alpha was 0.913. The MATLAB R2014a was used to build an application in order to do the analyzing process and determine the readiness of e-learning.

Keywords:
readiness, teacher, COVID-19, e-learning, questionnaire.

Correspondence:
Author : **Maisirreem A. Kamal**
Email: maisirreem_alsaigh@uomosul.edu.iq

1. INTRODUCTION

Nowadays, the most recent methods in education have been created and developed in many areas, where they took a fundamental dimension in business execution. The educational process has its portion in these changes that aims to create and develop the educational field and enhancing its methodologies and teaching methods by moving gradually toward the modern educational system, which is supported by new technology. In 2005, it had been taken note that around 32.2 million students got at least one e-learning course [1]. Generally, e-learning is the future of learning which focuses on both the content delivered and the individual requirements of learners [2]. The schools in Mosul city seek to progress with the continuity of the educational process by providing e-learning. Despite the availability of many electronic devices and applications to assist in completing the e-learning process, however, the effective usage of these techniques is a difficult task for both teachers and learners as long as it needs some training to develop skills for all the parties related to the educational field to face these difficulties especially improving the teachers' skills to use these new techniques for the benefit of the educational field. In order to complete this study, two main research questions have been addressed, the first one is (what are the teachers' attitudes toward e-learning and computer literacy at the public and private schools in Mosul city?), while the second one is (what are the deterrents that teachers may confront if they use e-learning technology in their teaching process?). This study aims to answer those two research questions.

2. Related work

Recently, many researchers start their studies to find a substitution way to traditional learning through the pandemic COVID- 19, one of the most important ways is e-learning. E-learning provides a suitable environment for both teachers and students to continue their courses.

In [3],according to the rapidly increase of using the e-learning system in all around the world, the e-learning evaluation becomes more important, in this paper the students in two different universities in the Kingdom of Saudi Arabia have been suffered to capture their opinions about the e-learning systems, and the evaluation plateframe based on the IS Success/Impact Measurement framework, which has been successfully implemented in similar studies. In this paper the positive effect has been referred to effect in the student particepent and increasing their productivity. The Moodle plateframe has been implemented in [4] Egyption university to aid delivering the e-content and to provide a better sycnirization to e-learning modules. And by using this module it shows that the use of interactive features increase the student motivation for the e-learning process.

Researchers in [5] examined the perspective of students in both online and face to face lectures and by using the EPEC hierarchy conditions which are the ease of use, the psychologically safe environment, the e-learning/ e-teaching efficiency, and the e-learning competence to measure the e-learning efficiency and many students generally prefer the e-learning over the person presentation or the e-learning is as good as face to face learning. In [6], the author used artificial intelligence especially intelligent agency to achieve intelligent e-learning in many fields like adaptability, autonomy, initiative, and sociality, and by studying and analyzing the multi-agent e-learning model it can make e-learning strategies for each different individual, and it used to improve the e-learning educations by improving the intelligent network education to provide a suitable quality e-learning education. Researchers in [7] studied online learning in the education institutions especially the intensive online learning environment which takes between 6 to 8 years rather than the not intensive online learning which generally takes between 12-13 weeks from the perspective of teachers and students, for the teachers they must develop their skills to promote a scientific and flexible approach, and improve their technological aspects, for student their ability to interact in the education environment in a right way and self e-learning is very important in the absents of regular learning or face to face learning. While in [8], authors studied the ability and feasibility of implementing an e-learning-teaching in Zabol especially in the secondary schools, they used the (Watkins/Trainer's) questionnaire (2004), 385 students participated in it in (2012/2013), and descriptive and inferential statistics are used to analyze the collected data and it is shown that the students with e-learning courses are more readiness for e-learning than others, and the student gender did not affect the student readiness for e-learning-teaching. [9] defined e-learning as a new approach which should be given, and shortly defined as a system with a web-based education environment as computer access, intranet, or internet. Nine simulation laboratories have been designed in two topics metals and polymers, as a result of these experiments the teachers and the students were interviewed, and as a concluded it was successful and can be applied to larger groups of students on different topics. [10] the improvement of the modern technology which is used in the learning methods attribute in improving the quality of the e-learning/ teaching methods, the training of using the human resource in higher education considers the highest level, therefor the university teacher must improve his teaching methods and how to plan and design his electronic lessons, in this research the author classified research with the experience analysis and design some electronic lessons plans to enhance the university e-learning. In [11] the university engagement or the management of human resource is studied by using a random sample of 220 teachers from Mercu Buana university in Jakarta, and by using a linked-scale to score their 180 questioners, and as a result of their analyzing the management effects on the teacher engagement is positive five percent of error. The effective factors of using mobile learning in higher education from the lecture's perspective were discussed in [12] by using 42 questions on 265 lectures in Iran at Shahid Beheshti University, the questionnaire reliability which was measured by Cronbach's alpha is 89 with using SPSS software, as result many factures are effect on the mobile learning in higher education environment like technical and technological factors, attitude and personal factors in addition to the skill and knowledge factors. Combining the e-learning with the traditional learning in [13], prompting in expiation the student knowledge by using a special approach of Jacques Ardoino's multi referential which is helping to understand the social phenomena, they use an online questionnaire which supported the content analysis of the participants in this study. In [14] a systematic literature review on e-learning features that have been implemented on e-learning students, e-learning teachers, and e-learning environment. The study begins with most researcher topics and relative theories and then the mist researcher used modalities after that used research methodology. They take 248 articles as a final sample of the study. It has been revealed that the most used theories in e-learning analysis studies are the technology acceptance model and the community of inquiry.

3. Methodology:

A quantitative approach was used in this survey in order to measure the readiness level of teachers to adopt an e-learning platform with several factors (like attitude toward e-learning and computer skills). Some research questions were asked in this study which was interpreted as "a formal, objective, systematic process in which numerical data are utilized to obtain information about the world" (Cormack 1991, p. 140). The questionnaire consists of three sections. the first one

collects the background information about the teachers, while the second section asked questions that determined the attitude level of the teachers to adopt e-learning, and finally, the third section deals with their level of computer skills. The study has been done on many teachers chosen randomly from primary and secondary schools in Mosul governorate in Iraq in both private and public schools, that studied either literary or scientific specialization. The sample size is (261). A survey questionnaire of this study has been developed to collect responses from Mosul's primary and secondary schools' teachers that teach different types of scientific or literary subjects to evaluate and measure their readiness to e-learning especially during the COVID-19 pandemic. A thirty-three questions in the Arabic language have been written (to make sure that all the teachers would be able to understand the questions and answer correctly) which divided into three sections (background information, attitude toward e-learning, and computer skills) as shown in table (1). Those questions have been checked and corrected by a professor specializing in the Arabic language. A test of reliability was carried out on the study instrument, and the value of Cronbach's alpha was 0.913.

Table (1): the three sections of the questions

Section 1: background information.					
Q1	Age	20 - 30	31- 40	41- 50	More than 50
Q2	Gender	Male		Female	
Q3	Academic Specialization	Scientific		Literary	
Q4	Work Experiences	Less than 5 years		5 to 10 years	More than 10 years
Q5	Any Computer Skills	Yes		No	
Q6	Teaching in	Primary School		Secondary School	
Q7	School Type	Government		Private	
Section 2: attitude toward e-learning					
Q8	I prefer conventional learning more than e-learning.				
Q9	In the absence of conventional learning, I think e-learning is a successful option.				
Q10	E-learning is an alternative to conventional learning.				
Q11	I have enough information about e-Learning which enables me to teach a subject.				
Q12	I have an internet service that allows me to communicate with students and send my lessons constantly.				
Q13	I think the internet provides illustrative pictures and videos that can be used for e-learning.				
Q14	I have a smart device/laptop that enables me to give a good e-lecture.				
Q15	I will improve my computer skills for e-learning.				
Q16	I would like to learn how to use e-learning Platforms (using Newton, google classroom, Edmodo ... etc.).				
Q17	I would like to learn how to use face-to-face meetings (using Zoom, Telegram Google Meet, Microsoft Team ... etc.).				
Q18	The scientific level predictions of my students qualified them to engage in e-learning.				
Q19	School administration supports e-learning.				
Q20	School administration offers me e-learning courses and workshops.				
Q21	I believe in the success of the e-learning process in my school, with the presence of components of e-learning.				
Section 3: computer skills					
Q22	Using computer.				
Q23	Download/install programs.				
Q24	Storing digital files.				
Q25	Deals with e-Resources such as CD or information taken from the internet.				
Q26	Browsing the Internet.				
Q27	Using e-mail address.				
Q28	Using Chat.				
Q29	Using Microsoft Office Word and PowerPoint.				
Q30	Downloading/upload video and images.				
Q31	Familiarity with recording e-learning videos.				
Q32	Creating an e-learning classroom (using Facebook, Newton, Google Classroom, Edmodo, ..etc.).				
Q33	Using e-learning platforms (like google classroom, Edmodo, ..etc.).				

Descriptive statistics were used to analyze, describe, and summarize the collected data. The MATLAB R2014a was used to build an application in order to do the analyzing process and determine the readiness of e-learning. The flowchart of GUI packages is given in the following figure (1):

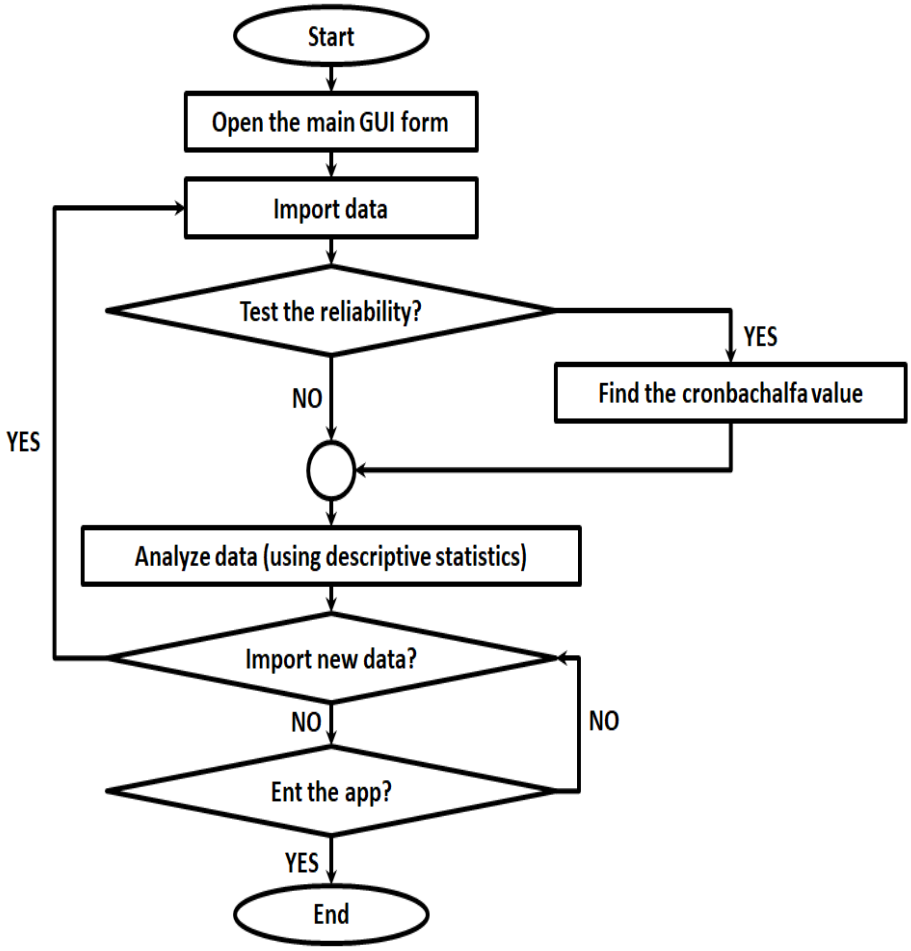

Figure (1): flowchart of the proposed application

4. Data analysis

Data analysis is an important stage in any study, it transfers the collected data from the questionnaire to a piece of quantitative information, by using descriptive statistics the collected data has been analyzed, as shown in table (2) an outline of the study questionnaire and statistical methods that have been used to answer them.

Table (2): statistical analysis procedures used to answer research questions

Study Questions	***Section article***	***Statistical Methods***
Is the Mosul school teacher's background qualified them for e-learning?	Background Information	
Are the Mosul school teachers have a positive perspective about the e-leaning and are they ready to improve their skills to overcome any gap in it?	Attitude Toward E-learning	Mean and Standard deviation
Are the Mosul school teachers have enough computer and internet experiences and computer-mediated communication to handle e-learning?	Computer Skills	Mean and Standard deviation

5. Responses analysis

5.1. background information

Descriptions of the respondents' demographics in the primary and secondary schools in Mosul in both the private and public schools, in 261 teachers the statistical range of their background information like age, gender, academic specialization shown in table (3).

Table (3): summary of the teacher's background answers

No.	*Profile*	*Range*	*Freq %*
Q1	Age	20-30	30(11%)
		31-40	135(52%)
		41-50	63(24%)
		More than 50	33(13%)
Q2	Gender	Male	120(46%)
		Female	141(54%)
Q3	Academic Specialization	Scientific	177(68%)
		Literary	84(32%)
Q4	Work Experiences	Less than 5 years	39(15%)
		Between 5-10 years	42(16%)
		More than 10 years	180(69%)
Q5	Any Computer Skills	Yes	75(29%)
		No	186(71%)
Q6	Teaching in	Primary School	144(55%)
		Secondary School	117(45%)
Q7	School Type	Public	237(91%)
		Private	24(9%)

5.2. Attitude Toward E-learning

The responders answer 14 questions to measure the readiness of them in the attitude toward e-learning in table (4), The assessment model which has been used in this study developed by Aydn and Tasc [15] indicate whether Mosul school teachers are ready for e-learning in an adequate way as in table(1-B), There are five-point Likert-scale with the leftmost and rightmost anchors being (Completely Disagree, Disagree, Neither Agree or Disagree, Agree, Completely Agree) for each question, the responses could easily choose the suitable one which are ordered that 1 is the lowest one and 5 is the greatest answers, that mean there are four intervals between them, by dividing the four intervals over the five-point Likert-scale we get 0.8, that mean as shown in figure (2) which explain that the mean score 3.4 as Aydn and Tasc suggested, that mean if the questions mean under the 3.4 this mean the responses in under the expected level of readiness and if the questions mean over or equal the 3.4 this mean the responses in over the expected level of readiness. Generally, the level of agreement regarding attitude toward e-learning (see figure 3).

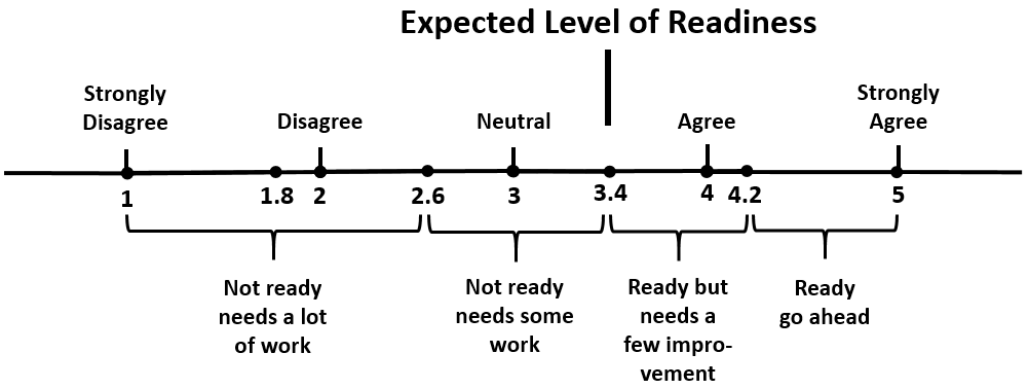

Figure (2): an assessment model for measuring readiness adapted

Table (4): summary of the teacher's attitude toward e-learning

No.	*Questions*	*Mean*	*SD*
Q1	I prefer conventional learning more than e-learning.	3.4	1.3
Q2	In the absence of conventional learning, I think e-learning is a successful option.	2.6	1.2
Q3	E-learning is an alternative to conventional learning.	2.2	1.1
Q4	I have enough information about e-learning which enables me to teach a subject.	2.9	1.4
Q5	I have an internet service that allows me to communicate with students and send my lessons constantly.	2.3	1.4
Q6	I think the internet provides illustrative pictures and videos that can be used for e-learning.	3.4	1.2
Q7	I have a smart device/laptop that enables me to give a good e-lecture.	3.1	1.5

Q8	I will improve my computer skills for e-learning.	3.9	1.2
Q9	I would like to learn how to use e-learning Platforms (using Newton, google classroom, Edmodo ... etc.).	3.9	1.2
Q10	I would like to learn how to use face-to-face meetings (using Zoom, Telegram, Google Meet, Microsoft Team ... etc.).	3.7	1.3
Q11	The scientific level predictions of my students qualified them to engage in e-learning.	2.2	1.1
Q12	School administration supports e-learning.	3.0	1.2
Q13	School administration offers me e-learning courses and workshops.	2.1	1.1
Q14	I believe in the success of the e-learning process in my school, with the presence of components of e-learning.	2.7	1.4

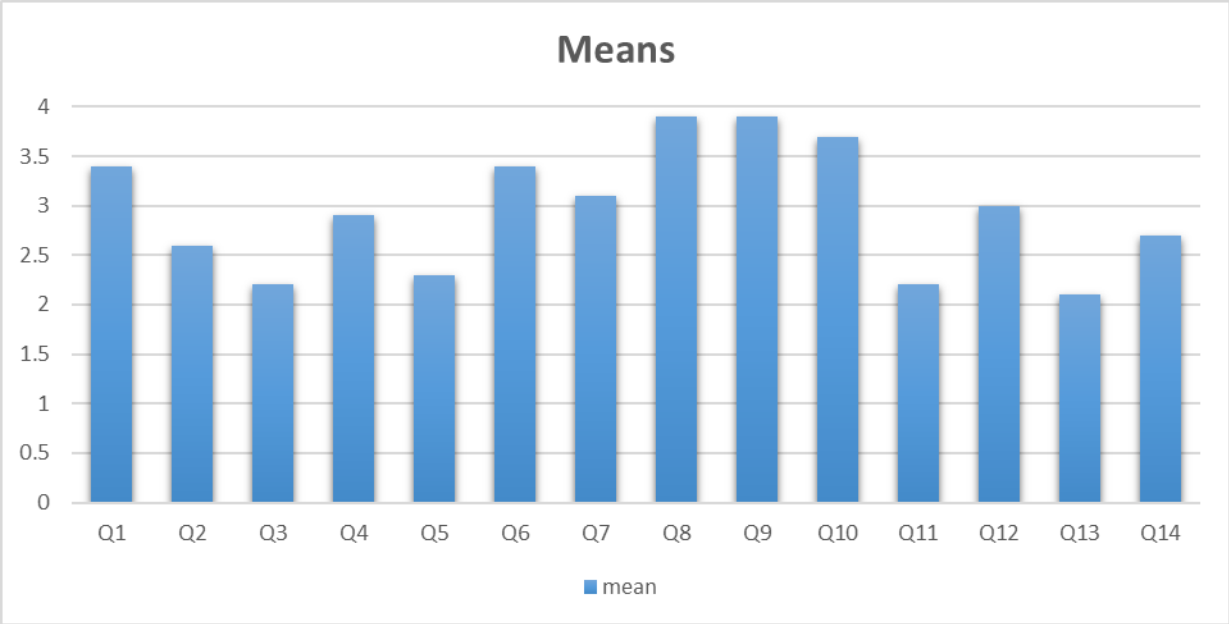

Figure (3): level of agreement regarding attitude toward e-learning

To analyze the responders' answers about their perspective about the E-leaning and are they ready to analyze the responders' answers about their perspective about the E-leaning and are they ready to improve their skills to overcome any gap in it, we divided the responders' answers table 1-B in three sections, the first part (see table 5) the teachers' perspective to e-learning and their acceptance and if they prefer it over the conventional learning and their opinion about E-learning success in the Mosul's schools, and by taking the mean of them, we will get 2.7 which is below the 3.4, that means the school teachers do not believe in the benefit of e-learning by taking into consecrations to their knowledge background, and the Mosul school circumstances, as a result of that, they need to take many online lectures or workshops about the importance of e-learning during the COVID-19 pandemic to improve their computer skills for e-learning, and give them intensive lessons about how to use face-to-face meetings or how to use e-learning Platforms.

And if we complete the assessment model in the second part of the seaming table, in an impressive way it will be obvious that the same teachers have shown an amazing measure of their readiness and acceptance to learn any computer skills to improve their e-learning communications with their students and enhance their e-teaching skills by calculating the mean of their motivation to learn, the total mean is 3.8 which is more than 3.4 that means the teachers had the intended to upgrade their E-teaching skills and online communication and to identified to better ways to connect with their students.

In the last part, available facilities, the responses' answers shown that they don't have enough software or hardware materials to handle the e-learning environment by measuring the mean of the questions which are 2.7, so the Nineveh Education Directorate and the school institutions must give more offers to provide that (see figure 4).

Table (5): summary of means in scores teachers' motivation toward e-learning

Construct	***Questions***	***Mean***
perspective about e-learning	Q2. In the absence of conventional learning, I think e-learning is a successful option. Q3. E-learning is an alternative to conventional learning. Q6. I think the internet provides illustrative pictures and videos that can be used for e-learning. Q14. I believe in the success of the e-learning process in my school, with the presence of components of e-learning.	2.7
motivation to learn	Q8. I will improve my computer skills for e-learning. Q9. I would like to learn how to use e-learning Platforms (using google classroom, Edmodo ... etc.). Q10. I would like to learn how to use face-to-face meetings (using Zoom, Google Meet, Microsoft Team ... etc.).	3.8
available facilities	Q4. I have enough information about e-learning which enables me to teach a subject. Q5. I have an internet service that allows me to communicate with students and send my lessons constantly. Q7. I have a smart device/laptop that enables me to give a good e-lecture.	2.7

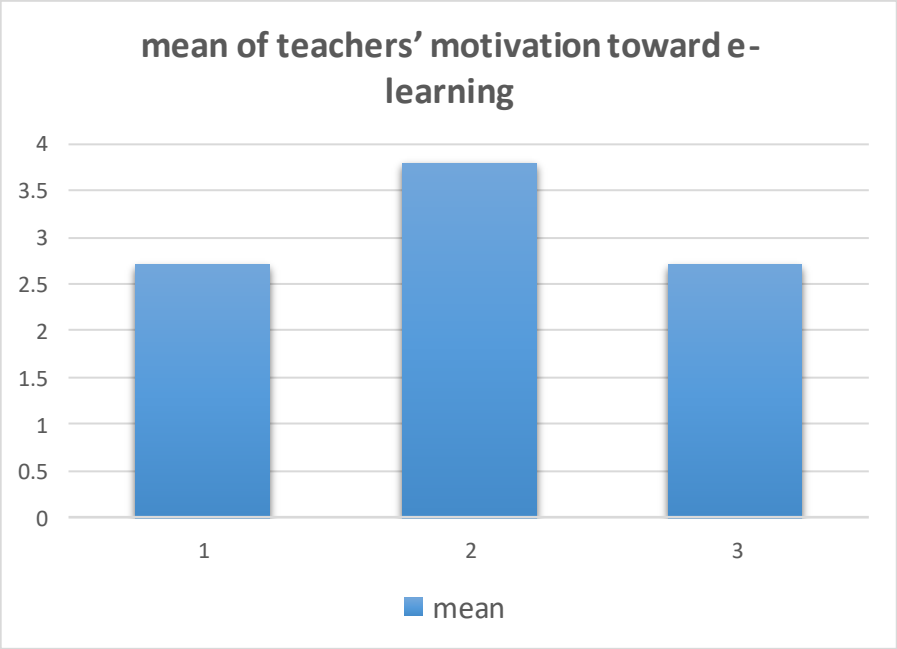

Figure (4): mean of teachers' motivation toward e-learning

5.3 teachers' skills

In the third section of the study questionnaire as shown in table (1-C) the mean and standard deviation is found to measure the teachers' readiness to e-learning (see table 6), there are 12 questions as four-point Likert-scale with the leftmost and rightmost anchors being (Nil, Poor, Average, Good) for each question, the responses could easily choose the suitable one which is ordered that 1 is the lowest one and 4 is the greatest answers, that means there are three intervals between them, by dividing the three intervals over the four-point Likert-scale we get 0.75, which mean that score 2.75 as Aydn and Tasc suggested [14], that means if the questions mean under the 2.75 this means the responses in under the expected level of readiness and if the questions mean over or equal the 2.75 this means the responses in over the expected level of readiness, the level of agreement regarding attitude toward e-learning (see figure 5).

Table (6): summary of means in scores teachers' computer skills

No.	***Questions***	***Mean***	***SD***
Q1	Using computer.	2.7	0.9
Q2	Download/install programs.	2.5	0.9
Q3	Storing digital files.	2.5	1.0
Q4	Deals with e-Resources such as CD or information taken from the internet.	1.2	1.1
Q5	Browsing the Internet.	3.7	0.8
Q6	Using e-mail address.	2.7	1.0
Q7	Using Chat.	3.5	0.8
Q8	Using Microsoft Office Word and PowerPoint.	2.6	1.0
Q9	Downloading/upload video and images.	3.0	0.9
Q10	Familiarity with recording e-learning videos.	2.5	1.1
Q11	Creating an e-learning classroom (using Facebook, Newton, Google Classroom, Edmodo, ..etc.).	2.2	1.0
Q12	Using e-learning platforms (like Newton, google classroom, Edmodo, ..etc.).	2.1	1.0

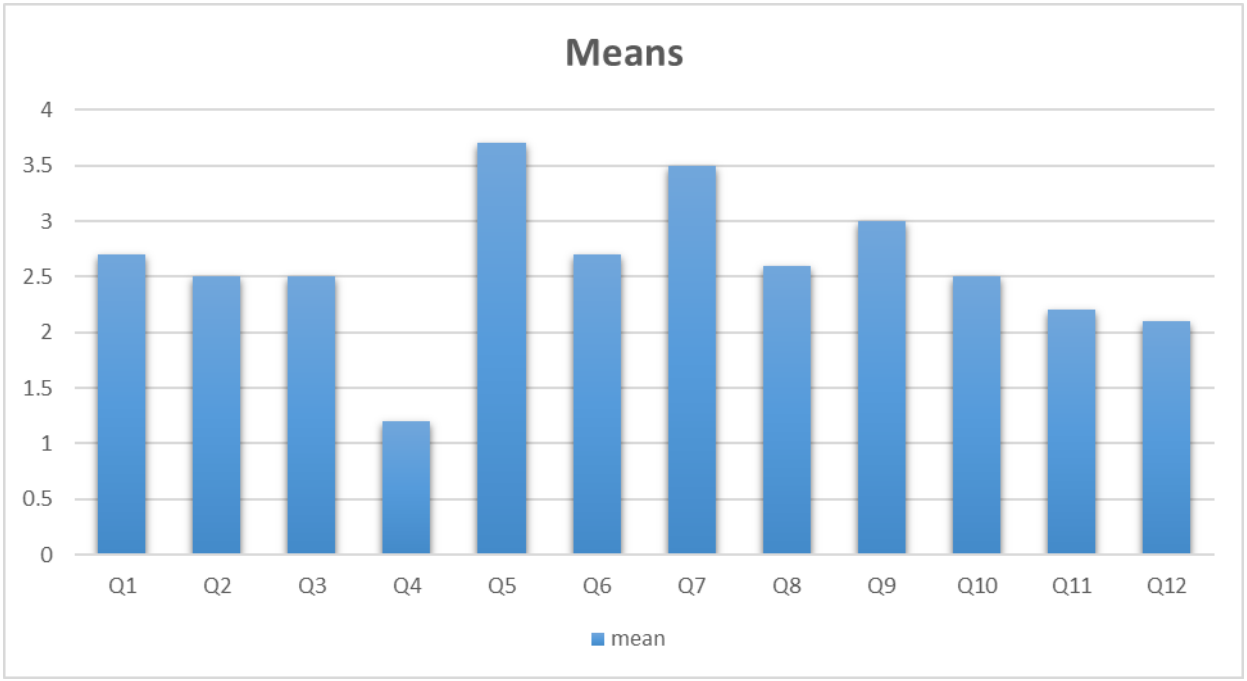

Figure (5): level of agreement regarding Teachers' Computer Skills

To complete the data analysis, the responders' answers in table 1-C will be divided into three parts, computer skills, internet skills, and communication skills (see table 7) the mean have been calculating to analyze them to find and measure the readiness of the teachers, and to clarify the weaknesses and strengths point in each part.

In computer experiences the responders mean is 2.5 and as we had said it is under 2.75 which means the teachers need to take some lectures or workshops about some specific computer software to help them to know how to soring their digital files and recording e-learning videos to send them to their students.

And if we take a look at the internet experiences, we will notice that the Mosul teachers have the readiness to deal with internet skills and everything that they need in this area to help them in teaching their students by using e-learning because the total mean is 2.8 and it's over the expected level of readiness 2.75, which show that they know how to download programs and internet browsing or downloading and uploading images and videos.

In the last part computer-mediated communication (CMC), the total mean is 2.6 which is very close to the expected level of readiness 2.75, so the teachers may need a particular lesson in two specific fields, first is how to create an e-learning classroom by using Facebook, Google Classroom, Edmodo. And second in using e-learning platforms like google classroom, Edmodo. for this, teachers will need to take some lessons or electronic lectures to facilitate and clarify weaknesses in these areas within this section, see figure (6).

Table (7): summary of means in scores teachers' skills

Construct	***Questions***	***Mean***
computer experiences	Q1. Using computer. Q3. Storing digital files. Q8. Using Microsoft Office Word and PowerPoint. Q10. Familiarity with recording e-learning videos.	2.5

internet experiences	Q2. Download/install programs. Q4. Deals with e-Resources such as CD or information taken from the internet. Q5. Browsing the Internet. Q9. Downloading/upload video and images.	2.8
computer-mediated communication (CMC)	Q6. Using e-mail address. Q7. Using Chat. Q11. Creating an e-learning classroom (using Facebook, Google Classroom, Edmodo, ..etc.). Q12. Using e-learning platforms (like google classroom, Edmodo, ..etc.).	2.6

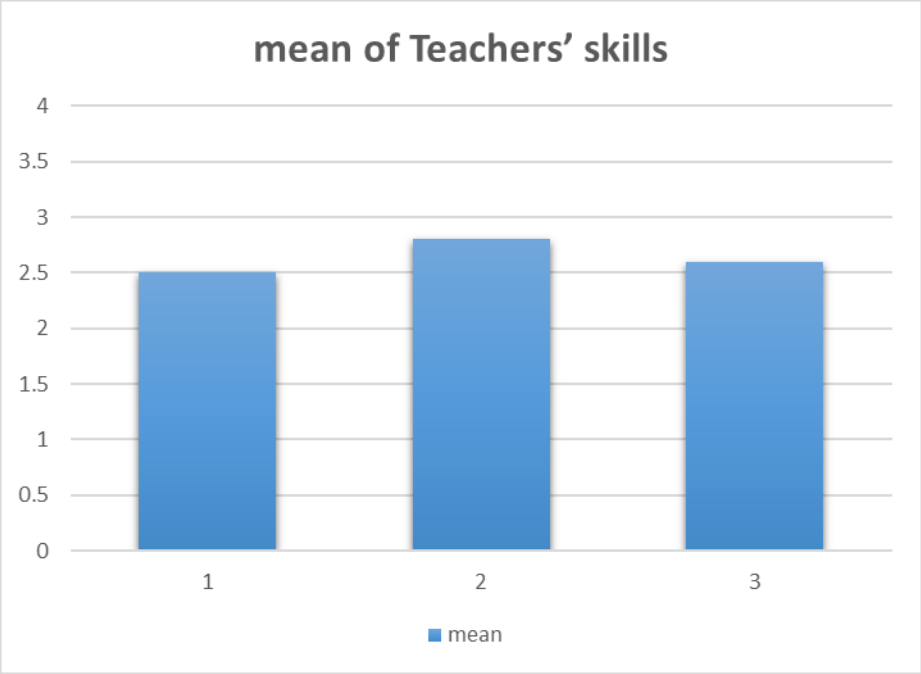

Figure (6): mean of teachers' skills

6. Conclusion

The main goal of this study is to measure the school teachers' readiness during COVID 19 pandemic for e-learning in Mosul city in Iraq, in three aspects (background information, attitude toward e-learning, and computer skills), the responses were analyzed and interpreted. on the whole, most responses were interesting in the use of e-learning, they were familiar with computer and communication applications, and they have a good motivation to learn more computer skills to improve their e-learning communications with their student and enhance their e-teaching skills, Besides the faculty members and administrators should be part of the study to complement findings of the study.

7. References

[1] Y.M. Lin, et.al, "Building a social and motivational framework for understanding satisfaction in online learning", Journal of Educational Computing Research, 38(1), 1-27, 2008.

[2] R. Colvin, R. Mayer, "E-learning and the science of instruction", California: John Wiley. Cormack, D. S. (1991). The research process. Black Scientific: Oxford, 2008.

[3] Salem Alkhalaf, et.al, "Assessing the impact of e-learning systems on learners: a survey study in the KSA", Procedia - Social and Behavioral Sciences 47 –98 – 104, ELSEVIER, 2012.

[4] M. Samir Abou El-Seoud, et.al, "E-Learning and Students' Motivation: A Research Study on the Effect of E-Learning on Higher Education", International Journal of Emerging Technologies in Learning (iJET), Vol 9, no 4, August 2014.

[5] Ashley Sisco, et.al, "Pre-service perspectives on e-teaching: Assessing e teaching using the EPEC hierarchy of conditions for e-learning/teaching competence", Canadian Journal of Learning and Technology, 41 (3), 1-32, 2015.

[6] T. Yi, "Design of the multiple agency in the e-learning teaching model", Agro Food Industry Hi Tech 28(1):575-578, 2016.

[7] Chantal Roddy, et.al, "Applying best practice online learning, teaching, and support to intensive online environments: an integrative review", Frontiers in Education, November 2017 | Volume 2 | Article 59, 2017.

[8] Ali Shahraki, Alireza Heidarzadegan, "Feasibility study

of implementing the e- learning-teaching system in secondary schools" Journal of Organizational Behavior Research Cilt / Vol.: 3, Sayı / Is.: S2, Yıl/Year: 2018, Kod/ID: 81S2182182

[9] Dhavidan Sivalingam, et.al, "E-Learning approach in Teacher Education", Journal of Applied and Advanced Research, 2018: 3(Suppl. 1) S14□S16.

[10] Nguyen Hoang Tien," Designing CDIO Based E-learning Teaching Courses at the University", Conference: Proceedings of University Scientific Conference on "Improving the Curriculum of Food Technology Curriculum in Accordance with CDIO Approach". 05 October 2018, Faculty of Agriculture and Food Technology, Tien Giang University, Tien Giang, Vietnam, 05 October 2018.

[11] Mochamad Rizki, Yetti Supriyati, Maruf Akbar," Factors Affecting Lecturer Engagement in E-Learning Teaching Method", Advances in Economics, Business and Management Research, volume 120, 4th International Conference on Management, Economics and Business (ICMEB 2019).

[12] Mohsen Haji Zeinolabedini, et.al, "Factors Affecting the Use of Mobile Learning in Higher Education: An Iranian Context", Qualitative and Quantitative Methods in Libraries (QQML) 9,1: 109-116, 2020.

[13] Ana Nobre, Jasete Maria da Silva Pereira," Didactic-Pedagogical Approaches in e-Learning: Teaching Authorship, Multireferential Methodology, and Gamification", Didactic-Pedagogical Approaches in e-Learning: Teaching Authorship, Multireferential Methodology, and Gamifcation, Educ.Educ. Vol. 23. No. 1 | Febrero-abril de 2020 | pp. 31-46, 2020.

[14] Jesús Valverde-Berrocoso, et.al, "Trends in Educational Research about e-Learning: A Systematic Literature Review (2009–2018)" Sustainability , 12, 5153, 2020.

[15] Dursun Akaslan, Effie L-C La,"Measuring Teachers' Readiness for E-learning", 2011 IEEE Global Engineering Education Conference (EDUCON), April 4 - 6, 2010, Amman, Jordan.

[16] Aydn, C. H, Tasç, D, "Measuring readiness for e-learning. Educational Technology and Society", 244-257, 2005.

تصميم وتنفيذ تطبيق لقياس جاهزية المعلمين لتبني التعليم الالكتروني في مدارس الموصل بعد جائحة كوفيد-19

دينا رافع احمد **ميس الريم عضيد كمال**

maisirreem_alsaigh@upmosul.edu.iq dinasalimagha@uomosul.edu.iq

كلية علوم الحاسوب والرياضيات

جامعة الموصل، الموصل، العراق

رشد عضيد كمال

rashad.alsaigh@gmail.com

كلية الهندسة

جامعة الموصل، الموصل، العراق

تاريخ استلام البحث: 2021/6/14 **تاريخ قبول البحث: 2021/9/31**

الخلاصة:

في الوقت الحاضر ، وبسبب الزيادة السريعة في انتشار جائحة كوفيد-19 الذي له الاثر الكبيرعلى البيئة التعليمية ، ظهرت الحاجة إلى استخدام أسلوب تعليمي بديل وجديد، مما يساعد على تقليل عدد الإصابات واستمرارية التعليم بشكل صحيح. تم تصمم وتطبيق هذه الدراسة لقياس مدى استعداد المعلمين لاستخدام التعلم الإلكتروني. وتم ذلك بعمل استبيان لجمع أكبر قدر ممكن من المعلومات لقياس مدى استعداد المعلمين لاعتماد التعلم الإلكتروني في المدارس العراقية بعد جائحة كوفيد-19 من خلال تحليل العوامل التي تؤثر على عملية التعليم. يتكون الاستبيان من ثلاثة وثلاثين سؤالاً باللغة العربية ويتضمن ثلاثة أقسام (معلومات أساسية ، الموقف من التعلم الإلكتروني ، ومهارات الكمبيوتر). تم أخذ الردود التي تم جمعها من معلمي المدارس الابتدائية والثانوية في الموصل وحجم العينة هو (261). تم إجراء اختبار الموثوقية على أداة الدراسة ، وكانت قيمة ألفا كرونباخ 0.913. وباستخدام MATLAB لبناء تطبيق من أجل القيام بعملية التحليل وتحديد مدى الاستعداد للتعلم الإلكتروني.

الكلمات المفتاحية: جاهزية، مدرس،كوفيد-19، تعليم إلكتروني، استبيان.