E-learning in Iraqi Universities: A Review

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***Abstract* -** Electronic Learning (e-learning) is considered as an innovative approach to education delivery via electronic forms of information. e-learning is an online education or distance education, which means that it can deliver education to everyone around the world online through the electronic means such as the internet from different distant countries. The success of E-learning process in universities needs to some factors that should be fit with the revolution of technology and enhance the learner's knowledge. Universities in developing countries such as Iraq, in order to be fit with the rapid growth of technology, it needs to analyze the current capabilities, analyzing previous studies, evaluating it and developing solutions fit with the updated technology in which these countries could save the time and reduce the cost and offer modern alternative means, tools, and methods of e-learning in its universities This paper reviews e-learning studies and status in Iraqi universities, identifying gaps and proposed some alternative solutions for that in order to enhance the e-learning process in Iraqi universities.

keywords – e-learning, LMS, TAM, User Satisfaction, Innovative collaborative Culture, MOOC

I. Introduction

Nowadays, many universities and institutions tend to offer e-learning services for students, customers, and staff in order to improve knowledge transfer processes and enhance the efficiency of the education process in general. Technology became one of the main factors that could play an important role in knowledge acquisition process in order to achieve education process goals.

The ministry of higher education and scientific research in Iraq followed a strategy to tackle the obstacles which faced e-learning in Iraq by offering a workshop to e-learning units in each university under the supervision of the e-learning unit in the ministry which supervises on each university in Iraq. There are Avicenna centres for e-learning in some universities such as the University of Baghdad and the University of Mustansiriyah in Baghdad. This strategy extended to include offering some staff training workshops due to their international experiences which were a result of their study abroad the country and collaborating with other international universities to follow advancing in technology in e-learning [1]. The strategy of e-learning in the University of Mustansiriyah located in Baghdad is contributing to making Learning Management Systems (LMS), Learning Content Management Systems (LCMS) and Computer Management Systems available to enhancing e-curriculum and allow to more students to register and learn. This aim of this strategy is to improve the education process output through employing new techniques in ICT facilities.

II. Literature Review

The e-learning essential constraints in Iraqi universities are financial constraints, ethical and legal constraints, technological constraints, socio-culture constraints, human resource constraints, institutional constraints and planning constraints [2].

Elameer and Idrus [3] proposed a modified Khan e-learning framework for the Iraqi higher education. They focused on the necessity of online collaborative learning through a visual authoring environment for creating sequences of learning activities. These activities incorporate a scope of individual undertakings, gather work and all class activities based on both collaboration and content.

Sulaiman Abd Anter, et al. [4] proposed E-learning system for Iraqi universities considering that the main success factors in e-learning are services and information availability and accessibility and flexibility of services and materials in order to manage the learning environment and reduce the expenses of the learning processes.

The e-learning system usability in Iraqi universities was found high, through measuring the overall reaction to the e-learning system by participants and the e-learning system terminologies and information by participants which were high [5].

Ahmed Dheyaa Basha et al. [6] have proposed applying of e-learning as instructional design for an electronic environment in universities in Iraq. They confirmed the necessity of design new websites to enhance e-learning skills in virtual environments.

The insufficient financial support, inadequate training programs, lack of ICT infrastructure, ambiguous policies and objectives, and lack of awareness, interest, and motivation toward e-learning technology are considered as the main barriers to enhance the e-learning in Iraqi universities [7]. The lack of training programs and inadequate ICT infrastructure are considered as the key issues which obstacles advancing of the e-learning process in Iraq. Table 1 summarized definitions of e-learning.

Keong et al. [8] proposed using Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use Technology (UTAUT) e-learning models in Iraqi universities. They

determined three main barriers including technical infrastructure, training, and motivation.

Ahmed Dheyaa Basha, et al. [9] proposed a framework for using ICT in E-learning. Their framework consisted of ICT readiness, instructor readiness, learner readiness, ease of use, motivation, usefulness, suitability and its effect on their attitude and engagement to use E-learning.

Ahmed Al-Azawei et al. [10] combined perceived satisfaction and Technology Acceptance Model (TAM) into one model, where TAM was supported by incorporating other variables including learning styles and self-efficacy.

Mustafa Radif [11] proposed a framework for the purpose of investigating e-learning Learning Management System (LMS) acceptance composed of Technology Acceptance Model (TAM) and Technology Organizational Environmental (TOE).

However, on the other hand, Inas Ismail et al. [12] proposed developing a MOOC for academic institutions in Iraq through designing a website includes instructor and student dashboards, online quiz and certificate, progress tracking and support for multimedia classes. Table1 summarizes the previous studies on e-learning in Iraq and its strengths and weaknesses.

Table1

Authors	*previous studies on e-learning in Iraq*	
	Gaps	Focus/Achievements
Elameer and Idrus (2011)	proposed a modified Khan e-learning framework. They focused on individual tasks, group work and whole class activities based on both content and collaboration.	Organizational or university tasks
Sulaiman Abd Anter, et al, (2014)	proposed E-learning system for Iraqi universities considering that the main success factors in e-learning are services and information availability and accessibility and flexibility of services and materials in order to manage the learning environment and reduce the expenses of the learning processes.	User satisfaction, organizational (university) culture
Ahmed N. Fahad, et al (2015)	The e-learning system usability in Iraqi universities was found high, due to measuring the overall reaction to the e-learning system by participants and the e-learning system terminologies and information by participants which were high.	Limited to evaluation of usability of e-learning
Yuen Chee Keong et al, (2014)	proposed using Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use Technology (UTAUT) e-learning models in Iraqi universities. They determined three main barriers including technical infrastructure, training, and motivation.	three main barriers including technical infrastructure, training, and motivation. Ignoring: university culture, no technical infrastructure solution (MOOC reduce the cost and does not require costly infrastructure).
Ahmed Dheyaa Basha, et al, (2013)	proposed a framework for using ICT in E-learning. Their framework consisted of ICT readiness, instructor readiness, learner readiness, ease of use, motivation, usefulness, suitability and its effect on their attitude and engagement to use E-learning.	university culture.
Ahmed Al-Azawei, et al, (2017)	combined perceived satisfaction and Technology Acceptance Model (TAM) into one model, where TAM was supported by incorporating other variables including learning styles and self-efficacy.	Organizational/ university culture.
Mustafa Radif, (2016)	proposed a framework for the purpose of investigating e-learning Learning Management System (LMS) acceptance composed of Technology Acceptance Model (TAM) and Technology Organizational Environmental (TOE).	Limited to LMS, organizational/ university culture.
Inas Ismail Imran, et al, (2017)	proposed developing a MOOC for academic institutions in Iraq through designing a website includes instructor and student dashboards, online quiz and certificate, progress tracking and support for multimedia classes.	Limited to proposing MOOC. Individual impact, organizational impact.

III. IDENTIFYING GAPS AND PROPOSED SOLUTIONS

Elameer and Idrus [2] focused on proposing a modified Khan e-learning framework. They focused on individual tasks, group work and whole class activities based on both content and collaboration. Their focusing was on individual impact (learners only). The main gaps that they did not focus on university impact. More specifically, Khan e-learning framework consisted of pedagogical such as content quality, institutional such as student service and academic affairs, technological such as system quality, management such as continuum management, ethical such as social and cultural diversity and evaluation such as evaluating of the content development process. The main gap that they concentrated only on local and internal and they did not put a solution to benefit from organizational university collaborative and innovative

culture through collaboration with international universities and industries and benefiting from their external resources, ideas, training, technology, and other means.

Sulaiman Abd Anter, et al. [4] concentrated on proposing E-learning system for Iraqi universities considering that the main success factors in e-learning are services and information availability and accessibility and flexibility of services and materials in order to reduce the expenses of the learning processes. The main gaps can be determined through their ignoring the user satisfaction which is considered as one of the most important factors that contribute to succeed the e-learning process according to previous studies. In addition to that, they just focused on information availability and services accessibility but, they did not concentrate on the organizational culture or benefiting from the modern technology to promote the e-learning. Also, they ignored the ability to benefit from external resources from other international universities and industries.

Ahmed N. Fahad, et al. [4] evaluated the usability of e-learning system in Higher Education (HE) institutions in Iraq. Their study was limited to evaluating the usability of e-learning.

Keong et al. [5] focused on using Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use Technology (UTAUT) e-learning models in Iraqi universities. They focused on individual impact and did not link the individual with the university culture impact. In addition to that, they did not put technical infrastructure solution such as developing the LMS Moodle, benefiting from external modern technology like MOOC through collaborating with other international or external universities and industries and other means.

Ahmed Dheyaa Basha, et al. [6] focused on proposing a framework for using ICT in E-learning. Their framework consisted of ICT readiness, instructor readiness, learner readiness, ease of use, motivation, usefulness, suitability and its effect on their attitude and engagement to use E-learning. Their framework concentrated on the most important aspects: ICT readiness, Instructors, learners, the quality and suitability of the e-learning system. The gap can be determined through the ability to benefit from external resources and technology that do not require big and costly infrastructure through collaborating with other international universities and industries which could reduce cost and save time.

Ahmed Al-Azawei et al. [7] concentrated on combining perceived satisfaction and Technology Acceptance Model (TAM) into one model, where TAM was supported by incorporating other variables including learning styles and self-efficacy. Their research caters learner or individual impact and technology acceptance but does not link the individual impact with the organizational impact. Their gap can be filled through benefiting from the organizational collaborative and innovative culture through collaborating with other international universities and industries and benefiting from their resources, technologies, e-learning systems and evaluating system, service and content quality and updated development of it.

Mustafa Radif [11] focused on proposing a framework for the purpose of investigating e-learning Learning Management System (LMS) acceptance composed of Technology Acceptance Model (TAM) and Technology Organizational Environmental (TOE). Radif study concentrated on LMS as a special case and its acceptance, and its technologically organizationally environmentally aspects. He did not extend his research to the ability to benefit from adding a value to LMS such as modern technology like MOOCs and other shared e-learning services. In addition to that, he did not focus on the ability to benefit from the collaboration with other international universities and industries as a solution to ensure more updated e-learning system.

Inas Ismail Imran et al. [12] concentrated on proposing a MOOC for academic institutions in Iraq through designing a website includes instructor and student dashboards, online quiz and certificate, progress tracking and support for multimedia classes. Their research was limited to propose a MOOC through designing a website. They did not focus on the learner infrastructure capability like computer self-efficacy, internet access, and electricity generation. In addition to that, they ignored the e-learning management systems LMS used in Iraqi universities such as Moodle and its quality and other shared services that can be offered such as cloud computing, Black Board, and other means. Also, they did not put solution to the problem of how it could be benefited from MOOC inside an integrated framework and how we could offer an international MOOC and external resources through collaborating with other international universities and industries, noting that there is not integrated MOOC in Iraq except the limited Alison MOOC in private Cihan University in Erbil [13].

Furthermore, many studies about e-learning did not focus on both the individual impact and organizational impact [14]. This paper focuses on both aspects to serve the individuals such as student, staff, and organizations such as universities. In addition to that, the collaborative e-learning is considered an inevitable need for learning organization kind. Developing a collaborative culture of knowledge sharing could play a crucial role in succeeding the e-learning process [15]. sharing ideas and resources, and constructing a general agreement among collaborated members are considered as the essential matters for the collaboration process in e-learning [16].
the importance of the organizational collaborative and innovative culture between universities and industries could contribute to enhancing the e-learning process, for example, the cooperation and collaboration between universities and CISCO, a computer networks industry contribute to more advanced knowledge for computer engineering, science and IT [17].
To sum up, no one of all previous studies recommended benefiting from industries but they focused only on academic aspect. And there is no anyone of previous studies focused on

the ability to use external resources with internal resources together which it could reduce the cost and save the time of development of e-learning in Iraq.

The aim of this paper is to review the previous studies and its contribution in the e-learning process in Iraqi universities, analyzing it and adding more practical enhancements for the e-learning process. This paper studies the development of the e-learning process as individuals such as learners and lecturers and as organizations such as universities. In addition to that, this paper combined the previous contribution in e-learning in Iraqi universities and adding more practical solutions to promote it through ensuring the qualities of the e-learning system, services and content, benefiting from external shared e-learning services like MOOCs depending on the university collaborative culture with other national and international universities and industries.

IV. CONCLUSION

E-learning in universities in developing countries such as Iraq could be enhanced through benefiting from new technologies such as MOOCs and enhancing the Learning Management Systems such as Moodle. The development in the e-learning process in developing countries could be promoted depending on adding value to it through benefiting from external e-learning resources from international universities and industries in developed countries and putting it together with the internally available e-learning resources to improve the performance of the e-learning process. More specifically, following Iraqi universities a collaborative culture with international universities and industries in developed countries could enhance the e-learning process in Iraq through acquiring, transferring and sharing the knowledge, reducing learning cost for students and for universities itself, saving time for students and universities itself, improved productivity through joint projects and ideas that could help in solving any potential e-learning-associated problems in developing countries.

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