Challenges and Opportunities of E-Learning in Secondary School in Iraq

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Abstract: E-Learning has become an integral part of educational settings because of the advancements in information and communication technologies. Despite the fact that E-Learning has been implemented successfully, many programs fail to meet their objectives. E-Learning scholars and practitioners have been inspired to investigate the aspects that influence the success or failure of the program. Specifically, this study aims to analyze the elements that impact the introduction and growth of E-Learning and the most suitable framework for secondary schools in Iraq. E-effectiveness learning's in Iraqi and Arab education systems is the focus of this study, since this field of research is lacking in both theoretical and empirical investigations. A conceptual framework for integrating the important components and demographic data is proposed in the study. Using the conceptual framework offered, educational institutions and governments may better design and execute new E-Learning programs, as well as analyze the effectiveness of current ones.

Keywords: E-learning, Secondary School, Education, Digital Learning

1. Introduction

Technology breakthroughs have spurred growth in a wide range of fields such as business, health care, training and education as well as the economy. Since its debut in 1990, E-Learning has evolved fast and education has been pushed to use E-Learning to modify conventional learning settings and provide more efficient and appealing learning experiences. With electronic distribution, time, place and location are no longer barriers to learning, making it possible for everyone to study whenever and wherever they choose (Rajasingham, 2009).

Because of the benefits that may be gained through E-Learning, it can be used to construct knowledge-based communities that can be used to educate the country and attain educational security (UNESCO, 2005). A whole new generation of learning is possible thanks to e-Learning, which might assist educational institutions accomplish a range of goals (Vrana et al., 2006). Collaborative learning is facilitated by e-learning, which allows instructors and students to share educational information, and empowers learners to govern their learning modes and build relevant learning environments (Zhang et al., 2004). E-learning

creates a new educational context, establishes new roles for instructors, gives students more alternatives, and creates learning environments that support and enrich the learning experience. For example, (Jethro et al., 2012) claim that the use of e-learning may help students realize their educational potential by allowing them to tailor the material and information to their own requirements and learning styles, hence improving the quality of their educational experience and supporting learning.

A further benefit of online education is that it allows students to access course materials as well as a vast quantity of knowledge on a variety of subjects from any location or time, as described by (Al-Harbi, 2011). Lifelong learning and scheduling flexibility are two of the many benefits of e-learning programs. Independent learning and teamwork are contradictory notions that may be brought together via e-learning (Asiri et al., 2012). There are many different formats of electronic communication supported by e-learning such as text, voice and video. This means that people can communicate both privately and publicly, promoting self-reliance while also fostering social interdependence, while also enhancing students' educational understanding and enriching their educational experiences (Al-Harbi, 2011).

2. Studies Related to E-learning

A self-administered questionnaire was used in the study by (Yaari, 2012) to evaluate the association between the corporate learning environment and the efficacy of an e-Learning program. It investigated the efficiency of e-Learning programs and the architecture of learning environments in relation to a model of interconnection for corporate learning environments provided in the research. Higher order advantages of e-Learning program efficacy, such as behavior change and return on investment (ROI), were shown to be strongly linked to the corporate learning environment. In addition, the suggested model of the interconnection of the corporate learning environment was evaluated and found to be trustworthy.

The Virtual Learning Process Environment (VLPE) was proposed by (Adesina, 2013) as an alternative e-learning system design (VLPE). VLPE allows course creators to represent desired educational pedagogies in the form of learning process workflows using a simple graphical flow diagram user interface. Individual students may monitor and analyze their own performance in relation to their classmates anonymously in real time using a personal analytics learning process dashboard that this new architecture provides.

An adaptive mobile learning framework designed and implemented by Al Hmouz (2012) was presented in the research, with the purpose of providing a rational structure for customizing learning material to meet individual learner characteristics while taking into account learner demands. New mobile learning development framework is one of the study's most significant findings. The framework represents the process of modifying learning material to meet the requirements of individual learners by taking into account their unique qualities.

Baharun (2012) examined the influence on student learning outcomes in mathematics and statistics of the provision of learning aids inside an e-learning environment. Video materials for postgraduate students were produced and made accessible via the subject's e-learning platform. It was shown that 98% of students preferred using video resources to help them learn and comprehend statistics, reducing their worries, and that these tools helped them better grasp and remember statistics.

Learning environments must be tailored to meet the needs of students who have visual impairments, according to a study by (Permvattana, 2012). As a result, blind and visually impaired students are unable to fully engage in the educational process as their sighted peers. When it comes to the design of future learning spaces, the materials created for sighted students are often incompatible with the needs of those who have vision impairments. In order to create a new methodology for e-learning space design, we looked at how e-learning affects facilities and design, how blended learning affects space design, how we can design the learning anytime, anywhere paradigm, and how we can design e-learning spaces with security in mind. An e-learning space design research focus (ELSD focus) evolved as a crucial component in the creation of an innovative framework for the design of e-learning environments. E-learning Spaces at Higher Education Institutions (HEIs) should be designed using this structure.

E-learning and blended learning have been shown to have positive effects on students' attitudes and academic performance in the Islamic Culture course, according to a study by (Alqahtani, 2010) that focused on this topic. The blended learning technique was shown to have a statistically significant advantage over e-learning and conventional learning in terms of students' accomplishment. In contrast, e-learning and traditional learning had no statistically significant differences in terms of students' performance.

Research done at a Taiwanese national research university (Wang, 2008) looked at how students and faculty felt about e-learning in the country. Students, professors, and university staff were all interviewed to learn about the positive and negative aspects of incorporating e-learning into classroom instruction. Even while instructors' and students' preferences for instructional design and learning processes align with a behaviorist and constructivist teaching and learning methods, the research backs up the idea that e-learning practice as a whole is a socio-cultural system. Following the research, a model was constructed to explain how e-learning impacts blended learning in Taiwanese universities.

3. E-Learning Overview

3.1 E-Learning Definitions

E-learning is described by (Govindasamy, 2002) as education offered by all electronic media, including the Internet, Intranets, Extranets, broadcasts, satellite, audio/video cassette, interactive TV, and CD-ROMs. An e-learning course is defined as one that is available through web-based, web-distributed or internet-competent instruments. (Nichols, 2003).

"E-Learning" is defined as an innovative method for providing anyone, anywhere, at any time with a well-designed and interactive learning environment by utilizing the characteristics and resources of various digital technologies along with other teaching materials suited for open and distributed learning environments, as defined by (Khan, 2005). Clark (2011) has defined E-learning as "a combination of content and instructional methods presented by media tools, such as words and graphics on a computer or mobile device, intended to build job-transferable knowledge and skills linked to individual learning goals or organizational performance."

3.2 Advantages of E-learning

There are several advantages to e-learning, particularly at higher education institutions, for both students and professors, since it focuses on the requirements of the students while simultaneously reducing the teacher's workload. According to (Elameer, 2010), the following are the primary advantages of online education: E-learning may help cover the gaps in Iraqi institutions, such as the university's incapacity to create a digital curriculum to supplement student classroom learning, with the use of technology. In addition, e-learning improves student-centered education, addresses the shortage of current knowledge, and makes use of the most recent information and communication technologies (ICTs).

There are many more benefits of adopting online education, according to the authors:

1. E-learning allows institutions and their students or learners to have considerably more flexibility in terms of time and location (Smedley, 2010).
2. Make learning more efficient by making digital data more accessible.
3. By utilizing an online forum, it provides students with the opportunity to enhance their communication with one another.
4. It's a low-cost method of education since students don't have to go far from their homes, and there are several options for learning without having to be in the same area all the time.
5. It takes into account the diverse learning capacities of each student, such as the fact that some students are more willing to concentrate on certain portions of the curriculum, while others are eager to study the complete course.
6. There is a shortage of faculty, such as professors, instructors, laboratory technicians and supervisors. This helps to meet that need (Arkorful, 2014.).

3.3 Evolution of E-learning

There's little question that education has played a critical role in advancing humanity's culture throughout time. To date, the expected outcomes have been achieved after numerous phases of instruction. The following is how e-evolution learning's may be explained:

There are two types of traditional learning:

1. Direct or formal teaching, in which the teaching staff is the exclusive source of knowledge transmission; and 2) non-direct or non-formal teaching.
2. As an alternative to traditional classroom instruction, electronic learning (also known as "E-Learning") makes use of the internet to provide remote education.
3. Blended learning: the use of electronic learning methods as an adjunct to conventional classroom instruction is referred to as blended learning in this context.
4. Mobile learning (M-Learning) is regarded an electronic-learning method's competency in this area. Teachers use mobile devices like smart phones and wireless communications to download or upload electronic information.
5. Modern learning methods, such as Ubiquitous Learning (U-Learning), combine online and mobile ways of learning; it's referred to as omnipresent technology that employs ubiquitous devices and settings (Tahir, 2018).

4. E-learning Experiences in the World

E-learning has been widely used in colleges and schools in contemporary nations for many years due of its numerous advantages. The following are examples of how electronic-learning has been experienced in the West and the Arabic world, respectively.

4.1 Western Experiences

Since 2006, Singapore has developed a smart project that uses technology as an important aspect to devote the education that created a distinctive education environment for eight future Singapore schools (M.T.A., 2012). An innovative, student-centered educational system was developed in conjunction with IBM in Australia. Their system connects schools, postsecondary institutions, and workforce education. In 2012, IBM released a report entitled (IBM 2012).

The Australian-IBM cooperation initiative in 2012 created an intelligent, multi-directional, and learner-focused education system that links Australian schools, institutions, and workshops to provide suitable training. An educational project system to improve the infrastructure of Korean education is part of the 2012 Smart South Korea learning strategy (Choi, 2012).

At least in New York City, a Smart Classroom commission indicated that in 2014, this initiative combines technology into school rooms, preparing students to engage in the 21st-century economy, and enhancing their abilities (Smart Schools Commission, 2014). Finland has also launched an intelligent learning project, the continuing learning system solutions in 2011 strive to develop the 21st-century educational realities (Kankaanranta, 2014.)

4.2 Arabic Experiences

TUNIS (VUT) is the abbreviation for the name of the January 2002-founded virtual Tunisian university. Its initial goal is to guarantee that an ever-increasing community of students has access to courses taught through online delivery techniques. It is also important to help modernize the school system by using new technology for information and communication (Tunis, 2002).

An eLearning division for Training and Resources (GOTEVOT) was established in 2002, which generated an e-library that includes over 50,000 books and more than 3,000 online services. With the use of Google services, the Saudi Arabian Ministry of Higher Education established a program for learning in 2008 that included more than 1,200 facilities and 20,000 professors (Al-Asmari, 2014).

Opened in Cairo in 2003, Arab Open University (AOU) provides remote learning and e-learning at the University of Egypt (EELU) since its inception in 2008. Distance learning and worldwide e-learning are offered by a privately held, non-profit company. Emirati authorities began funding the Mohammed Bin Rashid Smart Learning Program (MBRSLP) in 2012 in an effort to modernize the country's educational system. The MADRASA platform is now being launched by the United Arab Emirates as part of Mohammed bin Rashid Al-worldwide Maktoum's endeavors to create a brighter future for mankind and the region's biggest regional hope industry (AbdulRazak, 2019).

5. The Role of the E-learning During COVID 19 Pandemic

The COVID-19 epidemic has prompted the closure of a number of educational institutions. In an attempt to prevent the spread of the COVID-19 virus, educational institutions throughout the globe have temporarily closed, affecting over 60% of the global student population. "Localized" is a term that has been adopted by several nations. There will be tens of thousands more kids who will be impacted by the closures. As of May 24th, 2020, there will be a total of 1.725 billion pupils affected by school closures as a result of the epidemic. Around the globe, UNICEF estimates that more than 98.6 percent of students are impacted by school closures in 153 countries and 24 countries. At the moment, there are schools operating in 10 different countries (Al-Abdali, 2016).

Online education is increasingly becoming a lifeline for institutions in their battle against community transmission (Murphy, 2020). In addition to conventional textbooks, instructors and students have access to a wide range of specialized materials in a variety of media and across time zones thanks to technology innovations. Zoom and Google Classroom, as well as Free Conference Call and Telegram, have been widely adopted by schools throughout the globe in the wake of the COVID-19 outbreak.

6. E-Learning Situation in Iraq

The use of electronic learning in Iraqi universities has been an inspiration. Ancient civilizations like the Assyrians, Babylonians, and Chaldeans of our nation have long been regarded as the birth of history in the globe, despite their recent implementation. More than 8,000 years of their history have been preserved in writing. For a time, Iraq served as the world's premier power (Al-Azawei, 2016).

Iraqi higher education was affected by the turmoil in several areas after 2003, as was the situation in other sections of our nation. 500 academics and professors of higher education were killed between 2003 and 2012, according to UNESCO (O'Malley, 2014). There are several hurdles to e-learning in Iraq compared to surrounding nations, which has led to the abandonment of e-learning. Lack of preparedness and confidence, as well as insufficient prices, are among the issues (Matar, 2010). Moodle was first developed and used by a small number of Iraqi university departments in 2010 when the country first began using electronic learning (Elameer, 2010).

A lot of effort is being made to bring Iraq up to speed with the technological advancement that has been delayed, and there are numerous projects launched each year to create e-learning platforms to meet the severe educational institution shortage in Iraq in general, and these platforms are still doing well. But the universities of Iraq need to further develop and progress to regain their place among their peers from neighboring countries.

7. Challenges and Problems of E-learning

Boling et al. (2012) discovered that the online courses individualize learning and reduce social contact. Students mentioned feeling cut off from their professors, the course topic, and their peers. Participants in these classes described their online interactions as text-based lectures with a variety of reading and writing assignments. In addition, e-learning as a method may have a negative impact on the enhancement of

learners' communication abilities. Students, even though they have a strong intellectual background, they may lack the necessary skills to effectively communicate what they have learned to others (Lewis, 2000).

McConnell (2006) recognized concerns with internet communication's interpersonal features. Students frequently felt isolated, overshadowed by other members, or hesitant to offer their opinions in public. Students are not conversing with one another online, as well as the impersonal nature of the online environment (Vonderwell, 2003). It's not like a one-on-one interaction, one student observed. It's more akin to computer-to-computer communication (Kear, 2010).

Other difficulties can be divided into four categories:

1. technology difficulties,
2. individual difficulties,
3. cultural difficulties,
4. and course difficulties.

In addition, poor network infrastructure and a lack of content development, for example, were the primary barriers to e-learning system adoption in poorer nations (Aung & Khaing, 2015). Learners who use e-learning as a means of education experience reflection, isolation, and a lack of engagement or relationship. To reduce such impacts, it is necessary to have a strong sense of inspiration as well as time management abilities (Akkoyuklu & Soylu, 2006).

The lack of electricity, computers, and access to the Internet is a key barrier to successful e-learning deployment in poor nations (Rajesh, 2003). Shortage of technical staff and support for various operations due to a lack of technical employees and support facilities (operation, installation, security, network, administration and maintenance) during the e-learning experience, a slow internet speed and a lot of traffic was witnessed (Eltahir, 2019).

In truth, these problems exist in Iraq. Iraq's uncertain political and economic circumstances has had a considerable influence on the infrastructure as a whole, both in terms of basic services for Iraqis and the country's technology infrastructure. According to (AL- Khatteeb & Istepanian, 2015), the country has suffered from a lack of electricity for years. The effectiveness of e-learning may be less than that of traditional learning.

Furthermore, inadequate selection abilities, as well as the simplicity with which one can copy and paste, may lead to piracy and plagiarism in e-learning. E-learning has the potential to damage institutions' socialization roles, as well as teachers' roles as educational process administrators (Scott et al., 1999). Some websites may become overused as a result of e-learning. This could result in unplanned costs in terms of both time and money (Klein & Ware, 2003).

8. Challenges E-Learning in Iraq

Implementing large-scale electronic learning in Iraq is fraught with difficulties. Naturally, security is the most difficult issue to overcome. The level of readiness of Iraqi universities for this transition must also be taken into account and handled in general and specific manners. While the adoption of e-learning

throughout the country faces major hurdles, there are also problems in developing learning environments that effectively engage today's students and help them realize their full potential. Education in the new Iraq must focus on preparing students for success in a global, information-based economy as well as productive members of society in the country's future. Many assumptions about education will need to be challenged in Iraq's new inventive environment, which may cause some concern among parents and students alike. However, Iraqi process makers and the Higher Education Council should do their utmost to overcome these difficult situations. Starting these initiatives in secure locations across the nation is a speedy answer. (Ala'a Al-Din & Al-Radhi, 2008). In addition, there are several difficulties in immediately altering the teaching methods of our predecessors. It is necessary to first organize and prepare (Masami, 2006); this preparation will take place by adopting e-learning as a support activity to personally teaching in the form of self-study (Abualsaoud, 2009).

The Badrul Huda Khan octagonal eight-measurement e-Learning model finished this, and the model was then divided into three key categories: educational, technical, and organizational. In designing e-learning systems and educational activities for Iraq, the educational activities were used as a benchmark. Learning activity management system (LAMS) is an acronym for the Moodle software that is used to create, manage, and deliver online cooperative learning activities. LAMS stands for Learning Activity Management System. In order to create learning activities, this is accomplished by using a visual authoring environment (VUE). Various tasks, small groups, and complete classes may all be included in these exercises, which focus on both subject and teamwork (Shalni Gulati, 2008).

Too far, Iraq has had access to various cutting-edge technologies like computers and servers but lacks the necessary infrastructure to effectively use them. Results showed that "no networks at all in universities, no digital library, weakness in the numbers of computers and in great need of being increased, no special network for universities staff or students, no main network between Iraqi universities, no wireless networks inside university campus, weakness in the numbers of Internet connections who students can use,etc" (Amer, 2010).

Difficulties faced by e-learning usage may be categorized into four primary categories: course problems, obstacles connected to person characteristics (student or instructor), technology challenges, and contextual challenges (organisational, cultural and societal challenges). Arab nations in general, as well as Iraq in particular, have significant challenges in implementing e-learning systems. Infrastructure, learning culture and teaching, support and system design, and students' preparation are all issues that need to be addressed in the new school year.

8.1 Infrastructure

In impoverished nations, the lack of access to power, the Internet, and computersis a significant obstacle to the effective adoption of e-learning (Eke, 2011). Iraq, in reality, has many of the same problems. Infrastructure as a whole has been negatively impacted by Iraq's uncertain political and economic climate, which has had a substantial effect on key services and the technical infrastructure of Iraq. For years, the nation has been plagued by a shortage of energy (Al-Khatteeb, 2015). While just 12 percent of the whole population has a personal computer, 78 percent of the population owns a cell phone (UNDP, 2015). Previous research has shown that mobile learning may be utilized effectively in education (Ozdamli,

2015). This indicates that, given the younger generation's preference for smartphones over PCs, mobile learning might be more effective than traditional e-learning.

8.2 The Culture of Teaching and Learning

The acceptability and usage of e-learning systems is influenced by cultural factors, including as (Tarhini, 2015). Teaching and learning take on a different life in poor nations than they do in the industrialized world. This is because of the cultural variations across nations (Hofstede, 2001).

High power distance is the norm in Iraqi society (Greet- Hofstede, 2016). Students in this culture consider lecturers as the primary source of knowledge for their education and depend significantly on them for their development in learning (Andersson, 2009). This scenario is both challenging and advantageous. When students rely heavily on lectures, they may not want to change their teaching methods (i.e. face-toface). When power distance and collectivism are prevalent, however, as in Iraq's culture (Greet Hofstede, 2016),

Lecturers are respected and listened to by younger individuals (i.e. students) who follow their counsel and guidance because of this. When lecturers encourage students to utilize the university's e-learning platforms, they may have a significant impact on student behavior because of the tremendous effect of social norms.

8.3 The Support and Design of the System

There is a shortage of experience in designing and implementing the most current technology in most underdeveloped nations (Qureshi et al., 2012). This has an impact on the system's appearance, functionality, and ease of use. As a result, the interface (the system's design) and the material quality offered to students through the online platform may be compromised (Kwofie, 2011).

Students who are taking classes online will be unable to ask the kinds of questions they typically would in a classroom setting. Therefore, the inclusion of the proper material at the right moment is of paramount importance. When students have little or no experience with technology in general and, in particular, with the technology used in education, the need for an efficient system design and user interface increases (Al Obisat, 2013). Students' inexperience with the system may be alleviated if knowledgeable technical support staff is on hand to answer questions and help them get the most out of it.

8.4 Students' Readiness

For e-learning systems to be successful, they must be adopted and used effectively by students, who are the system's end-users. In order for a new system to be successful, students must be excited about it. In addition, Iraqi pupils are unfamiliar with technology and the usage of computers. Low computer usage has led to a lack of computer literacy (Heshmati, 2013). Also, students' trust in the system's utilization might be affected by this issue, particularly when used for instructional reasons (Kwofie, 2011).

9. Opportunities E-Learning in Iraq

Over the last two decades, the number of Arabs pursuing higher education through distant learning has skyrocketed. The ongoing fighting in Iraq has left many Iraqis behind. The most pressing concern right

now is whether or not it will work this time for Iraq. Because of Iraq's broad, geographically dispersed higher education infrastructure, many people believe that this effort is now feasible and may serve as a foundation for online distance learning programs. The following items are part of this infrastructure:

- There are 25 public universities in the United States.
- High-quality professionals in Iraq and overseas who are capable of implementing these projects with a high degree of professionalism are needed.
- A wide range of government funding options, including private-public partnership models
- The possibility to form alliances with other institutions throughout the world
- Online distance learning educational programs that have previously been implemented in several adjacent countries, such as Jordan, United Arab Emirates (UAE), Kuwait and the Kingdom of Saudi Arabia (KSA) (KSA)
- Iraq's educational demands may be met via the implementation of a learning plan, which is a logical approach in the face of unpredictable security situations.

The administration of information resources and networks for content access, the sharing of pedagogical tools, and the technological delivery of interactive learning environments are all aspects of distance learning that information professionals excel at. Iraqi information professionals have the opportunity to play a significant role in the creation of these plans. ASIS&T members may also play a significant role in the development of these networks, both in Iraq and with international partners. Iraq's history is rooted on a belief in the importance of education and the pursuit of knowledge. Iraq may revitalize its pioneering, intellectual character by building on this tradition and working with information professionals (Ala'a Al-Din, 2008).

10. Conclusion and Recommendations

10.1 Conclusion

Students in middle and high school may benefit greatly from e-learning, but there are a number of obstacles that must be overcome before it can be implemented effectively. This was done from the standpoint of students, who are the system's intended users.

For secondary school students, this research has been customized to identify the key obstacles and potentials that students encounter as a result of the COVID 19 block down. The study found that the use of e-learning in Iraq is still in its infancy. Furthermore, it was found that the majority of secondary schools lacked the requisite knowledge and abilities to adopt e-learning efficiently. This research addresses a need in our understanding of Iraq's new e-learning instructional environments. In Iraq, the delayed acceptance of e-learning may be attributed to a lack of previous preparation for instructors and students, as well as the fact that some students prefer face-to-face education.

This research provides secondary schools with important information that must be taken into consideration if Iraqi secondary pupils are to benefit from e-learning. Based on the difficulties and possibilities indicated, several suggestions were made. We expect that by following these guidelines, e-learning integration in Iraqi public institutions may be realized.

10.2 Recommendations

The following measures should be made by governments and educational institutions in order to minimize the potentially devastating effects of the COVID-19 epidemic on learning:

- Ensuring that the e-learning process has the proper facilities and assistance.
- Constantly supplying power.
- Because many of the students come from low-income homes, it is important to provide free internet access.
- Increasing the internet's speed.
- Helping people learn how to utilize an electronic site by providing directions and information.
- Using E-learning, students should have access to a wide range of resources and classes that are relevant to their course of study.

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