Subject Review: The Effectiveness Of Integrating E-Learning On Learning Outcome And Student Perceptions In Tertiary Education[1]

Zena Abdulameer Mohammad
Scholarships and Cultural Relations Department
University of Baghdad, Baghdad, Iraq

ABSTRACT

The literature shows conflicting outcomes, making it difficult to determine how e-learning affects the performance of students in higher education. The effect of e-learning was studied and data has been gathered with the utilization of a variety of qualitative and quantitative methods, especially in relation to students' academic achievements and perceptions in higher education, according to literature review that has been drawn from articles published in the past two decades (2000-2020). The development of a sense of community in the on-line environment has been identified to be one of the main difficulties in e-learning education across this whole review. In order to create an efficient online learning community, it could be claimed that both instructors and students must work together to engage in extensive collaboration and engagement with both students and one another. Since educational institutions must be ready for the sustainability regarding e-learning adoption, the presented work argues that there is a requirement for better identification and knowledge of this. The results revealed that a university's competency and capacity for meeting e-learning demand stemmed from actual requirement for the implementation of e-learning for specific academic environment hinged on sustainability related to implementation of e-learning. In addition to that, each university's local culture influenced and supported the implementation process, where the inhibiting and driving variables had a substantial effect on the continuity and outcome of the process. The range of digital tools that can successfully encourage social interactions as well as the learning community need to be further researched. With regard to higher education, there is an increase in innovative assessments of variables to assess learning results in the settings of digital learning. Researchers should carefully evaluate their study designs and study subjects in digital learning environments for this reason, as well as how to handle measuring learning.

Keywords: *e-learning; higher education; digital technologies; learning community*

INTRODUCTION

At all levels, educational institutions have a largely positive attitude toward e-learning. E-learning usefulness in delivering high-quality education in tertiary institutions has been the subject of numerous research. Educational institutions had to switch to virtual platforms for their teaching methods with COVID-19 pandemic's development in the early 2020s. Through utilizing information and communication technologies (ICTs), which give learners the flexibility of space and time, universities have generally pushed the e-learning process. In spite of this expansion, the impact of digital technology on learning in higher education has not yet been quantified in a concrete and coherent way. Also, educators must be aware of the elements that work better in developing a learning environment that affects students to enhance their academic performance and realize their educational goals. E-learning supported learning activities and improved technology use (De Freitas and Mayes, 2007, Tian and Vargas, 2013). E-learning

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provides students with an ability to learn at their own pace, in contrast to conventional teacher-centered teaching (Turoff and Hiltz, 2002). In order to increase student involvement and boost the effectiveness of higher education system, this article is intended to provide information that can be used in implementation and development of e-learning and teaching. It is a literature review from the last two decades (2000–2020) that has examined the effects of digital technologies and gathered information with the use of a variety of quantitative and qualitative methods, with a focus on students' perceptions and academic performance in institutions of higher education.

Use of e-learning and student performance in higher education

Contradictory findings in literature obscure connection between using student performance and e-learning in higher education. Early researches by (Blecha, Sosin, Bartlett, Agarwal, and Daniel (2004); Wossman and Fushs, 2004; Coates, Kane, Humphreys, Agarwal, Vachris, and Day, 2004) have made an effort to explain the negligible impact regarding such technologies in classrooms and on students' performances. For instance, Coates *etal*. (2004) have examined 3 matched pairs of conventional learning and e- learning economics courses offered by 3 institutions. The student's performance on TUCE, an accomplishment test for college-level economics, was utilized to determine the student's learning outcomes. According to the research, grades in the classroom were over 15% higher than they were in the online version, even after accounting for differences in student characteristics. Yet, according to several other studies, student learning and achievement have been unaffected by digital technologies. Skidmore and Anstine (2005) looked at managerial economics as well as statistics in face-to-face as well as on-line settings. The statistics students who took their classes online performed 14.1% worse compared to the ones who took them face-to-face, while the managerial economics subject revealed no discernible differences between the two formats after considering the variations in student characteristics. Another study polled 240 students that were enrolled in a course which was offered in 3 different formats: on-campus, online, and hybrid. Lewer, Terry, and Macy; (2003). The final exam score served as the research's independent variable, and the independent variables in the study were the characteristics of students. The outcome showed that students taking online classes earned lower grades compared to those taking hybrid or on-campus classes. Students taking hybrid classes and those taking on-campus classes did not, however, perform significantly differently.

Also, students in the same instructor's on-line and face-to-face economics classes were polled by Liedholm and Brown (2002). In the case when differences in student characteristics have been considered, they have found that exam scores have been about 6% higher in face-to-face class format compared to on-line format. They ascribed the teacher-student interactions in on-campus classes for the students' generally better performance, and they attributed the students' generally worse performance in the on-line classes to the absence of organization that is necessary for effective independent learning. In the spring and fall semesters of 2002, Sosin et al. (2004) carried out research with 3,986 students who were instructed by 30 instructors from 15 universities in the USA. A database including 67 portions of an introductory course was used. They discovered that while the influence of ICT varied, it was sometimes favorably connected with performance. Researchers Lindahl, Leuven, Oosterbeek, and Webbink (2007) came to the conclusion that there is no proof that using digital technology in education more frequently affects students' performance. Actually, they discover a persistently unfavorable and very marginally significant association between such technology use and some indicators of student accomplishment. Also, students spent less time on their academic work and more time using digital technologies for leisure. As a result, learning achievement scores for students will be lower. Higher education's results are evolving. It appears that the effect of technology on learning has grown in importance, and that there is more to consider than just curricula. In terms of self-worth, motivation, teamwork abilities, digital skills, metacognitive skills, topic knowledge, and other factors, enhanced student outcomes have been seen. While it appears that students as well as faculty in higher education institutions are applying the new technologies more and more frequently, organizational structures are slowly changing. According to a number of studies, the employment of digital technologies in classrooms has little of an impact on students' performance because of a lack of organizational transformation skills.

E-Learning and Quality of Achievement

In "An On-line Engagement Framework for Higher Education," Abawi, Redmond, Henderson, and Brown (2018) provided a brief assessment of literature on on-line engagement in higher education setting as a measure of achievement quality. Meyer (2014) has backed up this claim that student engagement strategies improve the standard of the results in online learning. In the research, attitudes, beliefs, and actions of students were identified as crucial components of online engagement. It was also suggested how the framework may be utilized so as to critically evaluate the efficacy of on-line courses and their capacity to engage students. A template for designers, instructors and

researchers working in the online environment is provided by the framework that was created. Since more students are enrolling in on-line courses in higher education, it is crucial that teachers investigate the type and level of engagement. Another study looked at the connection between student performance in higher education and the usage of ICT (Dahmani and Youssef, 2008). The impacts of ICT investments on student achievements had not been adequately explained by research thus far. The researchers offered two complementary interpretations while summarizing the key findings of literature they had read. The researchers found a strong correlation between e-learning success and a student's traits, their learning environment, and their teachers' attributes. ICT could have an effect on those factors, leading to changes in the outcomes. The researchers argued that the use of ICT needed complementing organizational designs, which seemed to be delayed and varied from institution to institution, resulting in varying levels of performance.

Chen, Lin, and Liu (2017) looked into how digital learning affected both learning results and motivation. With a sample size of 116 students split into four classes, quasi-experimental research was carried out. To learn more about their motivation for using digital technologies, a questionnaire has been also sent out. The findings showed that: 1. digital learning had more positive impacts on learning class motivation compared to conventional classes did; 2. digital learning had a more positive impact on learning outcomes compared to conventional classes did; and 3. student motivation has been significantly correlated with digital technologies and learning outcomes. To increase teaching efficiency and learning outcomes, the researchers suggested combining digital technologies with instructional methodologies. E-learning is becoming more and more important in universities, particularly in the form of blended learning, and there are numerous methods to implement this cutting-edge approach to learning and teaching. Petersen, Nortvig, and Balle (2018) In an effort to determine whether format produced the best learning outcomes, increased student satisfaction, or had the highest rate of course completion, many academics have contrasted conventional teaching with blended learning and online learning. The study includes 44 peer-reviewed publications and papers that were published between 2014 and 2017. It has been founded on systematic data-base searches that have been done in Jan. 2017. Yet, these research showed that a wide range of factors had a big impact on learning outcomes in blended learning, e-learning, and online learning. In order to examine factors that impact e-learning and blended learning with reference to academic success, student satisfaction, and engagement in higher education institutions, the research looked at both of these areas. The research found that student-teacher engagement, teacher presence, and well-planned links between off-line and on-line activities and between campus-related and practice-related activities were the most important factors. The literature review explored comparisons between various e-learning formats, blended learning, on-line learning, and "conventional" face-to-face learning and teaching, along with a few other important factors.

On the other hand, not all works presented provided the same insight into what influenced students participating in blended and online learning programs to achieve superior learning outcomes. Borokhovski, Bernard, Tamim, Schmid, and Abrami (2014) came to the conclusion that the use of digital technology in blended learning courses appeared with have extremely little impact on student accomplishment. Jeong-, González-, Rodr'guez-, and Canada (2016) implemented a blended learning model in general science course and found that students achieved higher grades than those in a conventional classroom environment. Yet, Israel (2015) found that blended learning format had much lower effect on students' learning results, and Potter (2015) found that the blended learning format resulted in considerably higher grades. Results of a comparative study that had been conducted by Randall, Adams, and Traustadóttir (2015) showed that students in an introductory microbiology blended class underperformed those in a conventional setting. The decreased accomplishment was linked to the blended class's low participation and minimal interaction among university students. Comparable results were found by Roberts, Reed, and Heritage (2016), who found that students taking an introductory psychology course online experienced significantly lower exam grades than students taking the course in a conventional classroom. Due to the challenging topics that students had to understand on their own and the lack of sufficient explicit face-to-face teaching, there was low accomplishment. Contradictory findings were observed by another investigation. The academics argued that opportunities for students to study independently while taking part in student-centered, asynchronous collaborative learning activities that are enabled by media like Facebook led to higher learning outcomes (Bucic, Northey, Govind, and Chylinski, 2015). According to literature review, there was minimal circumstantial and context-dependent agreement among teaching formats regarding learning outcomes. Also, the effectiveness of student learning in blended and on-line courses is influenced by the complex interactions between context, technology, and learner characteristics (Kaufman, Ryan, Greenhouse, She & Shi, 2016).

An integrated model for evaluating effect of e-learning on university students' performance was provided by Tossy and Kisanjara (2017). Questionnaires and interviews were used in a mixed approach research technique for the research's objectives. Also calculated for the integrated model were internal reliability and construct validity. Student achievement was substantially correlated with factors like student cognition, student engagement, student control, performance expectation, student enjoyment, student happiness, student self-esteem, and students' confidence in e-learning. The model might have evaluated the effects of e-learning following its introduction. According to the research's results, students' successes were found to be influenced by their knowledge and skill. It is advised that future research using the research's results, which include variables like intention to use and frequency of use of the e-learning, be done. It was consistent with findings of research by Komba and Lwoga (2015), which suggested that e-learning was efficient and successful in boosting students' skills and knowledge and inspiring them to finish their coursework fast. In a study, Moskaliuk, Kümmel, Kimmerle, and Cress, 2020, looked at how much the role of an individual's learning outcomes against social outcomes determined learning outcomes. Researchers examined scientific publications that had been published in peer-reviewed journals and determined how they related to various learning outcomes indicators. The research's objective was to examine how the dependent variables which the researchers had employed in previous works were affected by a cognitive perspective as opposed to a social perspective. Understanding the role that such theoretical viewpoint had in development of digital learning environments and assessment of the results of learning was the other objective.

There were 246 articles rated for the analysis. Individual learning settings were employed in 159 studies (64.6%), whereas social learning settings were utilized in 87 studies (35.4%). Observable behavior, self-reports, elaboration, learning skills, personal efforts, social interactions, and digital activity were all taken into consideration as learning outcome metrics. The measuring of elaboration and social interactions varied between the two settings of learning. Researchers came to the conclusion that more research must be done on learning results measurements in digital learning settings. Yet, research on effects of digital media on learning has produced conflicting conclusions. The research also found that rather than using digital media, prior knowledge, teachers, and the novelty of specific digital setting appeared to have higher impacts on the outcomes of learning. The research reported here consolidated common assessments of variables accountable for the learning outcomes in previous empirical investigations since the settings were different. Nisar, Shehzadi, Basheer, Hussain, Chaudhry, and Hameed (2020) had investigated the role of digital learning on students' learning and satisfaction as well as the perception of universities as a brand at Pakistani educational institutions. Students from private and public universities made up the study's population. An e-questionnaire distributed to 408 students was used to gather data. The results showed that e-information and e-service quality positively impacted students' e-learning, which in turn had an impact on their satisfaction. Results also showed that student satisfaction and e-word-of-mouth contributed to the development of universities' brand image. The research's conclusions could be used so as to help create e-learning settings that will help students in COVID-19 situation. In order to help students with online education, it also offers advice for educational institutions on how to integrate learning management system successfully.

E-learning in Iraq Universities

E-learning is becoming more common in tertiary education because of universities expanding their course offerings and more students enrolling. Even though the usage of e-learning programs in higher education had advanced in industrialized nations, these tactics have not yet been effectively implemented in developing nations (Suleman, Ssekakubo and Marsden 2011). The majority of educational systems, particularly those in the Middle East, plainly lag behind e-learning (Al-Abdulkareem and Mirza, 2011). During the beginning of 2009, it was believed that barely 1% of Iraqis had Internet connection (Al-Abdulkareem and Mirza, 2011). Even though conventional teaching approaches are still utilized, especially in the wake of the outbreak of Covid-19 pandemic, Iraqi Ministry for Higher Education and Scientific Research has lately made considerable advancements in e-learning. A study by Hassan, Fahad, and Rahman (2015) explored the state of the art at a few Iraqi universities by examining the usability issues connected to student use of e-learning. Eleven experts were given a modified version of the Diehl, Chin, and Norman (1988) usability test questionnaire to fill out so as to get their opinions on the existing e-learning system. 50 minutes were given for the event. The specialists were chosen based on their experience with e-learning systems and their students' records. A usability test was carried out by the system administrator at a few universities in Iraq. The test's main objective was to gauge how people generally responded to the software, learning, system data, and system capabilities. The scores showed a "high" sensitivity to current e-learning system, which was generally agreed upon by all students as being clear, simple, and efficient. For the most recent application of technology to process, store, and retrieve content in e-learning system more effectively, further research is required. Another study by Willis,

Ameen, and Abdullah (2017) looked at benefits and drawbacks of the use e-learning in the Iraqi universities from viewpoint of students. 300 university students in Iraq were given a questionnaire to complete as part of a survey. 181 completed survey forms were gathered. They have been asked as well to respond to an open-ended question about value and benefits of e-learning and the way that it might be successfully applied in Iraq. Students have also been asked to list any difficulties they encountered when utilizing e-learning systems in Iraqi universities. Students were aware of the value and advantages of e-learning in higher education, based on the findings. Yet, there were significant issues with the fundamental infrastructure, as well as issues with universities' and governments' support for the present e-learning. The findings also showed that mobile phones were favoured by Iraqi students over using only PCs.

A total of 300 students at an Iraqi university were given questionnaires as part of a research project by Willis, Ameen, and Abdullah (2019). The university's e-learning system training program attracted graduate and undergraduate students from many disciplines, and the data was gathered from them. The data was anticipated to show the way that an e-learning system may be utilized successfully and identify new methods to enhance it. The questionnaire included open-ended question about difficulties that are related to using e-learning in higher education in Iraq in addition to a check for using e-learning system from students' perspectives. The findings had shown that having a good technical support team helped students find the necessary information, made the system simpler to use, and boosted their system use. Students' perceptions of a system's overall quality and their usage of it were significantly influenced by the quality of the material that has been offered in an e-learning system. According to the results of this work, self-efficacy and technical support both significantly influenced how well students used the e-learning system. Hence, managers of e-learning facilities must make sure that the system offers high-quality contents which are pertinent to student modules and simple to access. Future training for the students must include advice on how to get credible information online in the form of books, journals, and articles.

Majorly depending on pedagogical perspectives, Talib, Farhan, and Mohammed (2019) suggested performance models for e-learning systems. Assessment regarding the performance of e-learning programs received little attention. As a result, it might be challenging to assess e-learning technology performance adequately. By outlining a method to guarantee the efficiency of e-learning facilities, notably in Iraq, the research's objective is to distinguish between organizations in e-learning system. The higher education system is required for measuring performance regarding its e-learning system in its own method because the system's performance cannot be precisely described. It was anticipated that this work would bring the various organizations into compliance with the proper performance framework standards. To raise education quality in Iraqi universities, Sadiq (2020) did a research to determine how effective employing e-learning strategies and information systems is. An online survey included 200 university professors as participants. The effectiveness of e-learning (EEL) was evaluated using a standard questionnaire by Arquero, del Barrio-Garca, and Romero-Fras, (2015) that included 20 questions. Additionally, an information system questionnaire (IS) with 9 questions from Lee-Post and Holsapple, (2006) and a quality in higher education (QHE) questionnaire with 10 questions from the standard Gerogiannis, Tsinidou, and Fitsilis (2010) have been applied. According to the research, relational collaborative learning has a positive influence on educational quality due to the effectiveness of the information system. The research showed that students' use of new technology had aided in the development of their skills and offered options that might have a profound and positive impact on students' engagement, teachers' positive behaviors, personalized learning, and students' imagination. As a result, the research demonstrated how utilizing e-learning approaches and information systems can improve the higher education quality.

DISCUSSION

This essay examines a review of how technology has developed quickly and how it had a significant impact on higher education's online programs. E-learning and teaching will undoubtedly be significantly impacted by the development of technology. This study found that few research had the information needed to describe the best practices for more effective on-line teaching. A number of factors, including well-designed course content, interactions between motivated learners and teacher, and skilled instructors, have an impact on how effectively online teaching is delivered. Teachers undoubtedly have a significant role in e-learning, even if it is primarily student-centered. According to the review, Internet access, cutting-edge technology, and a sizable market have all contributed to the rapid growth of online education. By a proactive process of refining, re-shaping, and re-structuring, on-line education will keep expanding its presence and influence on higher education. Rather, it merely serves as an alternative to conventional higher education. Online education is becoming more and more popular, particularly for those who would otherwise be unable to pursue an education as a result of physical distance, prohibitive expenses, and scheduling

difficulties, because of its accessibility, flexibility, and affordability. The development of a sense of community in on-line environment was identified to be one of the most significant difficulties in e-learning education during this whole study. Many research highlighted the value of encouraging teacher and student interaction, presence, and collaboration (Blaschke, Brindley, and Walti, 2009; Kehrwald, 2008; Garrison, Swan, and Richardson, 2009; Kim and Yuan, 2014). Consequently, it may be argued that in order to create an efficient online learning community, both instructors and students must work closely together to foster interaction and collaboration amongst them.

Educators of e-learning systems should be given more consideration when examining their teaching experiences and continuing education requirements. Several faculty members at various universities don't feel comfortable teaching online (Crawford-Ferre & Weist, 2012), and many more think that conventional class settings are better for learning than online ones (Kidd and Keengwe, 2010). The research found that student engagement significantly impacted achievement (Lambert, Chen, and Guidry, 2010). Due to the fact that this component has received minimal attention in research studies. Pearce and Hampton (2016) noted that Coates (2009) and Hullinger and Robinson (2008)'s findings indicate students who are attentive and interested in an online course eventually succeed. For comprehending the reasons behind students' success in online learning, many works have been conducted. According to Range, Duncan, and Hvidston (2013), students are extremely driven to succeed in the case when the curriculum is well specified. According to the research, students were demotivated and confused regarding the course objectives when the objectives of the course were changed repeatedly throughout the class. As a result, organization, course clarity, and student engagement were the most important factors for effective online learning. Hence, with clear organization, interactions, communications, and the existence of the instructor, student motivations for on-line learning are increased. Also, research has shown that in order to boost student engagement in online learning, instructors with various specializations must think about using various teaching strategies than those employed in conventional settings (Bonanno, Brocato, and Ulbig, 2015). Teachers ought to interact with their students actively. For gaining their trust, teachers must respond to their needs (Bonanno, Brocato, and Ulbig, 2015). Several studies had verified the effectiveness of e-learning in classrooms and students' positive attitudes about it (Bunyarit, Hussin, and Hussein, 2009; Tian and Vargan, 2013). Although technology plays a significant role in e-learning, it does not guarantee its success. Additional factors included well-designed courses, pertinent, up-to-date content, strategic and reliable teaching plans, and staff assistance at all the levels. Despite the fact that e-learning appears to be advantageous, multiple works have found contradictory findings. Even though a few researchers have acknowledged the concerns and offered creative solutions to some connected issues, the benefit of superior learning outcomes remains a topic of study (Sadiq, Au, and Li, 2009). The advantages, efficacy, and efficiency of e-learning have been addressed by blended learning. It is described as integration of self-paced on-line learning with traditional classroom training (Kalk and Cennamo, 2019; Kakkar, 2008). For instructors that emphasize learner-centered styles of teaching, blended learning offers considerable support.

IMPLICATIONS OF THE STUDY

The necessity for e-learning implementation sustainability is one of the key results from this work for implementation of e-learning within the area of higher education. There is still a long way to go before e-learning is successfully implemented in educational institutions due to technological, organizational, and pedagogical hurdles, even though a management system for learning content is mature and easy to set up and deploy. Also, the vast body of e-learning research had grown in this field due to e-learning implementation being underappreciated, particularly at the last stage of the process. In light of this, the research points to the need for improved understanding and awareness of the necessity for educational institutions to be ready for sustainability that is related to implementations of e-learning.

The results of this work could surely be deployed by university managers for the creation of a suitable e-learning environment and enhance current e-learning procedures at their institutions. For e-learning managers to develop an efficient approach for the implementation of e-learning, sustainable implementation offers a practical framework. Throughout the sequential step process of implementation within contextual settings and university contexts, the e-learning sustainability demands the acceptance and considerations of a wide variety of factors. For maximizing factors facilitating and minimizing the factors constraining both students and teaching staff' use of e-learning, university managers must be aware of the challenges, advantages, and technical complications and must also provide an appropriate policy, change management practices, and practical technical support. The implementation of e-learning must take under consideration the strategic ICT infrastructure development and investment that emphasizes technical scalability and integration for the infrastructure of university. A significant result of the work is the requirement for a

dependable network and easily accessible ICT. Universities must maintain network and internet connection necessary for e-learning and, if at all practicable, offer a single sign-on feature that will make it easier for students to access university infrastructure. This implies that sufficient money and investment are needed to guarantee that implementation of e-learning is sustainable in terms of financial resources. For lessening risk and damage in the case when utilizing e-learning, e-learning platforms must also be efficiently maintained, operated, and managed through qualified employees who are capable of offering support services and replies to users' demands within a short period of time. In the case when utilizing e-learning platform for academic tasks, online pedagogy must be worried to prevent technology exploitation. While planning for more practice and progress in e-learning, such factors must be taken into account. Given complexity regarding organizational structures as well as university charters, leaders who can commit to and create a sustainable method to the e-learning practice are needed to make decisions regarding its policy and implementation.

Also, educational institutions aiming to enhance the present state of e-learning might profit from this work. To increase practical e-learning and overcome challenges, an institution must go through the sustainability stage, which is summarized in the study. The results of this work give institutions an integrated perspective depending upon the sustainability and will be helpful, especially, throughout post-implementation stage regarding e-learning implementation process, even though management might have already fully implemented e-learning and could be extremely knowledgeable about it. Lastly, this study has demonstrated how three implementation-related factors—organization, technology, and learning and teaching—identify various problems with e-learning and combine them in a way that makes them more manageable for institutions to deal with. The study makes the case that although individuals from such many fields are likely to have diverse professional methods and specialized knowledge because of their disparate theoretical foundations, they will have the ablity to agree on a single solution for the practices of e-learning.

CONTRIBUTION TO KNOWLEDGE

According to this review, e-learning research had concentrated more on integrating e-learning in classrooms from many viewpoints. The implementation of E-learning was also used so as to test theories of user acceptance of new pedagogies or technology acceptance models from the perspectives of learning and teaching. Only some works have recommended integrating perspectives and areas affecting the practice and implementation of e-learning. In addition to a suitable technological infrastructure, pedagogical integration and organizational strategy are necessary for ongoing implementation of an e-learning system and its continued adoption by users.

This work's design incorporated viewpoints from a variety of disciplines, such as technological, organizational, and pedagogical perspectives. Depending on experience and knowledge of managers, lecturers, staff, and students, the work's conclusion suggests a model for e-learning implementation that depicts all of the significant factors in context and process of e-learning implementations. In order to guarantee the success regarding e-learning implementation within institutional settings, their reaction enables development of a comprehensive framework for e-learning implementation. The view that the e-learning system as a whole is a socio-technical system is supported by implementation framework established from these studies. Participants in the work brought up the advantages, difficulties, dangers, and issues related to their adoption of e-learning in a way which had made clear how pedagogical, technological, and organizational environments influenced the implementation of e-learning. The framework outlined in such works considers the alignment of various implementation-related factors with organizational settings, e-learning policy, technological infrastructure, management commitment, and support. Furthermore, the model makes clear that in order to achieve sustainability of implementation, value co-creation of e-learning must be taken up throughout implementation. It is an empirical study in an area in which there aren't many of these works focused on problems in the post-implementation stage regarding implementation process, in spite of the fact that the e-learning research body has been well developed. Given the dearth of literature at this e-learning implementation level, as it has been revealed by the study's review of the literature, the study now advocates for additional research on the nature of e-learning implementation. Considering the interplay and interaction of technology, organization, and pedagogy—the three main components of e-learning implementations at all of the educational institutions—it addresses the implementation's critical challenges. The work' emphasis on an integrated view of relationships between processes and factors in contextual settings makes the findings relevant as a result. This study can clarify how educational institutions could successfully adopt an e-learning system if they have real e-learning needs and the means to satisfy those needs.

CONCLUSIONS

Depending on the premise that useful data may be acquired by researching websites which have run a system of e-learning, this study intended to establish a knowledge regarding how e-learning had been efficiently carried out in universities. The results of the studies demonstrated that the implementation of e-learning has been a difficult and particular process to contextual settings where it has been occurring. The results of the studies highlighted the significance of interactions of interdependent components regarding a sustainable framework of implementation, namely, e-learning demand, e-learning need, e-learning capacity, and e-learning competency. Each one of the universities studied has been distinctive and had its own distinctive culture, resources, and initial conditions. The research' findings highlighted critical significance of the actual needs for e-learning in each of universities that have been examined and connected this requirement to a level of capability and competency of the technology implementation process and management. The results revealed that a university's competency and capacity for meeting e-learning demands had stemmed from the actual requirement for e-learning implementation for the specific academic environment hinged on sustainability regarding e-learning implementation. Also, each university's local culture influenced and supported the process of the implementation, where inhibiting and driving factors had a substantial effect on the continuity and outcome of the process. The results of this work demonstrate that e-learning is most effective in the case when it becomes a given, as described in the implementation frameworks. When e-learning becomes essential to enhancing e-learners' performance at all levels, sustainability is produced. In summary, university administrators and strategic technology planners must be aware of the importance of technology integration and convergence and make sure that end-user support is maintained.

The research papers looked at revealed that among the various factors, educator presence in on-line settings, interactions between teachers, students, and content, and deliberate communication in offline and online activities as well as between practice-related and campus-related activities were the most effective factors. The studied literature, provided a wealth of recommendations for various course designs that might work well in a given situation. The ability of the online educator to build relationships that were driven by positivity was the most important component that might be very influential. The literature review indicates that there's a great deal of interest in education research to learn more about the factors affecting learning outcomes as well as student satisfaction in online learning formats, e-learning, and blended learning in higher education. However, more research is required to learn more about the factors affecting students' learning experiences in higher education.

RECOMMENDATIONS FOR FUTURE STUDIES

Even though online education is expanding quickly, more research is required to fully understand the efficiency of e-learning and teaching. The best e-learning course design and implementation may merit further attention in future research. The literature review also shows that online education in higher studies has produced a variety of results in terms of learning outcomes. The various digital technologies which can successfully encourage social interaction and the learning community need to be more researched.

Online education has become widely accepted in the 21st century, in the post-Covid-19 era, and is steadily expanding as a market as it keeps to increase people's access to learning (La-Brie and Galagher, 2012). The diverse perspectives associated to the different formats of blended, on-line, or face-to-face learning must thus be familiarized with by students and instructors. Yet, e-learning instructors must be able to design environments where students can use their analytical, critical-synthesis, self-awareness, creative, and intentionality in action. It is clear that in the case when courses are well-designed and effectively presented, students will be motivated in online classes, which will result in academic success. In order to create, enable, and support a situation in which all students can learn from one another, instructors have a greater responsibility to sustain the disparities that already exist within their classes. In order to assess learning results in the settings of digital learning in higher education, we advise more inventive measurement of variables in future research. Researchers should carefully evaluate their study designs and study subjects in digital learning settings, as well as how to handle evaluating learning, for this reason. Interdisciplinary sustainable educational research benefits from the separation of influencing effects and independent variables.

LIMITATIONS OF THIS STUDY

The goal of the present study is to increase the understanding regarding the way that e-learning was incorporated into higher education at universities due to globalization. Future research on national as well as other lower-ranked universities around the world may be able to take advantage of this limitation. Future research will collect more data,

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which will undoubtedly reveal many parallels and divergences and deepen our understanding regarding e-learning implementation. Also, the technology, organization, and pedagogical aspects of implementing e-learning have molded this work, which has limited the opportunity to explore additional implementation-related aspects that could be engaged in the adoption of e-learning. This limitation, on the other hand, gives room for future research that will undoubtedly enhance our knowledge and comprehension of the way that e-learning is implemented in the universities. Such research may include additional domains and aspects in e-learning implementation inside educational institutions. The frameworks can be expanded to address e-learning requirements across the spectrum of the educational system. The frameworks could alternatively be used in exploratory as well as comparative studies of the blended e-learning in comparison to other formats of e-learning. Lastly, social learning networks are a significant trend in education in the information technology era. Facilitating adoption and implementation of e-learning could be thought of as part of the role of collaborative and social learning on networks. In light of that, researches on networking in the implementation of e-learning could result in other fields of study examining the role of the collaborative learning and knowledge sharing amongst the users and adopters, outside the institution boundaries, which may alter the way that the institution approaches e-learning implementation.

ABOUT THE AUTHOR

Zena Abdulameer Mohammad is currently working at the Scholarships and Cultural Relations Department, at the University of Baghdad. She is a university instructor teaching English as a Foreign Language to undergraduate students, at the College of Veterinary Medicine, University of Baghdad. She also offers English language training courses at Development and Continuing Center to all learning levels for EFL learners. She has her bachelor's degree in translation from Mustansiriyah University, Baghdad, Iraq. She completed her master's degree in Teaching English as a Second Language (TESL), The English and Foreign Languages University (EFLU), Hyderabad-India. Her main interest lies in developing reading and listening skills through the use of multimedia technology. ORCID: https://orcid.org/0000-0001-5569-049X

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