The Impacts of E-Learning Readiness in Higher Education during COVID 19 Pandemic

Aisha Alsobhi[1*], Maram Meccawy[1*], and Zilal Meccawy[2]

[1] *Faculty of Computing and Information Technology, King Abdulaziz University, Jeddah 21589, SAUDI ARABIA.*
[2] *English Language Institute, King Abdulaziz University, SAUDI ARABIA.*
*Corresponding Author (Email: ayalsobhi@kau.edu.sa1, mmeccawy@kau.edu.sa).

Abstract

The COVID-19 pandemic caused by the novel coronavirus SARS-CoV-2 in early 2020 had global impacts, including on universities. As a preventive measure to halt the spread of the virus, the Kingdom of Saudi Arabia (KSA) closed all its higher education institutions in March 2020 and imposed a nationwide curfew. This substantially affected teaching activities, which were primarily still being conducted face-to-face. Against this backdrop, this paper explores the readiness of Saudi higher education, as exemplified by King Abdulaziz University, to shift to online learning and explores the challenges experienced by students and teachers during the process. Specifically, it examines the main factors influencing the usage of the e-learning system and the challenges facing its implementation during the COVID-19 pandemic, drawing on the e-learning readiness assessment framework to assess the readiness of the university for e-learning in the crisis. To this end, the study conducted a survey of 547 students and 213 teachers at King Abdulaziz University to examine their perspectives on various aspects of e-learning. The findings highlight the importance of certain dimensions of e-learning readiness in relation to students, staff, and infrastructure, including acceptance of e-learning, technical skills, and the right cultural mindset, in the event of a crisis like the COVID-19 pandemic.

Disciplinary: Higher Education (Education Technology, Elearning).

©2021 INT TRANS J ENG MANAG SCI TECH.

Cite This Article:

1 Introduction

The ongoing COVID-19 pandemic has compelled higher education institutions around the world to transition to online or distance learning with almost immediate effect. Stakeholders,

including teachers and students, have discovered that in such a crisis, they must be able to respond by engaging in different or novel learning methods, such as e-learning systems and mobile learning applications. While neither online nor distance learning are themselves new, the pandemic is starkly underlining how all educational stakeholders must learn to explore the opportunities they offer.

Throughout the crisis, the field of education has received substantial support from large organizations that are making many of their product features available free of charge. Microsoft, for example, lifted existing user limits and offered a free premium version of its Teams software for six months. Similarly, until 1 July 2020, Google gave users free access to its video conferencing platform for meetings of up to 250 people in addition to free recording functionality for its G Suite and G Suite for Education users (Molla, 2020). Meanwhile, Zoom agreed to raise the time limit on video calls in Japan, Italy, China and the US (Molla, 2020). Thus, this crisis has served to underline the increasing importance of online tools in modern education.

Prior to the COVID-19 pandemic, there were few distance learning universities in Saudi Arabia, and most Saudi universities required the physical presence of students in lectures. However, some universities did avail of technology-supported learning in various forms and formats. For example, they integrated learning management systems (LMS) and supplemented live classes with recorded lectures. In addition, some teachers have shifted to so-called flipped learning, using videos to transfer knowledge and saving the face-to-face course time for open questions and activities. Purely online courses, however, are rare in Saudi higher education, and numerous e-learning centers are exploring how to communicate the advantages of e-learning as well as improve current e-learning-supported teaching and online teaching practices. Hence, this research aims to examine e-learning readiness in the context of King Abdulaziz University (KAU) and to explore the challenges that have emerged during the COVID-19 pandemic from the perspectives of students and teachers. To this end, the research question is addressed:

- What are the main factors affected the e-learning readiness of KAU during the COVID-19 pandemic?

2 Related Literature

2.1 E-Learning Readiness

E-learning readiness is defined as the capacity of an individual or institution to take advantage of the benefits of online learning (Lopes, 2007). More specifically, it can also be defined as to what extent a stakeholder can use e-learning resources, including multimedia technologies, to enhance the quality of learning (Kaur and Abas, 2004). Maugis et al. (2004) defined it more simply as the ability of an individual to avail of the opportunities offered by internet technologies, while Al-araibi et al. (2019) used the term 'E-learning readiness' to refer to how far an institution is able to use and integrate e-learning. In a similar vein, Ouma et al. (2013) defined it in terms of the factors that need to be achieved before the implementation of e-learning can be considered a

success. Overall, an understanding of e-learning readiness allows universities to evaluate their readiness level, determine any existing gaps, and adapt their strategy to address these gaps in building an effective e-learning system.

Before undertaking e-learning, both students and teachers must be ready (Akaslan and Law, 2011), meaning, according to Zeithaml and Parasuraman (2002), that they must have a certain level of preparedness to adopt relevant technologies to achieve their educational goals. This readiness encompasses teachers' and users' awareness and knowledge of as well as attitudes towards educational technology (Msila, 2015). Oliver (2001) was among the first to highlight the importance of e-learning readiness to the successful outcome of e-learning programs. Assessing the e-learning readiness of all stakeholders, therefore, enables the right policy measures and development plans to be implemented to ensure that all e-learning participants are informed and have adequate technological capabilities. In addition, e-learning assessment provides educational institutions with key information that they can use to develop solutions tailored to the specific needs of learners (Kaur and Abas, 2004).

Due to the increasingly important roles played by e-learning as well as the introduction of new e-learning platforms and technologies, the e-learning readiness of stakeholders, including students, teachers and institutions, has increasingly come to the fore. However, the crisis brought about by the COVID-19 pandemic has moved this question of readiness from theory to practice as universities worldwide have been forced to suddenly shift to full online learning. Hence, this study takes the opportunity to examine to what extent the previous e-learning readiness of KAU was influential in successfully transitioning during the pandemic.

2.2 E-learning Readiness Framework

Basak et al. (2016) built a conceptual framework based on eight critical success factors in implementing e-learning in the context of higher education, namely resources, institutions, ethics, evaluation, social interactions, managements, pedagogical factors, and technical factors. Beyond higher education, success factors for e-learning have also been identified in other fields, such as business (Sela and Sivan, 2009).

Developing e-learning readiness assessments, however, requires a somewhat different approach in that such investigations tend to focus on potential weaknesses rather than critical success factors. According to Mosa et al. (2016), who reviewed current approaches to assessing e-learning readiness, most models highlight technology as the most critical factor. Specifically, the authors defined the most important technical aspects based on how frequently they were used in models, namely internet access, hardware, computer availability, software, IT support, technical skills, cybersecurity, and the communications network and infrastructure.

Finally, to assess e-learning readiness in the context of Iranian higher education, Darab and Montazer (2011) developed a detailed model that consisted of the three core infrastructural components of a university, namely the hard infrastructure, the soft infrastructure, and the coordination, supervision and support infrastructure. While hard infrastructure encompasses the

communications network and equipment, soft infrastructure refers to such aspects as policy, regulations, standards, management, finances, culture, security, human resources, and content. The final infrastructure comprises the supervision, support, and assessment dimensions. The authors argued that the most critical success factor in e-learning is institutional readiness, while underlining the need for appropriate policies and institutional business strategy in addition for continuously assessing and improving the delivery of e-learning.

2.3 King Abdulaziz University Readiness During COVID-19 Pandemic

Online learning materials, specifically how they are provided to and used by students, comprise the main challenge facing students during the crisis caused by the COVID-19 pandemic. A good e-learning system is cost-effective, easy to use, interactive, and ubiquitous in that it is available regardless of time and place. KAU adopted the Blackboard learning management system, in particular during the pandemic, as it offers a range of outstanding features that facilitate e-learning. Since the start of the outbreak and the associated curfew in March 2020, KAU has made around 140,000 virtual classes available via Blackboard according to KAU's Deanship of E-Learning and Distance Education. In particular, the deanship has focused on enhancing faculty members' and students' technological competencies since 9 March 2020, when in-person education was halted and online learning was initiated. To this end, both synchronous and asynchronous training sessions were offered, benefitting more than 14,000 students and teachers. The deanship employed an integrated technical support team to offer state-of-the-art technical support to staff and students through a call center, social media platforms, Blackboard, and (kayako) the Help Desk Software with support ticketing system. In total, the team handled 18,111 phone calls and 22,346 WhatsApp messages and dealt with 11,348 electronic support tickets. Through these efforts, 52,295 staff and students received necessary technical support. Finally, the amount of technical support offered by the Deanship of Information Technology at KAU since March 2020 has reached 117 hours and 50 hours for the Educational Affairs system and Blackboard system, respectively. In the meantime, 483 hours were spent overseeing various operating systems, applications, and databases. All of the statistics and information are according to a report published by the Deanship of E-Learning and Distance Education (KAU_DDL, 2020).

In the field of mobile learning, KAU further strengthened the communication between teachers and students by utilizing the MyKAU application which was created before the COVID-19 pandemic. MyKAU is a direct channel offering students fast and effective communication with the university as well as access to its electronic services. They are also able to communicate with their teachers via the app and avail of features including student information and transcripts and academic schedules. According to the application's statistics, more than 15,616 messages were sent by the students to their teachers during the pandemic, with teachers replying to the tune of 10,649 messages. Overall, 1,649,479 messages were sent through MyKAU application during March 2020

alone, the month that saw the cessation of face-to-face classes, according to the Deanship of Information Technology report (KAU_DIT, 2020).

All these efforts underline the role that university e-learning readiness plays in ensuring a successful transition to e-learning. As KAU had already been using full e-learning for selected courses, and partial e-learning for other courses e.g. in the form of online quizzes and lectures, the groundwork was set for teachers and students to be ready to handle distance learning when the university was forced to close. For those teachers previously only used blackboard to upload their course materials and never ventured into pure online learning, the university endeavored to offer the right technical support to assist their implementation of e-learning. Hence, e-learning readiness emerges as a critical factor in student motivation and satisfaction in the context of distance education.

3 Method

This study is descriptive research in that it studies a population based on a survey. The instrument used in the research was a questionnaire that sought to explore the e-learning readiness of KAU university during the COVID-19 pandemic from the perspectives of students and teachers. Specifically, three aspects of e-learning readiness were considered, namely teaching and learning factors, technological and social factors, and assessment factors. The sample population was divided into the categories of (1) teachers with knowledge and experience in their respective fields and (2) students; these sub-populations were surveyed separately. The teacher survey used a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree to assess 47 items), while the student survey used a 3-point scale (Yes, Sometimes, No) to assess 45 items. Both surveys also gathered the participants' demographic variables, including gender (both students and teachers) age, years of professional experience and academic ranking (teachers only) to enable the researcher to determine whether these variables affected the provided responses. The teacher survey further contained two open-ended questions, namely "What solutions do you propose to improve e-learning at KAU?" and "What do you consider to be the best platform for virtual classes. Why?". The student survey included one open-ended question that asked whether the respondent found it easy to follow the teaching provided in the virtual classes, and if not, then why.

The survey was distributed to respondents during the lockdown and transition to distance learning, which was March-May 2020. It was completed by 213 teachers and 547 students and all participants were ensured that their responses would remain confidential and that their anonymity would be maintained to allow them to give answers that were as honest as possible without fear of repercussions from the university for any potential criticism of the e-learning initiatives.

3.1 Quantitative Results

This section presents the analysis of the quantitative data collected through the survey. The demographic data are first presented to gain an overview of the sample's characteristics as well as the study's key variables.

3.1.1 Demographic Data

Table 1 presents the gender of the respondents, female teachers 80.3%, and male 19.7% of respondents.

Table 1: Demographic Data

Academic Ranking		Gender		Age		Work experience	
Ranking	Teachers	Male	Female	Age Range	Teachers	Range of years	Teachers
Professor	16			21 - 29	8	One year or less	9
Associate Professor	25	42	171	30 - 39	80	From 2 to 5 years	46
Assistant Professor	72			40 - 49	76	From 6 to 10 years	48
Lecturer	37			Above 50	49	More than 10 years	110
Language Instructor	38						
Teacher Assistant	10						
Other	15						
Total: 213							

The students' ages were not assessed as these were in line with the age of university students (19-25 years). The teachers were asked about their age as this variable is considered to indicate an individual's life experience and was thus of interest in this research. From Table 1, the majority of teachers were aged 39 and below, whereby 37.6% were aged 30-39.

Most teacher respondents (51.6%) reported having worked in the field for more than 10 years, as outlined in Table 1. According to Rice (2003), teaching experience enhances teaching effectiveness and has also been associated with increased student motivation and achievement.

The teachers' academic ranking was distributed across seven categories (Table 1). The largest group of respondents comprised assistant professors (33.8%), followed by language instructors (17.8%), lecturers (17.4%), associate professors (11.7%), professors (7.5%), others (7.1%), and teacher assistants (4.7%).

3.1.2 Assessing E-learning Readiness at KAU

As mentioned in the literature review, Darab and Montazer (2011) developed an e-learning readiness model for higher education institutions. Specifically, the authors highlight that an institution's readiness for e-learning can be split into its readiness for the *product* of education and its readiness for the *process* of education. The former comprises the dimensions of network capabilities and equipment as well as policies, standards, and management. The latter encompasses the dimensions of culture, society, regulation, finance, content, and human resources.

Table 2: Reliability of the framework dimension/indicator.

	Dimension/ Indicator	Cronbach's alpha
Educational Product Readiness	Standards	0.75
	Management	0.75
	Network	0.86
	Equipment	0.92
Educational Process Readiness	Content	0.72
	Human Resources	0.73
	Culture	0.76

This study draws on Darab and Montazer's (2011) model to examine KAU's level of e-learning readiness during the COVID-19 pandemic. Each dimension of the model was examined based on the responses to the questions of the survey (except for Regulations, Finance and Security), which assessed the perspectives of students and faculty members of the 21 faculties at KAU to evaluate their respective e-learning readiness. Furthermore, each dimension's reliability was measured using Cronbach's alpha, see Table 2 for each component of the model. A Cronbach's alpha of 0.9 shows excellent internal consistency, 0.8 good consistency, 0.7 acceptable, 0.6 questionable, 0.5 is poor, and 0.4 unacceptable internal consistency. The Cronbach's alphas for all items above 0.70, indicating acceptable internal consistency in this research.

The statistical analysis results in Table 2, the highest means are attributed to the dimensions of human resources (M = 4.4, SD = 0.75), content (M = 4.3, SD = 0.75), and standards and management (M = 3.9, SD = 0.90), indicating that both teachers and students at KAU were very familiar with the basic skills required for e-learning. However, the responses for the dimensions of culture (M = 3.5, SD = 1.10) and equipment (M = 3.27, SD = 0.98) show that there is still room for improvement, underlining that teachers' and students' acceptance of e-learning, i.e., recognizing its benefits and importance, is still low. Moreover, this also highlights that students still have relatively little interest in the use of modern learning tools.

Table 3: Descriptive statistics of research variables and One-sample t test results (test value = 3)

	Dimension/Indicator	Mean	Std. Deviation	Std. Error Mean	*t-test*	Sig. (2-tailed)
Educational Product Readiness	Standards	3.9	0.90	0.06	10.8	0.00
	Management	3.9	0.90	0.06	10.8	0.00
	Network	3.8	0.94	0.06	12.9	0.00
	Equipment	3.27	0.98	0.11	1.82	0.00
Educational Process Readiness	Content	4.3	0.75	0.05	24.7	0.00
	Human Resources	4.4	0.75	0.05	26.2	0.00
	Culture	3.5	1.10	0.07	7.64	0.00

As Table 3 shows the average of all dimensions is greater than the potential mean (i.e. >3), while the meaningfulness of all indicators is less than 0.05; hence, the average of all dimensions is greater than 3 and it is meaningful. Further, the one-sample t-test is significant with a 95% confidence level. Overall, this demonstrates that teachers and students at KAU have adequate knowledge and technical skills for e-learning, although they still lack motivation in operating in an e-learning environment. In the following, the findings on the e-learning readiness of KAU are analyzed based on Darab and Montazer's (2011) model.

3.1.2.1 Standards and Management Readiness

At KAU, the Deanship of E-Learning and Distance Education is responsible for managing electronic content. The deanship outlines the overall standards for virtual classrooms, including the template for each course and the need to present the course objectives, syllabus, and materials, among other things. Furthermore, the deanship organizes workshops at the start of the semester to familiarize teachers and students with the online courses and their usage. After the closure of face-to-face learning in March 2020 due to the COVID-19 pandemic, the number of workshops rose

significantly to over 50 for teachers and 60 for students, catering to 8,258 teachers and 7,594 students. In this study, 68.5% of the respondents stated that they had received sufficient training to be able to organize virtual classes during the transition to e-learning, while 74% reported satisfaction with the level of training and technical support they had received during this period.

3.1.2.2 Network Readiness

In terms of network readiness, 55.7% of respondents reported that the quality of their internet connection for e-learning was good, while 19% even evaluated it as excellent. In contrast, 25% indicated that their connection was poor. This research further revealed that the connection difficulties experienced by the respondents were primarily related to internet speed, in particular, that of the teacher giving the lecture.

3.1.2.3 Equipment Readiness

In terms of the equipment needed to transition to e-learning, 58.4% of student respondents reported owning a personal computer, and 32.8% had access to a shared computer. Meanwhile, 8.9% said that they had no access to a computer and could only participate in online learning using tablets or mobile phones. As having inappropriate equipment can significantly impact student outcomes, this raises a point of concern for the university in the process of implementing its e-learning program. Hence, to support students eager to participate in online courses, KAU introduced an initiative to offer students computers if they could not afford these themselves (KAU_Web, 2020a).

3.1.2.4 Content Readiness

The learning plan, including the teacher's preferences and pedagogical approach, must be in line with the content of the curriculum, which requires the effective transfer of the required knowledge and skills to the students. In this study, 93% of respondents reported that the features on the Blackboard platform, including voice recording, whiteboarding and screen sharing, supported the teaching experience.

3.1.2.5 Regulations Readiness

As mentioned, the Deanship of E-Learning and Distance Education, which is responsible for managing electronic content. Specifically, it was important to ensure that the courseware developers, i.e. the professors and content developers, were sufficiently protected and appreciated as the content creators through regulations and other initiatives. For example, the university identifies and acknowledges outstanding content developers by awarding a prize to the best online course on Blackboard each semester, thereby enhancing teachers' motivation by allowing their e-learning accomplishments to be recognized (KAU_Web, 2020b).

3.1.2.6 Financial Readiness

It should be noted that both public and higher education are tuition-free in Saudi Arabia and the government allocates substantial amounts to education, reaching 193 billion Saudi Riyals in 2020 (Ministry of Finance, 2020).

3.1.2.7 Human Resources Readiness

Regarding teachers' familiarity with the necessary technical skills, 90.6% of the teachers in the survey reported that their skills were adequate and had assisted them in both finishing the curriculum using e-learning and in organizing final assessments. Meanwhile, 38% of the teacher respondents highlighted that they had used the e-learning platform prior to the COVID-19 pandemic for midterm or final assessments. In terms of their motivation towards e-learning, 59.6% stated that they felt prepared for online teaching prior to the cessation of face-to-face learning. Meanwhile, 61.5% of the student respondents stated that they had sufficient technical skills, such as installing software and using search engines, and felt adequately prepared when full online learning was initiated at the start of the COVID-19 pandemic.

3.1.2.8 Culture Readiness

The dimension of culture readiness refers not only to the organization's culture but also the attitudes and behavior of teachers towards e-learning, as shown by Psycharis (2005). He further underscored the importance of establishing the right culture as a solid foundation for successful e-learning implementation by an organization. KAU had already ensured the beginnings of the right e-learning culture long before the outbreak of COVID-19 by organizing online courses and establishing Blackboard as the official platform for teachers to teach some paid Distance Learning and External Courses a well as share course content. In line with this, the survey showed that 59.6% of teachers considered themselves ready for online teaching via Blackboard and Blackboard Ultra even before the transition to pure online learning in March 2020. Similarly, 85.4% of the surveyed teachers showed an understanding of the importance and benefits of e-learning.

3.1.2.9 Security Readiness

KAU made the Deanship of Information Technology responsible for assuring the security of the e-learning process. In particular, it required that a variety of approaches be used to ensure that individual and organizational information would not be at risk, that the information transmitted during the process would be authentic, that no hackers would be able to access the educational environment, and that all users, i.e. students, teachers, and administrators, could have a safe learning environment. The deanship accomplished these objectives by using highly effective web-based antiviral software and defining the relevant computers as domain users to facilitate program installation and operation, thereby closing potential channels for viral or hacker intrusion. Furthermore, this improved the overall security of the utilized programs and strengthened KAU's security readiness.

3.2 Qualitative Results

This study also gathered qualitative data in the survey to achieve the research aim of assessing the e-learning readiness of KAU. These data were examined using qualitative content analysis based on the deductive approach. To understand the data, this study began with the nine pre-categories taken from Darab and Montazer's (2011) model, namely standards and management, network, equipment, content, regulations, financial, human resources, culture and security. The

survey respondents' answers to the open-ended questions were first scripted and then initially assigned to the nine categories. It soon emerged that these responses could only be assigned to those five categories that highlighted areas that KAU needs to focus on to enhance its e-learning readiness and strengthen its online teaching and learning. This is because the qualitative data focused on the problems and challenges experienced by the stakeholders and their suggested solutions rather than on the learning experience in general. The instructional needs reported by the surveyed teaches and students are presented in Table 4, categorized according to Darab and Montazer's (2011) model.

Table 4: List of expressed instructional needs of faculty and students in conducting e-learning

Dimension	Instructional needs
Standards	Proper lesson plan formats to make teaching hours more effective.
	Educational support for electronic content production (teaching assistants, content producers).
	Strategy to motivate students through e-learning in basic sciences.
Network	Technical support for electronic education (computer and network technical support).
Content	Knowledge of the production of e-content, animation, and digital simulation.
	The abilities of schools and faculties to create and design online applications as well as features that suit their respective disciplines.
Regulations	Prevention of cheating and plagiarism in e-learning.
	Ensuring privacy and security in e-learning.
	Integrating ethics into e-learning.
Culture	Knowledge of teaching and learning technologies.
	Knowledge of new educational software.
	Students' ability to use e-learning.
	Students' motivation towards e-content.
	Online teaching strategies.

4 Conclusion

From this study, the deep involvement of all stakeholders is likely to strengthen the academic performance of higher education institutions. Against the background of an unprecedented need to switch to online learning, e-learning readiness underlines the need for (1) students to be able to fully accept and adapt to the increasingly rapid changes in technology; (2) teachers to receive sufficient training; (3) institutions to have e-learning readiness as part of their overall strategy; (4) adequate financial support; (5) the right culture for e-learning, encompassing both social and psychological preparedness and the attitudes of all stakeholders. Meanwhile, e-learning readiness can also extend beyond individuals to include an institutions' policies, strategies, and practices in developing or supporting students' implementation of the tools of online learning (Karp and Fletcher, 2014).

5 Availability of Data and Material

All information is included in this study.

6 References

Al-araibi, A.A.M., Naz'ri bin Mahrin, M. & Yusoff, R.C.M., (2019). Technological aspect factors of E-learning readiness in higher education institutions: Delphi technique. *Education and Information Technologies*, *24*(1), 567-590.

Akaslan, D., & Law, E. L. (2011, April). Measuring teachers' readiness for e-learning in higher education institutions associated with the subject of electricity in Turkey. In *2011 IEEE Global Engineering Education Conference (EDUCON)* (pp. 481-490). IEEE.

Alebaikan, R., & Troudi, S. (2010). Blended learning in Saudi universities: challenges and perspectives. *ALT-J, 18(1), 49-59.*

Alsaeid, K., & Hanan, I. (2011). *The opportunities and constraints experienced by students and teachers using online systems for learning English at King Abdulaziz University, Saudi Arabia.* PhD thesis, University of Warwick.

AI-Youbi, A. O., Al-Hayani, A., Bardesi, H. J., Basheri, M., Lytras, M. D., & Aljohani, N. R. (2020). The King Abdulaziz University (KAU) pandemic framework: a methodological approach to leverage social media for the sustainable management of higher education in crisis. *Sustainability*, *12*(11), 4367.

Basak, S.K., Wotto, M. & Bélanger, P., (2016). A framework on the critical success factors of e-learning implementation in higher education: A review of the literature. *Int. J. Educ. Pedagog. Sci*, *10*(7), 2409-2414.

Darab, B. & Montazer, G.A., (2011). An eclectic model for assessing e-learning readiness in the Iranian universities. *Computers & Education*, *56*(3), 900-910.

Hassanzadeh, A., Kanaani, F. & Elahi, S., (2012). A model for measuring e-learning systems success in universities. *Expert Systems with Applications*, *39*(12), 10959-10966.

Karp, M. M., & Fletcher, J. (2014). *Adopting new technologies for student success: A readiness framework.* New York, NY: Columbia University, Teachers College, Community College Research Centre.

KAU_DDL. (2020). *The Final Report for Activating Distance Education and Electronic Exams in the Second Semester of The Academic Year 1440-1441 AH (translated from arabic).*

KAU_DIT. (2020). *The Deanship of Information Technology Report for IT Activity in the Second Semester of The Academic Year 1440-1441 AH (translated from arabic).*

KAU_Web. (2020a). The university launches an initiative to provide computer devices to students in need who are unable to access electronic systems (translated from Arabic). Retrieved from https://www.kau.edu.sa/Content-0-AR-277815

KAU_Web. (2020b). University President's Award for Excellence and Creativity in E-Learning "Fifth Session" (translated from Arabic). Retrieved from https://www.kau.edu.sa/Pages-Fifth-Course.aspx

Kaur, K. & Abas, Z. W. (2004) An assessment of e-learning readiness at Open University Malaysia. *39*(12), 1017-1022.

Lopes, C. T. (2007). Evaluating e-learning readiness in a health sciences higher education institution. In *IADIS International Conference ELearning*.

Choucri, N., Maugis, V., Madnick, S., Siegel, M., Gillet, S., O'Donnel, S., & Haghseta, F. (2003). Global e-readiness-for what. *Center for eBusiness at MIT*.

Ministry of Finance. (2020, 11 September 2020). Approved Allocation for Government Sectors in 2020 Budget (translated from Arabic). Retrieved from https://www.mof.gov.sa/en/budget/Pages/thebudget.aspx

Molla, R. (2020), Microsoft, Google, and Zoom are trying to keep up with demand for their now free work-from-home software. https://www.vox.com/recode/2020/3/11/21173449/microsoft-google-zoom-slack-increased-demand-free-work-from-home-software.

Mosa, A., Naz'ri bin Mahrin, M. & Ibrrahim, R., (2016). Technological aspects of e-learning readiness in higher education: A review of the literature. *Computer and Information Science*, *9*(1), 113-123.

Msila, V., (2015). Teacher readiness and information and communications technology (ICT) use in classrooms: A South African case study. *Creative Education*, *6*(18), 1973.

Oliver, R. G. (2001). *Assuring the quality of online learning in Australian higher education*. In Proceedings of 2000 Moving Online Conference (pp. 222-231). Gold Coast, QLD. Norsearch Reprographics.

Ouma, G., Awuor, F., & Kyambo, B. (2013). E-learning readiness in public secondary schools in Kenya. *European Journal of Open, Distance and E-learning, 16*(2), 97-110.

Psycharis, S., (2005). Presumptions and actions affecting an e-learning adoption by the educational system-Implementation using virtual private networks. *European Journal of Open, Distance and E-learning*, *8*(2), 1-10.

Rice, J.K., (2003). *Teacher quality: Understanding the effectiveness of teacher attributes*. Economic Policy Institute, 1660 L Street, NW, Suite 1200, Washington, DC 20035.

Sela, E. & Sivan, Y., (2009). Enterprise e-learning success factors: An analysis of practitioners' perspective (with a downturn addendum). *Interdisciplinary Journal of E-Learning and Learning Objects*, *5*(1), 335-343.

Zeithaml, V.A., Parasuraman, A. & Malhotra, A., (2002). Service quality delivery through web sites: a critical review of extant knowledge. *Journal of the academy of marketing science*, *30*(4), 362-375.

Dr.Aisha Y. Alsobhi is an Assistant Professor at the Faculty of Computing and Information Technology at KAU. She received her Ph.D. in Computer Information System from Middlesex University, UK. Her research interests include semantic web, adaptive technology, and e-learning.

Dr.Maram Meccawy is an Associate Professor at the Faculty of Computing and Information Technology at King Abdulaziz University (KAU). She received her Ph.D. from the University of Nottingham, UK. Her research interests include adaptive hypermedia, e-Learning, MOOC, and educational technologies.

Dr.Zilal Meccawy is an Assistant Professor at the English Language Institute at KAU. She received her PhD in Education from the University of Nottingham, UK. Her research interests are language assessment, language, culture and identity, technology in education, and second language acquisition.