Factors affecting Successful Implementation of eLearning: Study of Colleges and Institutes Sector RCJ Saudi Arabia

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Zulfiqar Ali Solangi(✉), Fahad Al Shahrani, Siraj Mohammad Pandhiani
Jubail Technical Institute, Colleges and Institutes Sector Royal Commission Jubail, Saudi Arabia
zulfs@hotmail.com

Abstract—The colleges and institutes sector Royal Commission Jubail (JCIS) represents four higher educational institutes namely, Jubail University College (JUC) for male and for female, Jubail Industrial College (JIC), and Jubail Technical Institute (JTI). All of the institutions are under one patronage General Manager of JCIS. Several courses are very similar in content and delivery offered at all institutes. ELearning is the ideal form of delivery for higher education students in JCIS. This study aims to explore the specific factors affecting successful implementation of eLearning as major barriers at JCIS. This research will extend the existing theoretical model Technology Acceptance Model (TAM) and develop an extended model of eLearning for successful implementation and adoption of eLearning solutions at colleges and institutes sector of Royal Commission Jubail. The study will attempt to investigate the various barriers those affect the successful implementation of eLearning in the sector. It is also expected that this research study will provide strategies for academicians in the development and implementation of online courses. In this research study, quantitative research approach would be applied which may utilize instrument survey questionnaire (for students, teachers, and management) from all colleges and institutes of the sector.

Keywords—eLearning, pedagogics, distance learning, learning management system

1 Introduction

Today, Information and Communication Technology (ICT) has changed higher education in the course of recent decades. Specifically, exploitation of advanced learning innovations like PDAs, smart phones, tablets with broadband network to web and social media have conveyed generous changes to the way higher education institutes, colleges, and universities give learning chances to students, the job responsibilities of educational institutes and trainers have changed as needs to be [1]. Learning and teaching by the use of internet, web applications, social media platforms, and mobile apps has made easier and informal for both students and teachers in today's eventful

life routines [2]. Vigorous information and communication technologies has swapped traditional pedagogy and tutoring approaches with digital revolution in education sector by encouraging interactive learning and teaching novelties like other sectors of digital community [3]. Pedagogics is transformed from instructor-centred to student-centred approach with more tasks and choices for students for their learning [4]. E-learning concept refers to the use of various electronic equipment such as computers, CD (ROMs), recorded videos tapes, and other various tools in remote learning. However, in modern theories eLearning is an exploitation of advanced innovations like PDAs, smart phones, tablets with broadband network to web and social media with great mobility, plentiful resources have removed barriers of time, distance, place or people and provided affordable learning chances to students anywhere anytime.

As, in Saudi Arabia, gender based educational system vigorously needs adoption of eLearning system for educating boys and girls equally in institutes and colleges. Education Ministry of Saudi has also acknowledged the necessities of eLearning system in public universities of Saudi Arabia and invested massive resources for eLearning infrastructure to facilitate the substantial demand from on-job students to continue their studies [5]. Nonetheless, it has been seen that the achievement picked up in the eLearning framework implementation through many universities of Saudi Arabia are not specifically relative to the investment made [6]. This research study aims to investigate the possible barriers concerning effective adoption and execution of eLearning system in colleges and institutes sector of Royal Commission Jubail, which started as eLearning Project Committee in year 2015 by Director, eLearning center. First, this research study aims to achieve the reviews and analysis on potential barriers that restrict the full advantage of e-learning system in colleges and institutes sector of Royal Commission Jubail. Second, this research study would involve quantitative approach to conduct survey among the stakeholders mainly students, instructors, and staff members of JCIS. This study would aim to investigate each barrier related to students, instructors, infrastructure and technology, and management of colleges and institutes sector of Royal Commission Jubail Saudi Arabia.

2 Literature Review

2.1 Defining eLearning

Online learning began in the 1980s, while eLearning lacks a evidently recognizable beginning [1]. A typical eLearning definition refers to technological platform that facilitates learning environment for students at their own pace and time through network services like, live chats among groups of students and teachers, online assignments, online answers and questions method, discussion boards, and email support [7]. Oblinger and Hawkins [8] defined eLearning as modern learning solution in which all interactions among students and faculty members are online using internet medium. Similar view of [9], eLearning is technology based learning solely consuming private local network and internet technologies. ELearning term is well-defined as, “innovative approach to education delivery via electronic forms of information

that enhance the students' skills, knowledge, or other learning performance" [10]. According to [11] eLearning is an improved and effective method learning by utilization of multimedia and hypermedia technologies. E-learning system can benefit learners over traditional head-on learning mechanism by facilitating students to learn at their own pace and time with the use of computer or mobile, and internet facility, it reduces the expenses as well by not driving to university or college and other stationary cost consumed by students every day in the classroom.

2.2 E-learning Committee Project at Colleges and Institutes Sector, Royal Commission Jubail (JCIS)

The eLearning Project Committee, led by Chairman of the eLearning centre took an initiative to encourage eLearning at JCIS. In the wake of distinguishing abilities holes that kept the JCIS teaching staff from instructing on the eLearning system most viably, the Chairman moved toward Northern Illinois University, College of Education's Department of Educational Technology, Research and Assessment (ETRA) office, about making an organization to dispense with those holes. The two associations worked together to distinguish the best preparing approach and the best time to conduct the preparation training. The ETRA gave a serious, two-week workshop to workforce and staff of the JCIS in Jubail Industrial City in the eastern part of Saudi Arabia on the Arabian Gulf. The program, "Online Teaching and Development," was intended to support self-confidence and sharpen abilities vital for JCIS faculty to effectively coordinate online innovation into their educating processes. The workshop was held at Jubail Industrial College. The participants were all faculty members from different departments of the JCIS institutions who were chosen to be trained to become master trainers of trainers. The two-week training program was organized into three main theme topics, instructional strategies, technology integration, and blended course delivery, to provide faculty participants with needed skills and knowledge on eLearning pedagogies, technology, and teaching strategies. These skills and knowledge aimed to make online teaching and course development more efficient and effective and to make learning more productive. The goal was to help these 30 faculty participants assume critical roles such as eLearning coordinators and trainers in the JCIS's online education initiative. Colleges and Institutes Sector Royal Commission has successfully implemented and run e-learning solutions in four institutions using licensed Blackboard learning management solution since semester 371, in year 2015. This research study aims to investigate the barriers effecting successful implementation of eLearning.

2.3 Barriers related to successful implementation of eLearning

Due to the influence of culture, social life, and living standard, it is somewhat challenging barriers to incorporate eLearning into traditional pedagogy in Saudi Arabian higher educational institutions. In the literature review, these barriers are categorized in three dimensions:

- Barriers associated to students
- Barriers associated to instructors
- Barriers associated to infrastructure and technology

3 Problem Description

Today, the practice of Information and Communication Technologies (ICT) in all forms of education is enforced and continuous technological advancement in use of ICT at has replaced traditional learning schemes with modern eLearning solutions with more flexibility and freedom for students to learn at their own pace and time with the use of computer, mobile, tablets, and internet facility. Colleges and Institutes Sector of Royal Commission Jubail has just proceeded to establish the provision of eLearning in four institutes of the sector. However, there are several barriers, discussed in literature review, for successful implementation of eLearning. It is right time to investigate and verify the critical factors affecting the successful implementation of eLearning in colleges and institutes sector of Royal Commission Jubail. The proposed study will provide the holistic view on such barriers to overcome the difficulties in implementing and obtaining optimal benefits from the modern eLearning solutions approved in colleges and institutes sector of Royal Commission Jubail. Additionally, the study will attempt whether the eLearning is an effective, easy-to-use, reliable, and cost-effective method of pedagogy in the sector.

4 Proposed Framework

This section elaborates the proposed research model composed of factors related to students, instructors, and management. TAM has been utilized in several studies to investigate the students and teachers' behavior using PU, PEU, and intention to use and adopt eLearning system [12]. Proposed model design is based on TAM theory to measure the influence of its main latent factors i.e. PU, PEU, BI on user acceptance of eLearning system in different faculties of CIS Royal Commission Jubail. This model design includes four additional constructs i.e. training, self-efficacy, compatibility, and facilitating conditions adopted from different research studies and literature. TAM has been applied as the most successful and common theory than any other theories in eLearning acceptance [13]. In figure 1, the proposed research framework supposed to be tested and analyzed that shows the constructs grouped into three categories to investigate the factors influencing students', teachers' and managerial behavior towards successful implementation of eLearning system. The existing research studies statistics e 2 shows that TAM is the most utilized as a part of existing investigation is student group, trailed by teachers, and management [13].

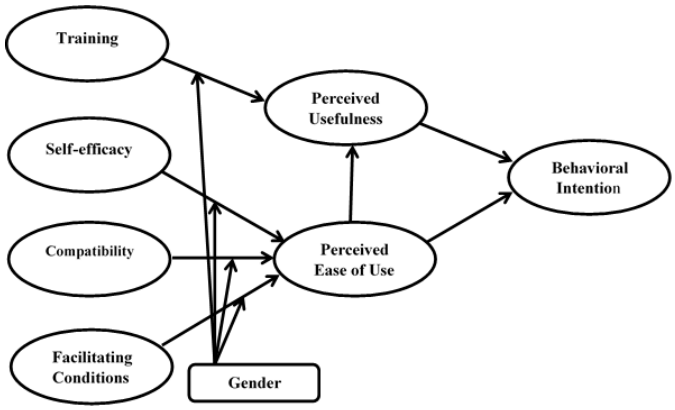

Fig. 1. Proposed Research Model

4.1 Student Factors

Self-Efficacy: The first factor is the student self-efficacy. Confidence of student from eLearning or web-based education is based on the student's personal capability to use information and communication technologies within the eLearning system. Self-efficacy is the self-belief of the students about their capacities that they workout to reach the assigned level of accomplishments in eLearning system [14]. If the student has positive perspective about eLearning then he would definitely participate in online course environment effectively. If the students' self-efficacy ranks high in information and communication technologies, his/her participation would be dynamic and positive towards use of the eLearning system courses. So, it is hypothesized as:

- Student Self-efficacy positively influence the perceived ease of use of an eLearning system

Compatibility: "The degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adopters" [15]. In proposed research framework compatibility factor states the previous learning practice and knowledge of students and teachers in comparable learning system. Educational compatibility can viably encourage the learning events of students and enhance the learning accomplishments [16]. Hence, compatibility factor may support to implement an eLearning system successfully in JCIS. This factor is hypothesized as:

- Compatibility positively influence the perceived ease of use of eLearning system.

4.2 Instructor Factor

In any learning condition, instructors are primary performers to make successful lesson delivery [17]. Learning efficiency is reflected by self-efficacy of instructors as well [18]. The Instructor's uplifting performance, interactive pedagogics, and self-confidence toward utilization of innovation results learning adequacy [17].

Facilitating Conditions: ensure the convenience and accessibility of infrastructure supporting the utilization of proposed system [19]. Thus, facilitating conditions may support to measure the availability of technical and infrastructure support that provides smooth opportunity to students and teachers to successfully adopt the eLearning system at CIS Royal Commission Jubail. According to [19] facilitating conditions sprightly influence the perceived ease of use and perceived usefulness that impacts positively on use behavior. Thus it hypothesized as:

- Facilitating conditions positively influence the perceived ease of use of eLearning system.

Training: defines the profile of the teacher. This factor may help to measure access to technology, confidence, and attitudes of teachers [20]. Training factor may be utilized to know technical efficiency and experience of teachers in utilization of Internet in learning process, conducting online trainings, seminars/workshops, course administration and use of course management systems. It is hypothesized as:

- Training positively influence the perceived usefulness of eLearning system.

Gender: In Saudi Arabia there is gender segregation due practice of cultural and religious values. Due to dissimilar behavioral characteristics of males and females from each other both gender have diverse responsibilities in the social order [21]. Females are found passive compared to males in adoption of new technology [22], whereas males are more confident, vigorous, and diverse than females [23], [24]. Therefore, this study is supposed to study the impact of gender on successful implementation of eLearning system. Following hypotheses are formulated:

- Gender positively influence moderating role between training and PU.
- Gender positively influence moderating role between self-efficacy and PEU.
- Gender positively influence moderating role between compatibility and PEU.
- Gender positively influence moderating role between facilitating conditions and PEU.

5 Conclusion

Currently, the practice of Information and Communication Technologies (ICT) in all forms of education is enforced and continuous technological advancement in use of ICT at has replaced traditional learning schemes with modern eLearning solutions with more flexibility and freedom for students to learn at their own pace and time with the use of computer, mobile, tablets, and internet facility. Colleges and Institutes Sector of Royal Commission Jubail has just proceeded to develop the provision of eLearning in four institutes of the sector. Unless a proper scientific study is conducted to know the effect of certain barriers in implementation of eLearning system, it is not enough to develop a high-tech eLearning system only. However, there are several barriers, discussed in literature review, for successful implementation of eLearning. This paper has chosen TAM theory to utilize its latent factors along with four addi-

tional factors related to students, teachers and infrastructure. It is right time to investigate and verify the critical factors affecting the successful implementation of eLearning in colleges and institutes sector of Royal Commission Jubail. The proposed study will provide the holistic view on such barriers to overcome the difficulties in implementing and obtaining optimal benefits from the modern eLearning solutions approved in colleges and institutes sector of Royal Commission Jubail. More, it expected the results would support the evidence towards successful implementation and development of the eLearning system in JCIS.

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7 Authors

Zulfiqar Ali Solangi is pursuing PhD in Information Technology from International Islamic University Malaysia (IIUM) Kuala Lumpur, Malaysia. He has completed his graduation and Master from Shah Abdul Latif University Khairpur, Pakistan. This work is carried out as a part of research grant by Colleges and Institutes sector in eLearning project implementation.

Fahad Al Shahrani is currently working as Assistant Professor and Deputy of Students Affairs and Chairman of eLearning Project at Jubail University College. He did his Ph.D. from Northern Illinois University, USA in 2014. Earlier, he has completed his Masters from University of Essex, UK in 2007. In addition, he has published research articles and member of various professional bodies and boards.

Siraj Mohammad Pandhiani is currently working as Lecturer in General Studies department at Jubail University College. He did his Ph.D. from Universit Teknologi Malaysia, Malaysia, 2017. Earlier, he has completed his MPhil. from University of Sindh, Pakistan in 2002. In addition, he has published research articles in statistics, Applied Mathematics, Time Series, Forecasting, and Machine Learning, Artificial Intelligence (Neural Network, Self-Organizing Maps, Support Vector Machine, and Least Square Support Vector Machine.

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