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AN INVESTIGATION OF E-LEARNING READINESS (E-CONTENT BROWSING, E-COMMUNICATION, E-ASSESSMENT) AMONG OPEN DISTANCE LEARNERS

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ABSTRACT

Information and Communication Technology have played a vital role in almost every field of life and especially in education. Now, physical classes are being converted into virtual classrooms. E-learning is now becoming a channel for many educational institutions. The key idea behind E-learning is to get access to a wide range of resources and material at learners' convenience. The increasing importance of this mode of study and the commencement of several tools and technologies also generates debate whether the learners are ready for e-learning or not. This is the main agenda the researcher came up with in this research. However, the most important thing is to identify the relationship between the involved learners' behaviors and their needs and perceptions. Because how to use a system is a vital indicator of the success of that system. The recent research aims to examine the willingness amongst AIOU students in terms of their concerns, perspectives, and needs. Moreover, data were collected via an E-Learning Readiness Assessment survey based on three basic aspects i.e., E-Content Browsing (ECB), E-Communication (EC) and E-Assessment & E-Assignment (EA). Then, statistical analysis is done using these constructs to find users keenness and endorsement towards e-learning amongst AIOU students. Analysis shows is no significant gender wise difference towards E-learning. However, a significant difference is seen between rural and urban students' readiness levels. Also, there was a strong impact of the constructs we explored and presented through this study.

Keywords: *E-learning Readiness, E-Content Browsing, E-Communication, E-Assessment, Open Distance Learners*

INTRODUCTION

The chance to learn using technology presents a thrilling vision to educate even more learners (Schreurs, Ehlers & Sammour, 2008). The medium which covers a wide range of clientele is distance education. Where, distance learning is compared more specifically with e-learning (Omoda-Onyait & Lubega, 2011). Providing a vigorous and speedily learning environment, eLearning improves quality of learning by using the internet to provide the students with access to huge repository of resources (Docimini and Palumbo, 2013; Jeong & Hong, 2013).

From past few years, it is becoming a need for educational institutions to adapt this mode of teaching learning environment (Alsabswy, Cater-Steel & Soar, 2013). To cope with the ever-changing technological revolution, specifically in the field of education, various institutions around the globe have adapted and created space for electronic learning. Institutions of higher education are one of the most valuable institutions amongst other institutions in the world. As society is largely influenced by them, they ultimately have greater accountability regarding whole structure of education (Naresh and Reddy, 2015). Various institutions worldwide have been planning to act in response to this technological paradigm by preparing themselves to fit in

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with the environmental and technological requirements and preferences of their students. They are conducting studies to observe and analyze the learning styles, preferences, and their requirements necessary to adopt this way of learning. In this way, they aimed to improve their current system of education by developing and revolutionizing new and creative teaching styles and innovative learning strategies.

Key idea behind embracing e-learning in educational organizations is to strengthen students' access to get educational material electronically and to the whole procedure of getting education (Doculan, 2016). This revolution allows us to have education with no limitations of time and location. In this mode of education, electronic media and different LMS through internet access is used for education. E-learning provides learners with many facilities such as interactivity, physical mobility and many more. It is self-sufficient learning style (Bidin and Ziden, 2013; Martin and Ertzberger, 2013; Viberg & Gronlung, 2013) and affects the learners positively in terms of their capacity, and attention towards alliance and communication (Chen and Tseng, 2012); Ozdamli & Uzunboylu, 2014). Previously e-learning is explored as an important aspect in getting knowledge and information from anywhere without restriction of time (Ozdamli & Uzunboylu, 2014; Ho & Dzeng, 2010; Islam, 2013; Islam, 2014; Pena-Ayala, Sossa & Mendez, 2014). However, with this demand of e-learning style there is a requirement for research on possible factors which affect acceptance of e-learning to ensure the quality of education (Ehlers & Hilera, 2012), which lacks especially in the context of developing countries (Masoumi & Lindstrom, 2012). It also serves as a fact that warrants inquiry into it. The development of appropriate digital content is a real challenge. Because learners do not have much time to explore the lengthy content. They want the right content at the right time with maximum information (Ahmed, Nazir & Mahmood, 2018). Also, learners have diverse characteristics they differ in their qualities, preferences, and learning styles (Brusilovsky, 1996). This leads to the need for their detailed assessment for making e-learning effective and useful for them (Bra, Brusilovsky & Houben, 1999).

BACKGROUND

Thorndike, back in 1932 developed an assumption that physical environment learning can be changed into virtual environment. He developed the "Theory of readiness" by developing different activities for this virtual classroom. In the early 2000s, this mode of learning started gaining more attention due to its exceptional benefits and facilities in which no location and time constraints are on the top. Moreover, this field has extended too much and is now classified into many sub-components where e-learning is one of them. Although, ICT has been incorporated around the globe in education sector, but Pakistan is lacking in ICT infrastructure and equipment etc. Information Communication Technology (ICT) continues to emerge into a new era of opportunities coming forward for learning and development purposes. The concept of e-learning has evolved significantly over the past decade. There is a rising opportunity for learning when e-learning becomes more economical and well suited. In educational programs, e-learning content has its own significance. We investigated through this research the readiness of Allama Iqbal Open University's (AIOU) learners to implement e-learning more effectively. The term "E-

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learning readiness" is defined as "an institution or individual's ability to benefit from the advantages of online learning" (Lopes, 2007). Readiness for e-learning is stated as the learner's ability to utilize e-learning resources and new technologies (Kaur & Abas, 2004). The aim is to endorse the quality of learning. According to Choucri, Maugis, Madnick & Siegel (2019) e-learning is one's ability to get facilitated by making use of internet. Moreover, while implementing e-learning, experts (Anderson, 2002; & Barron, 2002) indicated the need for institutions to be very careful and do proper assessment while adopting e-learning. However, it may be called as "online learning readiness" (Gold, Malhotra & Segars, 2001; Dray, Lowenthal, Miszkiewicz, Ruiz-Primo & Marczynski, 2011). Learning style is a collection of ways that illustrates how students learn from their environment.

There are different factors which may affect learners' readiness for e-learning. The "Technology Acceptance Model (TAM)" is proposed by Davis and Bagozzi (Hung, Chou, Chen & Own, 2010). It was the most vital and extensively used novelty adoption model. Many researchers use this model in investigating the factors which are affecting e-learning acceptance. Bagozzi, Davis and Warshaw (1992) suggested that a sequential relationship of belief, attitude, intention, behavior presented in TAM enables us to calculate the effects of new technologies by its users.

JUSTIFICATION/ RATIONALE OF THE STUDY

Different educational organizations tender courses and/or full degree programs through distance learning. To fulfill this need, AIOU is also transforming to this mode from distance learning to digital learning. As we all know that change is not abrupt, there is a need to analyze the readiness of e-learning amongst AIOU students. Technology Acceptance Model (TAM) identifies the patterns of user's behavior towards e-learning. This research intended to explore students' reflections to adopt e-learning by predicting students concerns and investigating the challenges. It is important to inspect the connection between e-learners' needs, perceptions, and their intentions to perceive knowledge because the use of a system is an important factor of success of any system.

Objectives

The objectives of this research were:

1. To find and explore the constructs/factors which play an important role in assessing e-learning readiness of students.
2. To investigate the difference between Male and Female students' readiness regarding E-Content browsing, E-Communication and E-Assessment and E-Assignments.
3. To explore the difference between rural and urban students' readiness regarding E-Content browsing, E-Communication and E-Assessment and E-Assignments.

Specific research questions of this study were:

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RQ1: Are there any significant differences in students' readiness towards different perspectives of E-learning i.e., E-Content browsing, E-Communication and E-Assessment and E-Assignments based on gender?

RQ2: What are the basic constructs/factors to consider while assessing e-learning readiness?

RQ3: Are there any significant differences in students' readiness towards different perspectives of E-learning i.e., E-Content browsing, E-Communication and E-Assessment and E-Assignments based on area?

RESEARCH METHODOLOGY

This study employed the survey approach to collect wide-ranging data. It was aimed to utilize the analysis and results to be useful for educational organizations while evaluating e-learning readiness of their students. The research was carried out in following three different phases:

- Research Tool Design,
- Data Collection Phase and
- Data Analysis phase.

Quantitative research design was used in this research. In the first phase, factors/constructs were determined in compliance with international standards which would affect the readiness towards E-learning. Then a tool was designed and validated by two experts. Finally, an upgraded version was finalized and administered in an actual survey of the study. Following is the description of the factors/constructs of readiness towards e-learning:

E-Learning Readiness Factors/Constructs

This research considered the following three main constructs while determining E-learning readiness amongst AIOU students. The research model is given in Figure 2.

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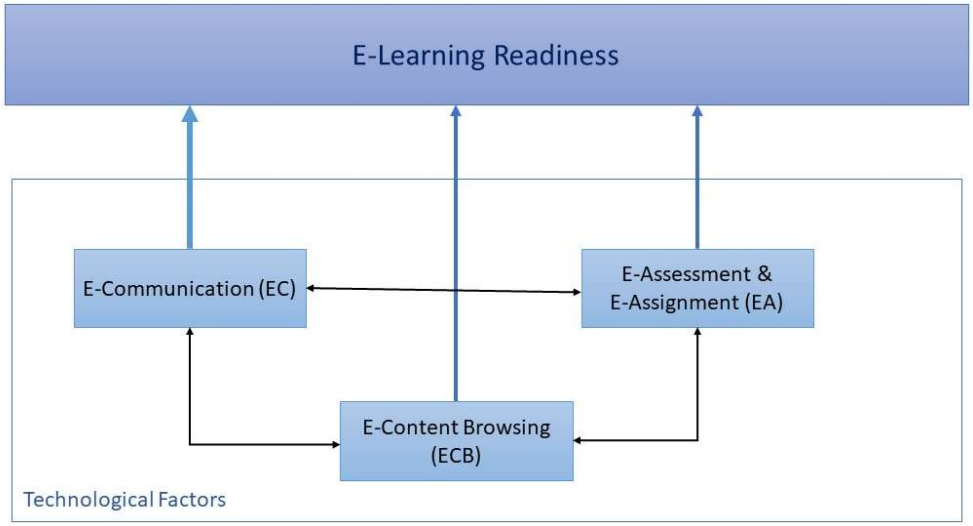

Figure 1. Technology Model for E-learning readiness

- E-Content Browsing (ECB)
- E-Communication (EC)
- E-Assessment & E-Assignment (EA)

Let's explain these constructs one by one in detail:

- **E-Content Browsing (ECB)**

E-Content Browsing is the act of looking for a set of information (Digital content) that can be transmitted over a network such as the internet. Through this construct, this study examined the readiness of internet service availability, visual and text lectures browsing by including indicators related to these sub constructs in the survey tool.

- **E-Communication (EC)**

This refers to all sorts of computer mediated communication through which individuals or groups can exchange communication with others in terms of messages on social media groups, emails, audio/video conferencing, chatting etc. With the help of this construct, this study investigated the understanding and readiness of respondents for asynchronous and synchronous interactions for learning.

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- **E-Assessment & E-Assignments (EA)**

This refers to assessment and evaluation by using technology by using different assessment formats. Where E-Assignments refer to online submission of either physical or electronic assignments to some electronic system).

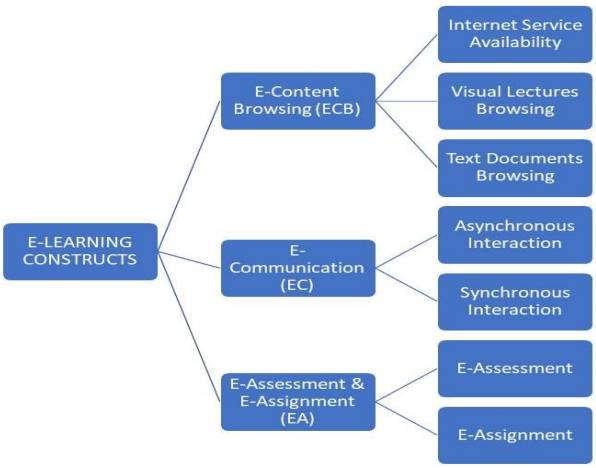

Figure 2. Constructs and Sub-Constructs

The questionnaire was divided into two parts. The first part investigated the personal information related to demographics of participants i.e., gender, age, program level, program, province, and instruction mode. The second part of the questionnaire investigated the respondents in three broad categories regarding e-learning readiness comprising: ECB, EC and EA as discussed above. This part contained 28 items in total. These items were taken from the analysis of previous studies. The respondent was asked to choose a response to conquer a neutral stance problem response pattern was varying from "1 Strongly Disagree (SD), 2 Disagree (D), 3 Neutral (N), 4 Agree (A), 5 Strongly Agree (SA)". To examine the accurateness and thorough manifestation of the research objectives, the present study evaluated the authenticity of the designed questionnaire focusing on content validity of the tool. Also checked whether the Likert scale we used against items as responses is logically appropriate in the context or not. For this purpose, a research tool was given to two highly qualified PhD experts for content validation. One from computer science field and the other one from education department. The experts were satisfied with the content included in the scale.

Table 1. Description of Constructs and Sub-constructs

Constructs	Sub-Constructs	Indicator variables	Items
E-Content Browsing (ECB)	1. Internet Service availability	Broadband/Wi-Fi availability	2
		Mobile phone internet	2

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		service availability	
	2. Visual lectures browsing	Video Lectures browsing	2
		Audio Lectures browsing	2
	3. Text Documents browsing	Web site Reading	2
		Doc/Pdf Files Browsing	2
E-Communication (EC)	1. Asynchronous communication	Communication via E-mail	2
	2. Synchronous communication	Communication via messenger/discussion board	2
		Live audio interaction	2
		Live video interaction	2
	1. E-Assessment	Skill Readiness	2
		Perceived Ease of Use	2
E-Assessment &	2. E-Assignment	Internet speed	1
E-Assignment (EA)		Preference	3

The scale was personally administered to the Graduation and master's students from three regions of AIOU. A detailed description of the population is given in Table 2. The sample was selected by using Random sampling technique. Table of Random Numbers was used to determine the sample size.

Table 2. Description of Population

	Region	**BS/Masters**	**MS/MPhil**
	Islamabad	16074	134
	Lahore	25958	24
	Peshawar	11440	20
		53472	178
Total population		53650	

Sample size was calculated by considering margin of Error 5% and confidence 95% from sample size table by Research advisors 2014. The calculated sample size was 382. A pilot study was

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also conducted to evaluate research instruments in two perspectives. First, to examine the alpha reliability/inter item consistency of scale by distributing the questionnaire to 20 respondents in the main campus of AIOU which were not included in actual sample of the study. Respondents were requested to give suggestions/ improvements in the survey were needed. It was found that more than 90% of respondents expressed that the statements in the questionnaire are clear and understandable, 95% indicated that layout is clear. 97% agreed that the length of survey is acceptable. Therefore, it was concluded that the designed instrument is fit for respondents to answer with clarity and with ease. Cronbach's Alpha (CA) reliability test was done by using SPSS. The test was conducted on 28 items distributed in the three categories (ECB, EC & EA). Result showed value of .82* which demonstrated high reliability as shown in Table 3. The value 0.70 and above for Cronbach's Alpha reliability test counts for higher internal consistency among items.

Table 3. Cronbach's Alpha (CA) reliability test

Technological constructs	**Cronbach's Alpha (CA)**
E-Content Browsing (ECB)	0.76*
E-Communication (EC)	0.80*
E-Assessment & E-Assignment (EA)	0.86*
Overall E-learning readiness	**0.82***

DATA ANALYSIS AND RESULTS

In the following tables, gender wise difference between E-Content Browsing (ECB), E-Communication (EC), and E-Assessment & E-Assignment (EA) regarding E-Learning readiness amongst AIOU students is considered. Moreover, comparisons between rural and urban and Age wise comparisons are considered and interpreted.

Table 4. Demographics of Participants

Demographic variable		**f**	**Percentage**
Gender	Male	52	43.3%
	Female	68	56.7%
Age	20 & below	40	33.3%
	21-25	64	53.3%
	26-30	9	7.5%
	30 & above	7	5.8%

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Geographical Location	Rural	35	29.2%
	Urban	85	70.8%

The frequency table indicates that 43.3% respondents were male and remaining 35.4% were female and 53.3% of respondent belonged to age group of 21-25, those who were currently pursuing their graduation with different education background whereas 70.8% of respondents belonged to urban areas.

Table 5. Difference between Male and Female Students towards E-learning

E-learning	Sub-Constructs	Gender	f	Mean	S. D	Standard Error Mean	T-value	P-value
ECB	Internet Service Availability	Male	51	14.13	2.36	.33	.554	.708
		Female	68	13.88	2.56	.31	.561	
	Visual Lectures Browsing	Male	51	15.35	6.74	.94	.570	.114
		Female	67	14.83	2.72	.33	.517	
	Text Documents Browsing	Male	51	8.27	1.85	.25	-.661	.971
		Female	68	8.50	1.83	.22	-.660	
EC	Asynchronous Interaction	Male	51	2.19	.56	.07	-1.01	.530
		Female	68	2.29	.49	.05	-.989	
	Synchronous Interaction	Male	51	28.27	6.56	.91	-.083	.651
		Female	68	28.36	5.63	.68	-.081	
EA	E-Assessment	Male	51	10.41	3.54	.49	.468	.041
		Female	68	10.14	2.62	.31	.449	
	E-Assignments	Male	51	11.50	3.26	.45	.697	.432
		Female	68	11.13	2.63	.31	.677	

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In all the three categories of E-learning (ECB, EC, and EA) there is a very slight difference between male and female students towards E-learning adoption. From the results of E-Content Browsing (ECB), for the first sub-construct Internet Service Availability males showed more inclination (mean 14.14) than females (mean 13.88). However, the p-value (0.708>0.05) indicates that there is no significant difference in this construct and both male and females are equally having Internet service availability for ECB. Similarly, the other sub constructs of ECB i.e., Visual Lectures Browsing, male are slightly more inclined (mean 15.35) than females (14.84) and p-values (p-value=0.114>0.05) indicated significant gender difference in ECB. Also, in Text Document Browsing, females are slightly more inclined (mean 8.50) than males (8.2) however, the p-values indicated (p-value=0.971) no significant gender difference in E-Assessment (EA). In the second E-learning Construct (E-Communication/EC), first sub-construct Asynchronous Interaction indicated that males and females almost had same readiness (p-value .530>.05). Another sub-construct of EC is Synchronous Interaction in which no gender difference is seen between females (mean 28.36) and males (mean 28.27) as p-value (.65 > .05) also indicated no significant impact. Finally, the last construct E-Assessment & E-Assignments (EA) have two sub-constructs E-Assessment & E-Assignments. The results of -Assessment shows that males are more ready to do E-Assessments with mean 10.41 than females with mean 10.14 and it has p-value (p-value=.41 < .05) which means it has significant difference between male and female respondents. However, E-Assignment results shows that males are slightly more ready with mean 11.50 than females with mean 11.13. p-value analysis shows no significant difference (p-value= .43 > .05).

Table 6. Difference between rural and urban students' readiness regarding E-learning

E-learning	Sub-Constructs	Gender	F	Mean	S. D	Standard Error Mean	T-value	P-value
ECB	Internet Service Availability	Rural	34	14.15	2.91	1.57	.432	.26
		Urban	85	13.93	2.29	.60	.39	
	Visual Lectures Browsing	Rural	34	15.76	7.92	1.36	1.002	.07
		Urban	84	14.77	2.85	.31	.711	
	Text Documents Browsing	Rural	34	8.24	1.89	.32	-.69	.90
		Urban	85	8.47	1.82	.19	-.619	
EC	Asynchronous	Rural	34	2.41	.61	.10	2.132	.004

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	Interaction	Urban	85	2.19	.48	.05	1.919	
	Synchronous Interaction	Rural	34	28.65	5.74	.98	.364	.98
		Urban	85	28.20	6.17	.67	.376	
EA	E-Assessment	Rural	34	9.88	3.34	.57	-.856	.39
		Urban	85	10.41	2.92	.32	-.809	
	E-Assignments	Rural	34	10.97	3.62	.62	-.764	.03
		Urban	85	11.42	2.59	.28	-.664	

Table 6 shows results regarding the difference between rural and urban students in e-learning readiness in all the three categories of E-learning (ECB, EC, and EA). From the results of E-Content Browsing (ECB), first sub-construct (Internet Service Availability) indicated that there is no significant difference in this construct and students from urban and rural areas are equally having Internet service availability (p-value = .26 > .05). Similarly, in the other sub construct of ECB (Visual Lectures Browsing) no significant difference is seen in rural and urban students (p-value=0.07 > 0.05). Also, in Text Document Browsing, no significant difference (p-value=0.90 > 0.05) is found between rural versus urban students. In the second category of e-learning readiness (E-Communication/EC), first sub-construct Asynchronous Interaction, showed significant difference (p-value= .004 < .05) between rural and urban learners. Next sub-construct of EC is Synchronous Interaction in which students from rural and urban areas showed same readiness with means 28.6 and 28.2 respectively and the p-value (p-value= .98 > .05) indicated same level of e-learning readiness among all students. The last construct (EA) had two sub-constructs E-Assessment & E-Assignments. The results of the E-Assessment showed no significant difference between students from rural and urban areas. However, E-Assignment results indicated that students belonging to urban areas had more readiness for e-assignment (Mean=11.42) than rural students (Mean=10.97). so, there is significant difference in this category between rural and urban students (p-value= .03 < .05).

Discussion

The present research aimed to explore the readiness of E-learning. The demographic profile of the respondents revealed that the proportion of female DLs (56 percent) was high than male respondents. Regarding the age, most of the students (53 percent) were 21-25 years of age. However, in the categories 26-30 years and 30 years and above there were a smaller number of respondents. It indicated that mostly youngsters participated in this study. Moreover, the proportion of urban respondents was higher than rural respondents. This disparity in geographic area may be due to the random selection of participants without having background information about the area in which they were residing. So, this is one of the limitations of the study. This study explored that three e-constructs play important role in assessing readiness of students. These include a) E-Content Browsing (ECB); b) E-Communication (EC); c) E-Assessment & E-Assignment (EA). ICT competencies have an important impact on distance learners' ability to respond quickly towards their assigned tasks. Numerous benefits are associated with e-

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assignment submission. These benefits are explored by Zikmund (2003) that electronic assignment submission has provided more convenience and has the potential to eradicate the physical assignment delivery-based submission process. The study considered sample space on subjects belonging to diverse backgrounds and ages. These two parameters were particularly considered to be the most impacting factors for online assignment submission perception affect. A similar finding based on electronic assessment has been investigated by Concannon (2005). The study examined a sample of 600 students irrespective of their IT skills with all 600 of their students being able to access the 'Accounting' e-learning materials irrespective of previous IT skills. The study examined a weak correlation of 0.43 between the IT skills and VLE skills. Likewise, a low correlation existed between students' IT skills and the ease with which they compiled the assignment. Weir (2004) examined a huge improvement in perception of students, where 88% of the student's sample indicated that online assignment submission methods had saved time. The traditional submission method for students living remote to the university is recorded postage, and several comments were made concerning this: 'Saves faffing about in the Post Office'. Also 38% of students submitted from campus, possibly because many of them live nearby. Another objective of the study was related with difference between male and female students towards e-learning. So, in gender-wise comparisons between ECB, EC and EA of distance learners, present study found no significant difference between male and female students. So, this study indicated that male and female students use same level of e-content browsing, e-communication, and e-assessment/e-assignment. Findings of this study are supported by Lee and Pituch (2002). In their study they revealed no significant difference in male and female students in their intentions to adopt e-learning. Contrary findings are also reported by Pingle and Sudha (2011). They found significant difference between male and female students' regarding E-learning readiness. However, Lee (2006) supported the present results of the study that males and female doesn't reveal any differences in adopting e-learning practices. Also, Chung, Subramaniam and Christ (2020) found similar results that no significant differences regarding gender towards e-learning adoption. This research also does not confirm the results by Present study also revealed geographical differences (rural versus urban) in E-learning readiness of distant learners. The work of Chung, Subramaniam and Christ (2020) reported geographical differences towards e-learning. They are of the perspective that government and telecommunication companies should think to develop or improve the internet infrastructure to rural areas so that students can easily adopt e-learning procedures for their studies.

Conclusion

The focus of this research was to investigate e-learning readiness amongst AIOU students. A survey was conducted, and results were presented and explained in this study. The data was collected from three different regions. First, we present the factors/ constructs which greatly help to assess the readiness of students towards E-learning. Broad categories of factors include readiness towards E-Content Browsing (ECB), E-Communication (EC) and E-Assessment and Assignments (EA). The results of survey showed that there is no significant difference between male and female students. Both are equally ready to adopt E-learning practices. However, a

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significant difference is observed in rural and urban areas students. Internet service availability is the most critical factor in that. Government and telecommunication companies should think about developing or improving the internet infrastructure in rural areas so that students can easily adopt E-learning procedures for their studies.

References

Ahmed, N., Nazir A. S., & Mahmood, A. (2018). A model of adaptive e-learning in an ODL environment Mehran university. *Research Journal of Engineering & Technology, 37*(2), 367-382. https://doi.org/10.22581/muet1982.1802.13

Albarrak, A. (2010). Designing E-learning Systems in Medical Education: A case study. *International Journal of Excellence in Healthcare Management, 3*(1), 1-12. https://www.researchgate.net/publication/238689505_Designing_E-learning_Systems_in_Medical_Education_A_Case_Study

Alsabswy, A. Y., Cater-Steel, A., & Soar, J. (2013). IT infrastructure services as a requirement for e-learning system success. *Computers and Education, 69*, 431-451. 10.1016/j.compedu.2013.07.035

Alshaher, A. (2013). The Mckinsey 7S model framework for E-learning system readiness assessment. *International Journal of Advances in Engineering & Technology, 6*(5), 1948-1966. https://www.researchgate.net/publication/321918535_THE_MCKINSEY_7S_MODEL_FRAMEWORK_FOR_E-LEARNING_SYSTEM_READINESS_ASSESSMENT

Anderson, T. (2002). Is e-learning right for your organization? Learning circuits: ASTD's online magazine all about e-learning, *Procedia-Social and Behavioral Sciences, 67*(10), 93-101. https://doi.org/10.1016/j.sbspro.2012.11.310

Aydin, C., & Tasci, D. (2005). Measuring readiness for e-learning: Reflections from an emerging country. Educational Technology & Society, 8(4), 244–257. https://www.researchgate.net/publication/220374121_Measuring_Readiness_for_e-Learning_Reflections_from_an_Emerging_Country

Bagozzi, R. P., Davis, F. D., & Warshaw, P. R. (1992). Development and test of a theory of technological learning and usage. Human Relations, 45(7), 660–686. https://www.researchgate.net/publication/43117394_Development_and_Test_of_a_Theory_of_Technological_Learning_and_Usage

Barron, T. (2002, March). *Evolving business models in e-learning: Summary white paper.* Learning on Demand. http://www.ebusinessforum.gr/old/content/downloads/EvolvBizModelsSum.pdf

Bidin, S., & Ziden, A. A. (2013). Adoption and application of mobile learning in the education industry. *Procedia-Social and Behavioral Science, 90*(10), 720-729. https://doi.org/10.1016/j.sbspro.2013.07.145

Vol. 4, No. 4 (2024)
EDUCATIONAL RESEARCH AND INNOVATION (ERI)
https://doi.org/10.61866/eri.v4i4.145
e-ISSN:2710-4354
p-ISSN:2076-9660
Received: 10/08/2024 Accepted: 25/10/2024

Borotis, S. & Poulymenakou, A. (2004). E-learning readiness components: key issues to consider before adopting e-learning interventions, *Proceedings of E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education,* 1622–1629. https://www.learntechlib.org/results/?q=Borotis%2C+S.+%26+Poulymenakou%2C+A&source=ELEARN%2F2004%2F1

Bra, P. D., Brusilovsky, P., & Houben, G. J. (1996). Adaptive hypermedia: From systems to framework, *ACM Computing Surveys*, *31(*4), 1-6. https://doi.org/10.1145/345966.345996

Brusilovsky, P. (1996). *Adaptive Hypermedia, an Attempt to Analyze and Generalize* (p. 288–304). Springer-Verlag.

Chen, H. R., & Tseng, H. F. (2012). Factors that influence acceptance of web-based eLearning

Choucri, N., Maugis, V., Madnick, S., & Siegel, M. (2019, July). *Global e-readiness - for what? MIT Libraries*. https://dspace.mit.edu/handle/1721.1/141503

Chung, E., Subramaniam, G., & Christ, D. L. (2020). Online learning readiness among university students in malaysia amidst Covid-19. *Asian Journal of University Education, 16*(2), 47-58.

Concannon, F. a. (2005). What campus-based students think about the quality and benefits of e-learning. *British journal of educational technology, 36*, 501-512. https://doi.org/10.1111/j.1467-8535.2005.00482.x

Docimini, G., & Palumbo, F. (2013). How to build an e-learning product: factors for

Doculan, J. A. (2016). E-learning readiness assessment tool for Philippine higher education institutions. *International Journal on Integrating Technology in Education, 5*(2), 33-43. 10.5121/ijite.2016.5203

Dray, B. J., Lowenthal, P. R., Miszkiewicz, M. J., Ruiz-Primo, M. A., & Marczynski, K. (2011). Developing an instrument to assess student readiness for online learning: A validation study. *Distance Education, 32*(1), 29-47. 10.1080/01587919.2011.565496

Ehlers, U. D., & Hilera, J. R. (2012). Special issue on quality in e-learning. *Journal of Computer Assisted Learning, 28*(1), 1-3. https://doi.org/10.1111/j.1365-2729.2011.00448.x

Gold, A., Malhotra, A., & Segars, A. H. (2001) Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems, 18* (1), 185-214. https://doi.org/10.1080/07421222.2001.11045669

Ho, C. L., & Dzeng, R. J. (2010). Construction safety training via e-learning: Learning effectiveness and user satisfaction. *Computers & Education, 55*(2), 858-867. https://doi.org/10.1016/j.compedu.2010.03.017

https://www.iadisportal.org/digital-library/evaluating-e-learning-readiness-in-a-health-sciences-higher-education-institution

Vol. 4, No. 4 (2024)
EDUCATIONAL RESEARCH AND INNOVATION (ERI)
https://doi.org/10.61866/eri.v4i4.145
e-ISSN:2710-4354
p-ISSN:2076-9660
Received: 10/08/2024 Accepted: 25/10/2024

Hung, M. L., Chou, C., Chen, C. H., & Own, Z. Y. (2010). Learner readiness for online learning: scale development and student perceptions. *Computers & Education, 55*(3), 1080-1090. https://doi.org/10.1016/j.compedu.2010.05.004

Islam, A. K. M. (2013). Investigating e-learning system usage outcomes in the university context. *Computers & Human, 69,* 387-399. https://doi.org/10.1016/j.compedu.2013.07.037

Islam, A. K. M. (2014). Sources of satisfaction and dissatisfaction with a learning management system in post-adoption stage: A critical incident technique approach. *Computers in Human Behavior, 30,* 249-261. https://doi.org/10.1016/j.chb.2013.09.010

Jeong, H. Y., & Hong, B. H. (2013). A practical use of learning system using user preference in ubiquitous computing environment. *Multimedia Tools and Applications, 64*(2), 491-504. 10.1007/978-3-642-22333-4_31

Kaur, K., & Abas, Z. W. (2004, December). *An assessment of e-learning readiness at the Open University Malaysia*. Research Gate. *https://www.researchgate.net/publication/228651396_An_assessment_of_e-learning_readiness_at_Open_University_Malaysia*

Keramati, A., Afshari-Mofrad, M., & Kamrani, A. (2011). The role of readiness factors in E-learning outcomes: An empirical study. *Computers & Education, 57*(3), 1919-1929. https://doi.org/10.1016/j.compedu.2011.04.005

Kituyi, G. M., & Tusubira, I. P. (2013). A framework for the integration of e-learning in higher education institutions in developing countries. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), 9*(2), 19-36. https://files.eric.ed.gov/fulltext/EJ1071350.pdf

Lee, Y, C. (2006). An empirical investigation into factors influencing the adoption of an e-learning system. *Online Information Review, 30*(5), 517-541. 10.1108/14684520610706406

Lee, Y-K., and Pituch, K. (2002). Moderators in the Adoption of E-Learning: An Investigation of the Role of Gender. https://iceb.johogo.com/proceedings/2002/PDF/f093.pdf

Lopes, C. T. (2007). Evaluating e-learning readiness in a health sciences higher education institution. *Proceedings of IADIS International Conference of E-learning*, 2(1), 59-67.

Martin, F., & Ertzberger, J. (2013). Here and now mobile learning: An experimental study on the use of mobile technology. *Computers & Education, 68*, 76-85. https://doi.org/10.1016/j.compedu.2013.04.021

Masoumi, D., & Lindstrom, B. (2012). Quality in e-learning: A framework for promoting and assuring quality in virtual institutions. *Journal of Computer Assisted Learning, 28*(1), 27-41. 10.1111/j.1365-2729.2011.00440.x

EDUCATIONAL RESEARCH AND INNOVATION

e-ISSN:2710-4354
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Vol. 4, No. 4 (2024)

EDUCATIONAL RESEARCH AND INNOVATION (ERI)

https://doi.org/10.61866/eri.v4i4.145

Received: 10/08/2024 **Accepted: 25/10/2024**

Naresh, B., & Reddy, B. S. (2015). Challenges and opportunity of e-learning in developed and developing countries-a review. *International Journal of Emerging Research in Management & Technology, 4*(6), 259-262. https://www.researchgate.net/publication/282286273_Challenges_and_Opportunity_of_E-Learning_in_Developed_and_Developing_Countries-A_Review

Nyandara, Z. (2012). Challenges and Opportunities of Technology Based Instruction in Open and Distance Learning: A comparative Study of Tanzania and China. *Paper presented at the 5th UbuntuNet Alliance Annual Conference.* https://www.researchgate.net/publication/301351275_Challenges_and_Opportunities_of_Technology_Based_Instruction_in_Open_and_Distance_Learning_A_Comparative_Study_of_Tanzania_and_China

Odunaike, S., Olugbara, O., & Ojo, S. (2013). E-learning implementation critical success factors. *Proceedings of the International Multiconference of Engineers and Computer Scientists, 1.* https://www.iaeng.org/publication/IMECS2013/IMECS2013_pp560-565.pdf

Omoda-Onyait, G., & Lubega, J. T. (2011). E-learning readiness assessment model: A case study of higher institutions of learning in Uganda. *International Conference on Hybrid Learning, 6837*, 200-211. https://link.springer.com/chapter/10.1007/978-3-642-22763-9_19

Ozdamli, F., & Uzunboylu, H. (2014). M-learning and perceptions of students and

Pena-Ayala, A., Sossa, H., & Mendez, I. (2014). Activity theory as a framework for building adaptive e-learning systems: A case to provide empirical evidence. *Computers in Human Behavior, 30*, 131-145. https://doi.org/10.1016/j.chb.2013.07.057

Pingle, Sudha. (2011). Higher education students' readiness for e-learning. *TechnoLEARN, 1*(1),155-165. https://www.researchgate.net/publication/328475442_Higher_Education_Students_Readiness_for_e-Learning

Schreurs, J., & Al-Huneidi, A. (2012). E-learning readiness in organizations. *International Journal of Advanced Corporate Learning, 5*(1), 4-7. https://doi.org/10.3991/ijac.v5i1.1885

Schreurs, J., Ehlers, U., & Sammour, G. (2008). E-learning readiness analysis (Era): An e-health case study of e-learning readiness. *International Journal of Knowledge and Learning, 4*(5), 496-508.

student/customer satisfaction. *Business Horizons, 56*(1), 87-96. https://doi.org/10.1016/j.bushor.2012.09.011

system for the in-service education of junior high school teachers in Taiwan. *Evaluation and Program Planning, 35*(3), 398-406. https://doi.org/10.1016/j.evalprogplan.2011.11.007

Vol. 4, No. 4 (2024)
EDUCATIONAL RESEARCH AND INNOVATION (ERI)
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e-ISSN:2710-4354
p-ISSN:2076-9660
Received: 10/08/2024 Accepted: 25/10/2024

teachers in secondary schools. *British Journal of Educational Technology*, *46*(1), https://doi.org/10.1111/bjet.12136

Viberg, O., & Gronlung, A. (2013). Cross-cultural analysis of users' attitude toward the use of mobile devices in second and foreign language learning in higher education: A case from Sweden and China. *Computers & Education, 69*, 169-180. 10.1016/j.compedu.2013.07.014

Weir, G. R. (2004). Practical selection of an electronic course work submission procedure. In *34th Annual Frontiers in Education, 2004. FIE 2004.* (pp. F1D--6). 10.1109/FIE.2004.1408566

Zikmund, W. G. (2003). *Business research methods* (7th ed.). Cincinnati: Thomson.