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INDEX

Sr. No.	Title & Authors	Page No.
1	Weight Loss and Pre-Diabetic Stage Reverse Prediabetic Stage to Non-Diabetic with Weight Loss - Monika R. Mer	1-12
2	Development and Tryout of Computer Assisted Instruction on Dayanand Saraswati - Narendrasinh Pratapsinh Gohil	13-17
3	A Study of the Impact of Faculty on the Opinion of Beneficiary Candidates of the Scheme of Developing High Quality Research Regarding the Scheme - Parmar Bhavini Laxmanbhai, Dr. Harshad A. Patel	18-32
4	Influence of Demographic Variables on E-learning Readiness of Students - Ishfaq Majid, Y. Vijaya Lakshmi	33-43
5	Poisonous Pedagogy- a present treatment leading to future mistreatment - Ruchi Dwivedi	44-55
6	Enhancing Early Childhood Development with Knowledge of Panchamahabhutas - Hitesh M. Patel, Samir Bhupendrakumar Vaghrodia, Jyoti Rupin Kumar Raval	56-66

Influence of Demographic Variables on E-learning Readiness of Students

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ABSTRACT

E-learning is being considered as a solution for the rising demand for higher education. It is an innovative open learning multimedia modality to deliver education. E-learning makes use of multimedia technologies to enhance teaching and learning. However, the readiness to E-learning is influenced by many factors and hence, the current study aimed at exploring the influence of Gender, Location of Institution and Type of Institution on the E-learning Readiness (ELR) of Students. The sample of the study consisted of 57 students of higher education institutions of the Jammu region of Jammu and Kashmir. The students were asked to rate their readiness to E-learning on a five-point symmetric likert scale consisting of 43 items related to various dimensions of ELR. The collected data was analysed with the help of SPSS V26. The statistical techniques like Independent Samples t-test was used to test the hypotheses. The results of the study reveal that Gender, Location of Institution and Type of Institution have no significant influence on the ELR of Students. The study concludes by giving further suggestions for research in this area.

Keywords: Information and Communication Technology, E-learning, E-learning Readiness, Gender, Location of Institution, Type of Institution, Higher Education

Introduction

E-learning is considered as a vital technology of modern era where it aims to create an interactive learning environment which is based on computers and internet. It empowers learners by providing them access to information from anywhere in the world (Mosa et al., 2016). It is an innovative open learning multimedia modality to deliver education in which acquisition of knowledge is primarily facilitated and distributed by electronic means. It can be defined as the use of electronic media (Paiva, et al., 2016; Agarwal & Pandey, 2013), Information and Communication Technology (ICT) and Educational Technology (ET) in education (Contreras & Hilles, 2015; Al-araibi, et al., 2019). E-learning uses a variety of digital communication devices and softwares to carry out teaching learning activities remotely (Hadining et al., 2019). The E-learning system possesses the ability to support interactive communication which gives the students full control of their learning (Liaw & Huang, 2011). E-learning makes use of multimedia technologies to enhance teaching and learning. It is helpful in the delivery of just-in-time information and guidance from experts belonging to various walks of life and also efficient in eliminating the distance barriers between teaching and learning. It is being introduced for enhancing the learning opportunities and facilitating students' access and success in education (Coopasami, et al., 2017). However, the potential benefits of E-learning can be accrued only when the stakeholders of it are ready to embrace it i.e. E-learning Ready. The adoption of E-learning in higher education can only be achieved by measuring the readiness towards it (Rohayani et al., 2015).

E-learning Readiness (ELR) can be defined as the “state of mental, physical and material preparedness of stakeholders for fruitful e-learning experience and action” (Nwagwu, 2019; Navani & Ansari, 2020). It can also be defined as the level of readiness and the ability to use new technological tools (Watkins & Triner, 2004; Hashim & Tasir, 2014). The ELR assessment helps organizations to design the E-learning strategies comprehensively (Kaur & Abas, 2004). It is one of the most critical factor for the successful implementation of E-learning in higher education (Rohayani et al., 2015). E-learning is being considered as a new phenomenon and the instructors and students are trying to adopt to it for its successful implementation (Mahajan & Kalpana, 2018). Hence, for successful implementation of E-learning, it becomes necessary to assess the readiness towards it.

Method

The population of the study consisted of students of higher education institutions belonging to Jammu region of Jammu and Kashmir state. The data for the study was collected online during the year 2021 when India was facing the 2nd wave of COVID19. On the basis of

review of literature (Lindasari et al., 2021; Alam, 2020; Ullah et al., 2021 etc.), the researcher used simple random sampling technique for selecting the sample of the study. The research tool was emailed to 121 students in the form of an online survey prepared in the google form. Out of 121 students, 57 students responded to the survey and hence the response rate of the study is 47.1 %.

To study the influence of demographic variables on the ELR of the students, the respondents were asked to provide their personal information and also to rate about their ELR on a continuum of five-point likert type scale of “Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree”. The scale consisted of 43 items categorized under 03 dimensions namely “Technological Readiness, Psychological Readiness and Infrastructure Readiness”. To ensure the face validity of the tool, the tool before implementation was sent to around 05 subject experts for their suggestions. The suggestions/corrections given by the subject experts were incorporated and the reliability of the full scale and dimension wise reliability tested using Cronbach Alpha (vide table 1.1) reveals that the tool was reliable (Heale & Twycross, 2015). The collected data was further analysed using SPSS V26.

Table 1.1: Reliability Statistics of the tool

Dimension	Cronbach's Alpha
Technological Readiness	0.8
Psychological Readiness	0.73
Infrastructure Readiness	0.8
Overall	0.89

Results

The current study aimed to explore the influence of Gender, Location of Institution and Type of Institution on ELR of Students. The data was collected from students of higher education institutions of Jammu region. The collected data on E-learning readiness of students was without outliers and was normally distributed as shown in figure 1.1

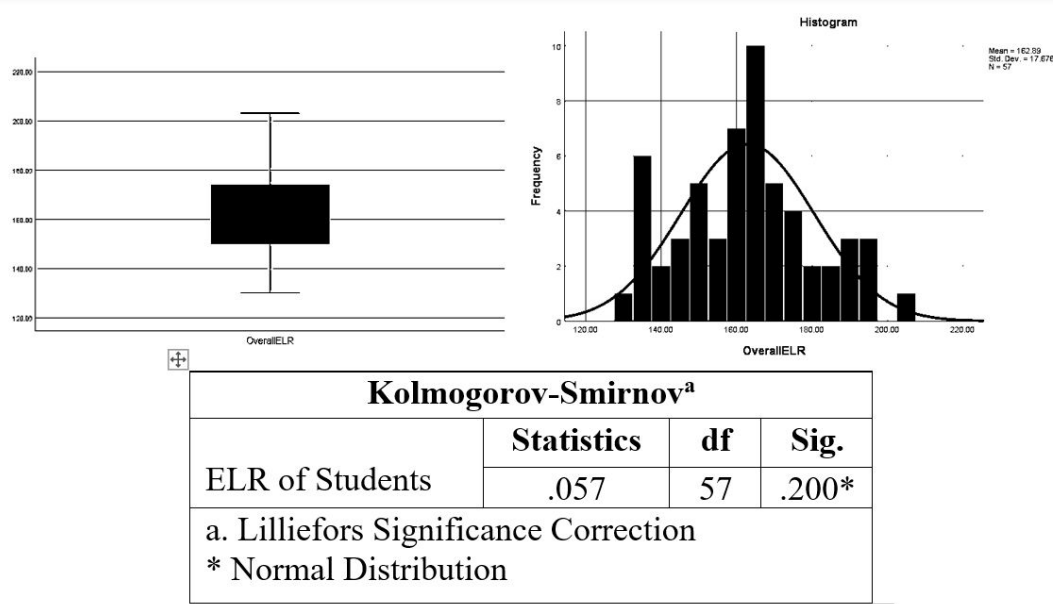


Figure 1.1: Box Plot, Normal Probability Curve and Test of Normality of ELR of Students
 The students were asked to express their level of ELR by responding to the items given on a continuum 5 point scale of ELR tool. The mean score on ELR of students was 162.89 (table 1.2) and around 52% of students are above the mean score and around 47% of them are below the mean score. The standard deviation value indicates that the E-learning readiness score of students is not highly deviated. The value of Std. Error of Mean indicates that the sample mean is more accurate reflection of the actual population mean (table 1.2)

Table 1.2: Descriptive Statistics of ELR of Students

Mean	162.89
Std. Error of Mean	2.34
Std. Deviation	17.67
Minimum	130.00
Maximum	203.00

To study the influence of Gender on ELR of students, the collected data was tested for normality (table 1.3) and was found normally distributed (Male: $KS=0.081$, $df=30$, $p > 0.05$; Female: $KS=0.097$, $df=27$, $p > 0.05$) and use of “Independent Samples t-test” ($t\text{-test} = 0.842$, $p > 0.05$) (table 1.3) revealed that gender does not have any significant influence on ELR of students and hence both male and female students are equal in terms of their ELR.

Table 1.3: Influence of gender on ELR of students

Gender of Students	Kolmogorov-Smirnov			Levene's Test for Equality of Variances	
	Statistics	df	Sig.	0.069	0.793**
Male	0.081	30	0.200*		
Female	0.097	27	0.200*		
*Normal			Equal variances assumed**		
H ₀₁			“There is no significant difference in the mean scores of E-learning Readiness of students on the basis of their gender”		
Sig			0.842		
Decision			Fail to reject H ₀₁		

To study the influence of Location of Institution on ELR of students, the collected was tested for normality (table 1.4) and was found normally distributed (Urban: KS=0.081, df=46, $p > 0.05$; Rural: KS=0.165, df=11, $p > 0.05$) and use of “Independent Samples t-test” (t-test = 0.655, $p > 0.05$) (table 1.4) revealed that location of institution does not have any significant influence on ELR of students and hence students studying in institutions located in urban and rural areas area are equal in terms of their ELR

Table 1.4: Influence of location of institution on ELR of students

Area	Kolmogorov-Smirnov			Levene's Test for Equality of Variances	
	Statistics	df	Sig.	0.330	0.568**
Urban	0.081	46	0.200*		
Rural	0.165	11	0.200*		
*Normal			Equal variances assumed**		
H ₀₂			“There is no significant difference in the mean score of E-learning Readiness of students on the basis of Location of Institution”		
Sig			0.655		
Decision			Fail to reject H ₀₂		

To study the influence of Type of Institution on ELR of students, the collected data was

tested for normality (table 1.5) and was found normally distributed (Central level: $KS=0.089$, $df=42$, $p > 0.05$; State level: $KS=0.116$, $df=15$, $p > 0.05$) and use of “Independent Samples t-test” ($t\text{-test} = 0.822$, $p > 0.05$) (table1.5) revealed that type of institution does not have any significant influence on ELR of students and hence students from Central and State level institutions do not differ significantly in their ELR.

Table 1.5: Influence of type of institution on ELR of students

Type of Institution	Kolmogorov-Smirnov			Levene's Test for Equality of Variances	
	Statistics	df	Sig.		
				0.277	0.601**
Central Level	0.089	42	0.200*		
State Level	0.116	15	0.200*		
*Normal				Equal variances assumed**	
H ₀₃				“There is no significant difference in the mean scores of E-learning Readiness of students on the basis of type of Institution”	
Sig				0.822	
Decision				Fail to reject H ₀₃	

Discussion & Conclusion

E-learning is going to play a crucial role in Education 4.0. It has the potential to address various challenges of higher education and hence, it becomes highly essential to study the readiness of stakeholders towards it. ELR is a multi-dimensional construct and demographic variables may play an important direct or indirect influence in it (Aydin and Tasci, 2005; Xhaferi et al., 2022; Aldowah et al., 2013). The demographic characteristics of students can contribute more when they are used in predicting the outcomes of learning (Rizvi et al., 2019). The influence of demographic variables on ELR of students was explored earlier as well by various researchers but as clear conclusions about them is still not established, the present research also tried to explore whether the demographic variables like Gender, Location of Institution and Type of Institution influence the ELR of Students or not. The influence of these variables on ELR was tested using “Independent Samples t-test” in SPSS V26. Gender gaps in ELR were one of the most explored questions in ELR. The influence of Gender on ELR was measured and it was found that Gender has no significant influence on

the mean score of ELR of students. The result relate to other precedent studies by Mohammad (2019); Gay, (2018), Hashim & Tasir, (2014); Tweed, (2013), Aslam et al., (2021), Adams et al., (2022) & Changiz et al., (2013) whereas the study by Naresh et al., (2016) reveal that Gender has influence on ELR of students. Similarly, the researchers tested the influence of location of institution and type of institution on ELR of students. It was found that both location of institution and type of institution have no influence on the mean score of ELR of students. The result relate to other earlier studies by Sharavjamts et al., (2022); Kaushik & Agrawal (2020); Yoo et al., (2015); Rasouli et al., (2016); Malkawi et. al., (2021). Contrary to this, the study by Sulistio (2021) reveals that location of the institution has influence on ELR of students. Also Adams et al., (2018) in his study revealed that there was influence of demographic variables on ELR of students. Similarly, Islam et al., (2021) in his study revealed that demographic variables have significant affect on effectiveness of E-learning.

The current study contributes to the existing literature by highlighting the influence of demographic variables of students on ELR. The data for the current study was collected by fully online mode due to COVID19. Regarding the delimitation of the study, the current study was delimited to Students of Higher Education Institutions (HEI's) of Jammu and Kashmir, India. The current study was conducted on the basis of data collected during COVID pandemic and there may be a probability for this scenario to change and hence, there is a need to conduct ex-post facto studies in this area. Further, similar study can be conducted on both students and teachers of HEI's to explore about their comparative ELR.

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