

## eLearning Readiness of Higher Education Faculty Members

Y. Vijaya Lakshmi

Assistant Professor, School of Education, Central University of Gujarat, Gandhinagar,  
Gujarat, India

Email: vijaya.lakshmi@cug.ac.in; jayayanduri@gmail.com

### Abstract

*The COVID-19 pandemic has forced all institutions of higher education around the world to search for various new strategies to ensure the continuity of learning. This emergency eLearning situation created by the pandemic forced the faculty members of higher education to integrate information and communication technology in their teaching learning practices more than ever before. The present cross sectional survey study explores the readiness of higher education faculty members towards eLearning in terms of their technological readiness, pedagogical readiness, resource readiness and attitude. A self-developed likert scale consisting of 62 items measuring various dimensions of eLearning readiness was used to collect the data from 421 faculty members. The findings of the study revealed that demographic factors like age, gender, level of education, designation and discipline does not have any significant influence on the eLearning readiness scores of faculty members while teaching experience had a significant influence. The overall score of e-learning readiness was found to be satisfactory. The technological readiness of faculty members was found to be high compared to their other eLearning readiness dimensions scores. Faculty members were found to be least ready in terms of their pedagogical readiness and attitude towards eLearning. To increase the eLearning readiness of faculty members, the higher education institutions should organize more and more training and also provide the faculty members with adequate software and hardware required for adoption of eLearning practices.*

**Keywords:** eLearning readiness, higher education, technological readiness, pedagogical readiness, resource readiness, attitude, eLearning Readiness of Higher Education Faculty Members

### Introduction

The growth and adoption of education technology is on a rise in education and COVID-19 has increased this adoption further. With the outbreak of COVID-19, all over the world, an emergency e-learning situation is created in educational setup (Michael, 2020) and we are left with no other option than to adopt technology driven teaching

methods. eLearning is being looked up as a potential solution to ensure continuity of learning at all schools and universities. The World Economic Forum reported a surge in the use of language apps, virtual tutoring, video conferencing tools, and online learning software in the last three months (Li & Lalani, 2020) and India is no exception to this. There is an e-learning boom in

the country with online classes (Zoom, WhatsApp, Skype etc.) becoming the norm for students, parents and teachers (Praveen, 2020). All this makes it mandatory to reconsider the current delivery and pedagogical methods in schools and higher education institutions which is a major challenge on the part of teachers (Richa, 2020). Majority of the traditional higher education institutions are scrambling towards eLearning to ensure normality in education and also to resume the academics without much gap once the COVID-19 crisis is over (Abhishek, 2020). The success of this emergency e-learning depends to a great extent on the readiness of teachers and students to accept and adopt it. Parameters like quality of faculty members, quality of IT infrastructure, acceptance of use of digital teaching technologies in teaching learning, trust/confidence on eLearning practices would determine the success of this emergency eLearning. Hence, it is rational to know the eLearning readiness of faculty members and students.

## Objectives

The purpose of the present study is to explore the eLearning readiness (ELr) of higher education faculty members with respect to various demographic factors and E-learning dimensions and hence the following are the objectives of the study:

1. To study the dimension wise eLearning readiness of the faculty members of higher education institutions of Gandhinagar district with respect to their age, gender, teaching experience, discipline, education level, designation.

2. To study the overall eLearning readiness of the faculty members of higher education institutions of Gandhinagar district.

3. To study the dimensions of eLearning readiness.

## Method

Data for the present study were obtained from the faculty members of higher education institutions located in Gandhinagar district, Gujarat using a cross sectional survey design. 154 higher education institutions/colleges listed in All India Survey of Higher Education 2018-19 (MHRD, 2019) was considered as a population frame for the present study and out of it, 60 colleges/institutions were selected using simple random technique and from those 60 institutions, the tool was distributed randomly to around 800 faculty members. 421 faculty members who responded constituted the sample of the study and thus the response rate was 53 percent with 45 percent female (n= 188) and 55 percent male (n=233). Around 75 percent of the faculty members were between the ages of 21 and 40. As high as 70 percent of faculty members had teaching experience between 1 to 10 years and 25 percent of them had teaching experience between 11 to 20 years. Most of the respondents (55 percent) were from Science & Technology discipline followed by faculty members from Social Sciences discipline (37 percent) and Arts & Humanities (8percent).

An inventory was constructed to collect the data for the current study. A thorough review of literature (Azimi,

2013; Doculan, 2014; Kaur & Abas, 2004; Mercado, 2008; Oketch, 2014) helped to identify the possible dimensions of eLearning readiness and the statements to be included in them. After making the corrections as per the suggestions given by the experts who were requested to validate the inventory, the final tool consisted of 62 items including 12 negative statements. The inventory had a total of 5 sections including a section on demographic information. The statements under the dimensions of ELr were measured using a likert scale consisting of 5 point rating items scored between 1 for strongly disagree and 5 for strongly agree. Negative statements were reverse scored before computing the dimension wise score and total ELr score. There were unequal number of statements in each dimension which ranged from 21 to 12 as follows: TR -21 likert items (maximum score would be 105 and the minimum would be 21), RR-15 likert items (maximum score would be 75 and the minimum would be 15), A-14 likert items (maximum score would be 70 and the minimum would be 14), PR-12 likert items (maximum score would be 60 and the minimum would be 12). The demographic characteristics of respondents like discipline, designation, gender, age, their education level and teaching experience were also collected. The inventory had an overall Cronbach-alpha coefficient of 0.88 indicating high level of internal consistency of the statements. Its subsections which are dimension wise had Cronbach-alpha coefficients of 0.88, 0.94, 0.90 and 0.56 for TR, PR, RR and A respectively. The data was analyzed using SPSS and results were presented using descriptive statistics and wherever

required box plots and bar charts were used to present the results. Influence of demographic factors was tested using One-way ANOVA.

## **Results and Discussion**

### **Age and ELr dimensions**

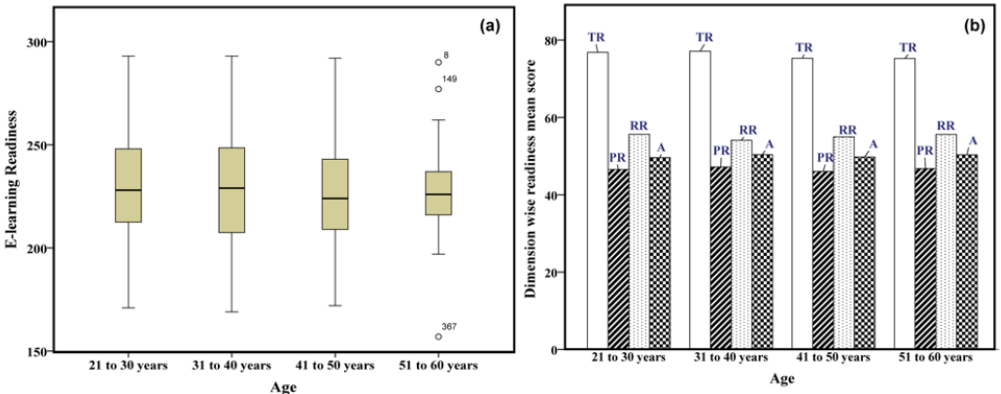
The sample for the study consisted of faculty members from various age groups. The youngest faculty was of 21 years age and the eldest was of 60 years. Figure-1 (a), (b) represents the age wise score of ELr of faculty members and the mean scores obtained by them on different dimensions of ELr i.e., TR, PR, RR and A respectively. From figure 1 (a), it can be observed that the maximum and minimum score of ELr of faculty members belonging to various age groups is almost the same except for the faculty members in the age group of 51 to 60 years. The interquartile range (IQR) indicated by the height of the boxes shows that the spread of ELr scores is more in faculty members belonging to the age group of 31 to 40 years when compared to other age group faculty members. The figure also indicates that the median score of ELr of faculty members belong to age groups of 21 to 30 years and 31 to 40 years is more than the median score

of ELr of faculty members of 41 to 50 years and 51 to 60 years age groups. The results of one way ANOVA (  $F(3, 417) = 0.247, p = .863$ ) indicated that there was no significant influence of age on ELr scores which is in line with the findings of many studies which stated that age does not have any significant impact on perception towards technological challenges (Aldowah, 2017), attitude towards

eLearning (Alenezi, 2012; Al Gamdi & Samarji, 2016), eLearning readiness (Oketch et. al., 2014), satisfaction with eLearning (Fleming, 2017) and the present finding is in contrast to the findings of studies which stated that age can have a significant effect on ELr (Al-Fadhli, 2009; Islam, 2011; Nauaf, 2010; Navani & Ansari, 2016; Soydal et. al., 2011), perception regarding contextual challenges (Adelabu, et al., 2014; Aldowah, 2017; Osika, et al., 2009), institutional barriers (Lloyd, et al., 2012), ICT anxiety (McMahon, et al., 1999), technology access and skills (Doculan, 2014), use of new technology (O'Donnell, 1991; Tusubira and Mulira, 2004). Further, from figure 2, it can be interpreted that the faculty members in

all age groups scored highest in terms of their TR. However, the mean score of their PR is least in all age groups. The faculty members also scored less in A dimension of ELr. Thus, it can be concluded that the faculty members belonging to different age groups are symmetrically distributed in terms of their ELr scores and there are no obvious outliers in any of the samples. It can also be concluded that there is no significant effect on age on ELr scores. Further, from the dimension wise mean scores we can conclude that even though the faculty members' are technologically ready for eLearning, their readiness in terms of their pedagogical practices and attitude towards eLearning is very low.

**Figure-1 (a): Box plot displaying the ELr scores of Faculty members according to their age group; (b) Dimension wise readiness mean scores of faculty members with respect to their age group**



**Gender and ELr dimensions**

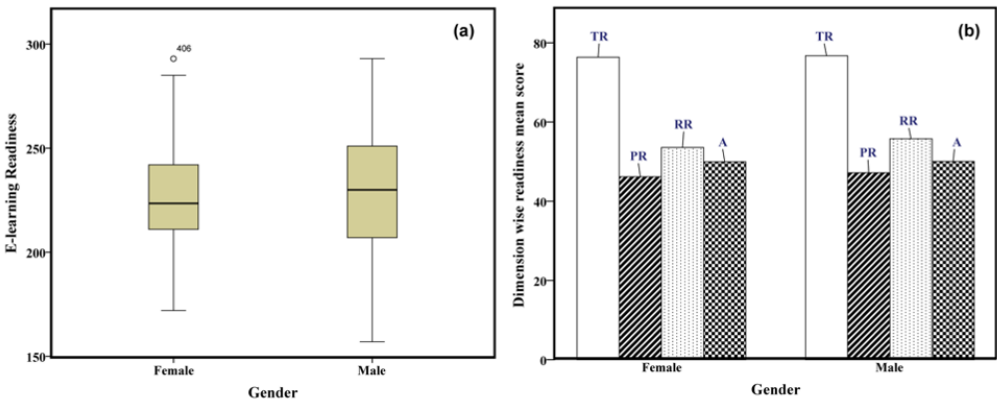
The sample for the study consisted of 45percent female faculty members and 55percent male faculty members (Female: M = 226.08, SD = 22.55; Male: M = 229.74, SD = 27.46). Figure 2 (a) and (b) represents the gender wise score of ELr of faculty members and the mean scores obtained by female

and male faculty members on different dimensions of ELr respectively. From figure 2 (a), it can be interpreted that the maximum score of ELr of male faculty members is more than the maximum score of female faculty members. Also, the minimum score of ELr of male faculty members is less than the minimum score of ELr of female faculty

members. The IQR indicates that the variability of ELr scores is more among male faculty members than in female faculty members and the median score of ELr of male faculty members is more than that of female faculty members. It also shows that the ELr scores of both female and male faculty members are symmetrically distributed and there are no obvious outliers in any of the samples. The result of one way ANOVA (  $F(1, 419) = 2.165, p = .142$ ) indicated that there was no significant influence of gender on ELr scores which is in line with the findings of many studies which stated that gender does not have any significant impact on ELr (Agboola, 2006; Oketch et. al., 2014; Soydal et. al., 2011) perception towards eLearning (Mutiaradevi, 2009; Wong & Atan, 2007,) and the present finding is in contrast to the findings of studies which stated that gender differences were observed with regard to perception towards: effectiveness/readiness of eLearning (Islam, 2011; So & Swatman, 2005;

Taha, 2014; Volery, 2000), barriers towards eLearning (Al Gamdi & Samarji, 2016; Lloyd, et al., 2012), technological challenges (Aldowah, 2017; Goulãoak, 2013; O'Donnell, 1991). Fleming, Becker & Newton, (2017) claimed that there is significant difference in the virtual learning style of males and females. Alenezi, 2012; Navani & Ansari, 2016 claimed that gender has significant correlation with regard to attitude towards eLearning. Further, from figure 2 (b), it can be interpreted that both female and male faculty members are almost equal in terms of their TR. Both female and male faculty members scored least in terms of PR followed by their least score in A dimension. They both scored higher on RR when compared to PR and A. Thus, it can be concluded that gender does not have any influence on ELr scores of faculty members and they both are technologically ready for eLearning. However, their readiness in terms of their pedagogical practices and attitude towards eLearning is very low.

**Figure-2 (a): Box plot displaying the ELr scores of Faculty members according to their gender; (b) Dimension wise readiness mean scores of faculty members with respect to their gender**



## Teaching experience and ELr dimensions

As high as 70 percent of the faculty members who participated in the survey had teaching experience between 1 to 10 years. The maximum years of teaching experience was 37 years and the minimum was one year. Figures 3 (a) and (b) respectively, represent teaching experience wise score of ELr of faculty members and the mean scores obtained by them in relation to their teaching experience on dimensions of ELr. As only three faculty members belong to the group of 31 to 40 years of teaching experience, the discussion about this group is not done here.

Further, from figure 3 (a), it can be interpreted that the faculty members who had an experience between 11 and 20 years had the least minimum score of ELr followed by the faculty members' minimum score of ELr in the experience group of 1 to 10 years. From the figure, it is also clear that the median score of ELr of faculty members whose experience is between 1 to 10 years and 21 to 30 years is more than the median score of ELr of faculty members whose teaching experience is between 11 to 20 years.

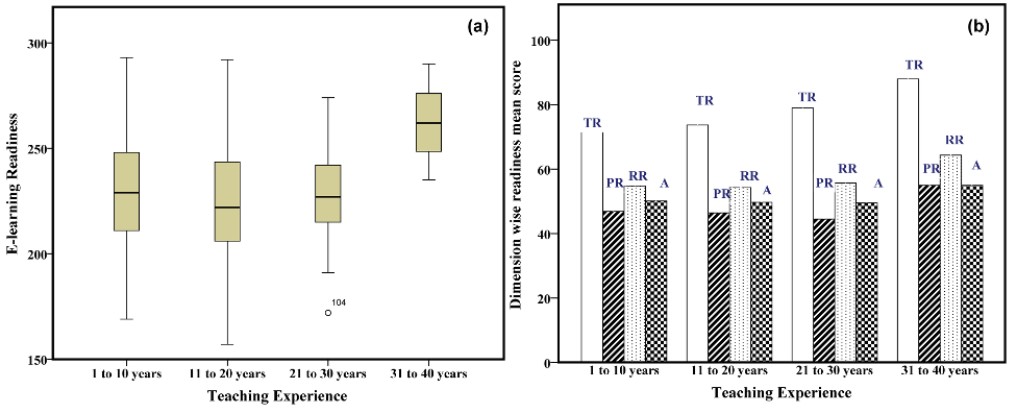
The IQR indicates that the spread of ELr scores is more among faculty members who have experience of 11 to 20 years than compared to faculty members in other experience groups. The plot also indicates that their ELr scores are symmetrically distributed. Further, it is

also clear that there are no significant outliers in any of the samples. Also, the result of one way ANOVA ( $F(3, 417) = 2.876, p = .036$ ) indicated that there was significant influence of teaching experience on ELr scores.

Alshangeeti, Alsaghier, & Nguyen, 2012 also reported that acceptance of online learning is highly dependent on the length of teaching experience and Navani & Ansari, 2016 also claimed that there is positive correlation of teaching experience with ELr. Lloyd, et al., 2012 also concluded that there is a strong effect of experience on resistance to online education. Further, figure 3 (b) shows that faculty members in all groups of teaching experience scored high in TR. Faculty members having teaching experience between 11 to 20 years had a least mean score of TR followed by faculty members who have 1 to 10 years of teaching experience. It can also be interpreted from figure 3 (b) that the faculty members scored higher on TR when compared to other dimensions.

Also, their score on RR is higher than scores of PR and A. Thus, it can be concluded that teaching experience has an influence on ELr scores of faculty members and irrespective of their teaching experience, the faculty members' readiness in terms of their pedagogical practices and attitude towards eLearning is low.

**Figure 3 (a): Box plot displaying the ELr scores of Faculty members with respect to their teaching experience; (b) Dimension wise readiness mean scores of faculty members with respect to their teaching experience**



### Discipline and ELr dimensions

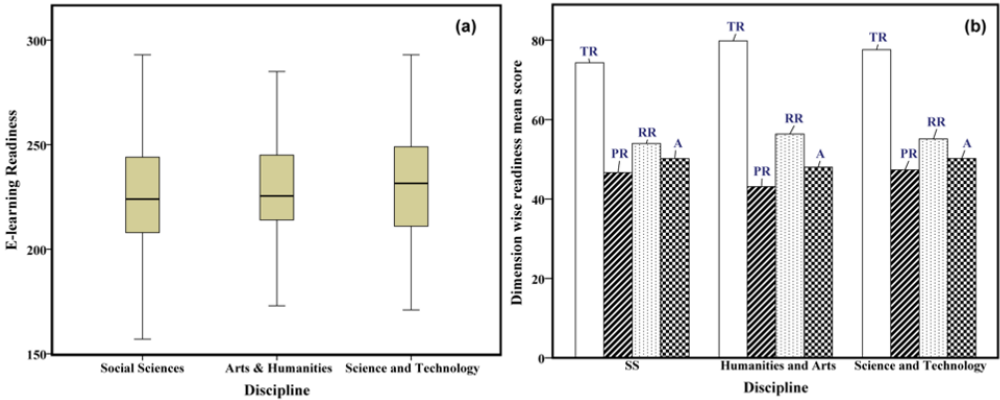
The sample for the study constituted of 55 percent faculty members from Science & Technology ( $M = 230.28$ ,  $SD = 24.92$ ), 37 percent of faculty members from Social Sciences ( $M = 225.10$ ,  $SD = 25.94$ ) and 8 percent of faculty members from Arts & Humanities ( $M = 227.29$ ,  $SD = 25.68$ ) discipline. Thus, the mean score of ELr of Science & Technology faculty members is higher than the overall mean score of ELr ( $M = 228.11$ ). Further, figure 4 (a) and (b) respectively represent the Discipline wise score of ELr of faculty members and the discipline wise mean scores by them on dimensions of ELr. The maximum score of ELr of faculty members belonging to Arts & Humanities discipline is less than the maximum score of ELr of faculty members belonging to Social Sciences and Science & Technology discipline (vide figure 4(a)). The ELr scores of faculty members belonging to Social Sciences and Science & Technology disciplines are more symmetrically distributed than the ELr scores of Arts & Humanities faculty members. Further,

it is also clear that there are no obvious outliers in any of the samples. The result of one way ANOVA ( $F(2, 418) = 1.969$ ,  $p = .141$ ) indicated that there was no significant influence of Discipline on ELr scores. Al Gamdi & Samarji, 2016 reported that there were not significant differences even in the subscale scores among the faculty members belonging to various disciplines. While, Alsaghier & Nguyen, 2012 reported that the discipline to which the faculty members belonged to had a strong influence on their rating towards or against online teaching. From figure 4 (b), it is clear that the mean score of TR of faculty members of all the three disciplines is greater than their mean scores on other readiness dimensions i.e., PR, RR and A. The faculty members of all the three disciplines have scored the least mean score in PR followed by their readiness score on A. Thus, the mean score of readiness of faculty members of all the three disciplines is higher in their TR followed by RR, A and PR. Thus, it can be concluded that discipline does not have any influence on ELr scores of faculty

members and all the faculty members are technologically ready for eLearning. However, their readiness in terms of

their pedagogical practices and attitude towards eLearning is very low.

**Figure 4 (a): Box plot displaying the ELr scores of Faculty members with respect to the Discipline; (b) Dimension wise readiness mean scores of faculty members with respect to their Discipline**



**Level of education and ELr dimensions**

The majority of faculty members (49percent) are Post Graduates (M = 228.12, SD = 28.01), and around 38percent of them are Doctorates (M = 227.37, SD = 22.39). Figure 5 (a) and (b) respectively, represent the ELr scores of faculty members according to their level of education and the mean scores obtained by them on dimensions of ELr. From figure 5 (a), the IQR shows that the ELr scores of faculty members who are Post Doctorates (PD) is more spread than the ELr scores of Post Graduates (PG), Doctorates (D). Further, the ELr scores of Graduate (G) faculty members are negatively skewed while the ELr scores of faculty members of other levels of education are distributed symmetrically. The maximum score of ELr of PG faculty members is highest followed by the maximum scores of PD, D and G faculty members. The median score of ELr of PD faculty members is highest followed

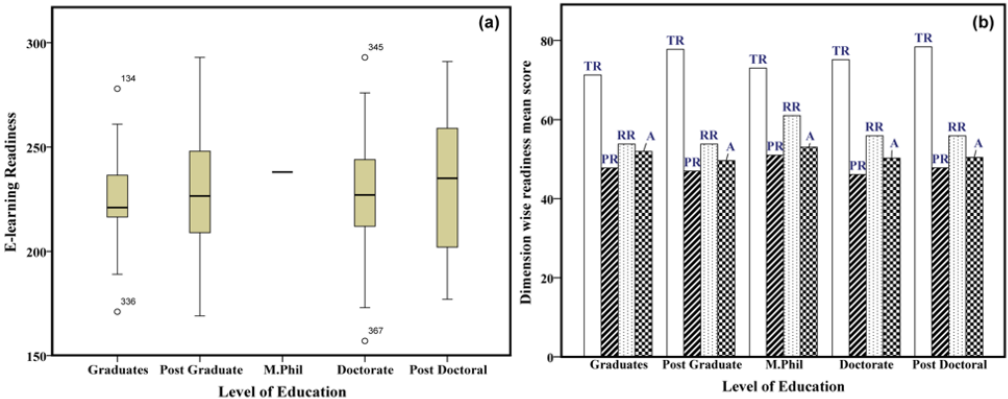
by the median score of PG, D and G faculty members. Further, there are no obvious outliers in any of the samples. The result of one way ANOVA ( $F(4, 416) = .401, p = .808$ ) indicated that there was no significant influence of the level of education of faculty members on their ELr scores. Agboola, 2006; Mutiaradevi, 2009; Oketch et. al., 2014; Parlakkiliç, 2015 concluded that faculty members' level of education does not have a significant effect on their perception towards eLearning or their ELr. On the other hand, Nauaf, 2010 claims that the level of education of faculty members significantly influenced their perception towards eLearning. Further, from figure 5 (b), it can be interpreted that faculty members with various levels of education scored highest in TR followed by their RR and A scores. The faculty members in all the groups scored least in terms of their PR. Thus, it can be concluded that level of education does not have any influence on ELr



scores of faculty members and they are technologically ready for eLearning. However, their readiness in terms of

their pedagogical practices and attitude towards eLearning is very low.

**Figure 5 (a): Box plot displaying the ELr scores of Faculty members with respect to their Level of Education; (b) Dimension wise readiness mean scores of faculty members with respect to their Level of Education**



### Designation and ELr dimensions

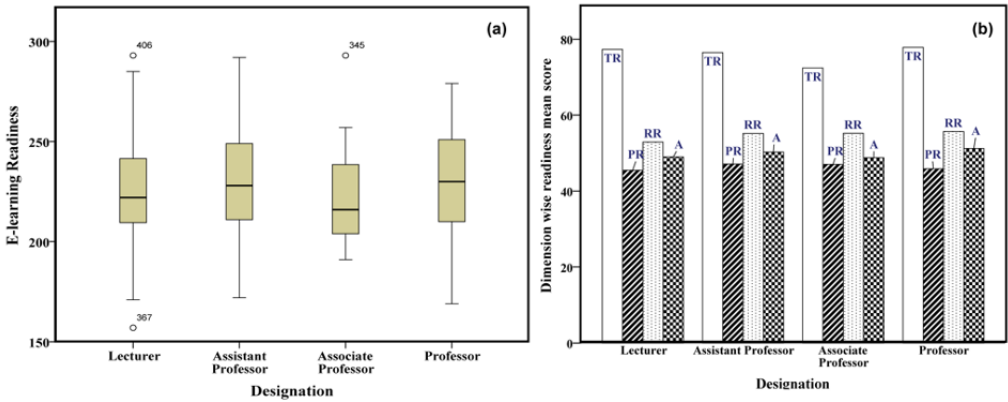
The majority of faculty members (70percent) are Assistant professors (M = 229.11, SD = 24.57), and around 19percent of them are Lecturers (M = 224.69, SD = 27.85) and around 10percent of them are Associate professors and Professors. Figure 6 (a) and (b) respectively represents the Designation wise score of ELr of faculty members and the mean scores obtained by them on dimensions of ELr i.e., TR, PR, RR and A. From figure 6 (a), it is clear that the median score of ELr of Professors is highest followed by the median scores of Assistant professors, Lectures and Associate professors. The IQR shows that the ELr scores of Lecturers are more consistent around the median followed by the ELr scores of Assistant professors, Associate professors and Professors. Thus, the ELr scores of Professors are more scattered than other faculty member groups. The ELr scores of Lecturers,

Assistant professors and Professors are symmetrically distributed and the ELr scores of Associate professors are skewed towards the higher scores of readiness. The maximum score of ELr of Professors is lower than the maximum score of other faculty members. The result of one way ANOVA ( $F(3, 417) = .929, p = .427$ ) indicated that there was no significant influence of designation of faculty members on their ELr scores. This finding is in contradiction to the studies of O'Donnell, 1991; Lloyd, et al., 2012 who stated that the position of faculty members significantly influenced their perceptions towards technological integration, cost/benefit barriers and barriers to online teaching. Further, from figure 6 (b), it can be interpreted that TR of faculty members of various designations is highest when compared to their PR, RR and A. They all scored least in PR followed by their least scores of A and RR. Thus, it can be concluded that designation of faculty members

does not have any influence on ELr scores of faculty members and they are technologically ready for eLearning.

However, their readiness in terms of their pedagogical practices and attitude towards eLearning is very low.

**Figure 6 (a): Box plot displaying the Designation wise ELr scores of Faculty members; (b) Dimension wise readiness mean scores of faculty members with respect to their designation**



**eLearning readiness**

The ELr score (all dimensions scores added together) of faculty members ranged from 157 to 293 (M = 228.11, SD = 25.42) and were normally distributed (vide figure 7 (a), (b), table 1), with skewness of .030 (SE = 0.119) and kurtosis of -.346 (SE = 0.237). From figure 7 (a) it is also clear that there are

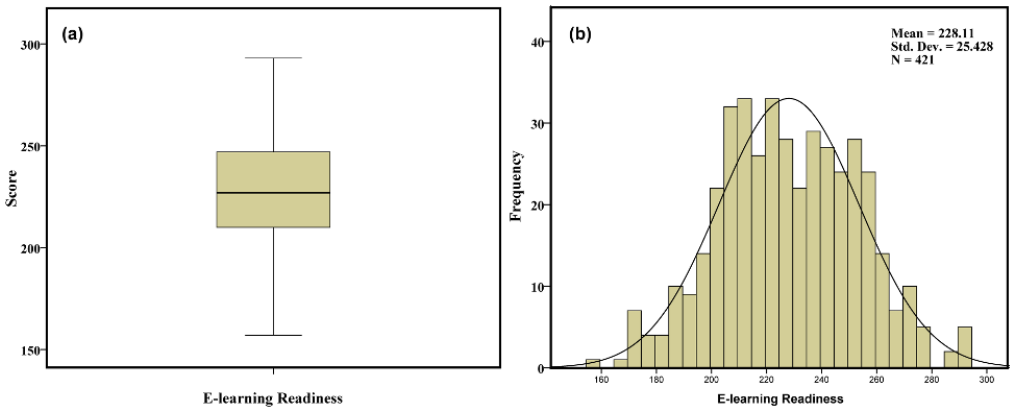
no significant outliers in the ELr scores. As high as 75percent of faculty members scored above 210 and 25percent of them scored above 247.50 (vide table 1). From table 1, it can be concluded that the ELr score of the 95percent of the faculty members of higher education institutions of Gandhinagar district will lie between 304.394 and 151.826.

**Table-1: Descriptive Statistics of ELr**

		Statistic	Std. Error
eLearning Readiness	Mean	228.11	1.239
	95% Confidence Interval for Mean	Lower Bound	225.67
		Upper Bound	230.54
	5% Trimmed Mean	228.09	
	Median	227.00	
	Std. Deviation	25.428	
	Interquartile Range	38	
Percentiles	25	210.00	
	50	227.00	
	75	247.50	

Source: Research data

**Figure-7 (a): Box plot displaying the ELr scores of faculty members; (b) Distribution of ELr scores of faculty members**



**Dimensions of eLearning readiness**

Table-2 shows the descriptive statistics of dimension wise mean score of ELr. Technological skills/components and pedagogical skills play a very important role in successful implementation of eLearning (Lloyd, 2012; Muhannad Anwar Al-Shboul, 2019; Oketch, 2014; Soong et al., 2001; Tarus & Gichoya, 2015). In the present study it was observed that faculty members scored highest in the TR dimension and least in the PR. Joseph, 2010 ; Adiyarta et al., 2018; Edumadze et al., 2014; Nisperos, 2014 emphasized that technological skills need to be improved to improve the effectiveness of eLearning. Eslaminejad et al., 2010 suggests that pedagogical innovations are required to improve the effectiveness of eLearning. Around 50percent of the faculty members scored more than the mean score of TR (vide table 2). The 50th percentile score of RR (vide table 2) indicates that 50percent of the faculty members scored more than the mean score of RR. Similarly, the 50th percentile score of A (vide table 2) shows that around 50percent of the faculty members

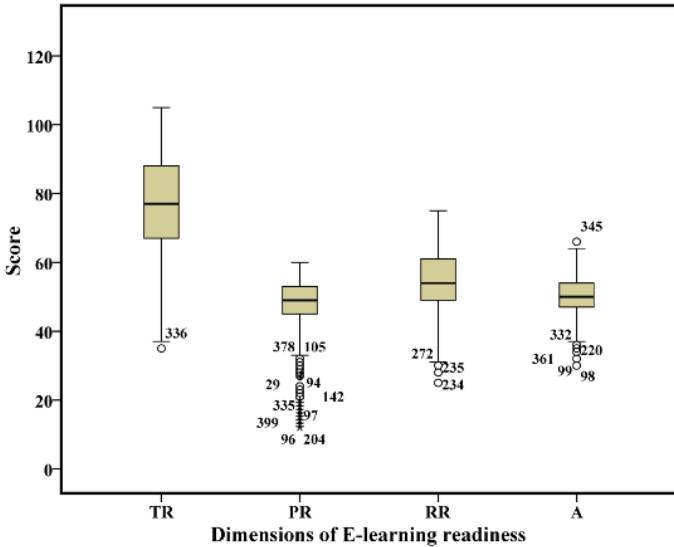
scored more than the mean score of A and the 50th percentile score of PR (vide table 2) shows that around 50percent of the faculty members scored less than 49. In this dimension, around 64percent of faculty members scored more than the mean score. From figure 8, it can be interpreted that the median score of TR dimension is highest followed by the median score of RR, A and PR. The scores of PR are skewed towards the lower side and the outliers in PR indicate the presence of very least scores in this dimension. The outliers in each of these dimensions are mild and hence it can be said that the influence of these outliers on overall ELr score is not strong (vide figure 7 (a)).

**Table-2: Descriptive Statistics of Dimensions of eLearning Readiness**

		TR	PR	RR	A
Mean		76.55	46.74	54.80	50.02
Std. Deviation		14.264	10.157	9.186	5.952
Skewness		-.245	-1.650	-.096	-.452
Kurtosis		-.405	2.709	-.010	.625
5% Trimmed Mean		76.81	47.79	54.89	50.20
Percentiles	25	67.00	45.00	49.00	47.00
	50	77.00	49.00	54.00	50.00
	75	88.00	53.00	61.00	54.00

Source: Research data

**Figure-8: Box plot displaying the dimensions wise readiness scores of faculty members**



A further item wise analysis of the statements on the basis of their mean scores is presented in tables 3 & 4 which show the list of dimension wise top four statements and bottom four statements respectively. From these tables it can be concluded that in terms of their TR, the faculty members are good at basic digital skills but lack the important skills like developing podcasts, e-books, e-quiz, discussion boards and blogs which are very essential for developing

content in eLearning platform. With regard to PR dimension, even though faculty members believed in basic principles of teaching, they all believed that teacher centered teaching is better than learner centered teaching which is not in favor of principles of eLearning. They also scored least with regard to their views on integrating various digital tools in teaching and development of question banks for the courses that they teach. Thus, the faculty members are

not ready in terms of the pedagogical dimension of eLearning. In terms of RR, it is good to know that the majority of the faculty members expressed that everyday they have access to reliable and unlimited internet connection, personal computer/laptop and a printer. However, they expressed that video editing software and e-content creating software are not available with their institutions which reduced their RR. A good point to observe is that many of the faculty members disagreed that their institutions do not have sufficient human resources or do not give any special credit for supporting eLearning practices. This indicates a positive institutional environment towards eLearning. With regard to the Attitude dimension of eLearning, the majority of the faculty members are

aware about eLearning and believe that eLearning improves the quality and efficiency of teaching. They also do not feel that eLearning is difficult to handle and frustrating to use and it increases the workload of teachers, which are very good signs for adoption of eLearning practices in higher education institutions. On the contrary, they also expressed that use of eLearning practices will not bring much difference in face to face teaching. The faculty members also do not strongly believe that eLearning reduces communication barriers between teacher and student. However, the faculty members feel shy to use technology and they also do not consider themselves as experts in using eLearning technologies and hence these could be the reasons for their lower score on A dimension of eLearning.

**Table-3: Top four statements in each Dimension of ELr**

TR	PR	RR	A
Downloading and saving files from internet	Teaching should be planned according to needs of students	Access to reliable internet connection in institution	* Feel shy to use technology
Using MS-office	The methods of teaching should be according to nature of content to be taught	Have personal computer/laptop	Know what is eLearning
Using online technologies for communication (email, Whatsapp, chat etc)	A teacher should use new pedagogical approaches	Have unlimited internet in institution	eLearning improves quality of teaching and learning
Locating variety of resources from internet	Teacher should create lesson plans before teaching	Have access to a printer in institution	eLearning will improve efficiency in teaching

*Source: Research data*

**Table-4: Bottom four statements in each Dimension of ELr**

TR	PR	RR	A
In developing Podcast for my lessons	Students' physical presence is not must in a teaching learning process	Video editing software is available in institution	eLearning reduces communication barriers between teacher and student
In developing e-books	Teacher should develop question bank for the courses that they teach	e-content creation software are available in institution	eLearning is difficult to handle & frustrating to use
In developing online quiz (using hot potatoes/ Socrative/Kahoot etc.)	Learner centered teaching is better than teacher centered teaching	* Institution does not give any special credit for using eLearning	* eLearning increases workload of teachers
In creating discussion boards	Teacher should integrate various digital tools in teaching	* The institution does not have sufficient human resources to support eLearning	I consider myself as expert in using eLearning technologies

*Source: Research data*

\* Negatively worded statements

### **Conclusion and implications**

The present study concludes that demographic factors like age, gender, discipline, teaching experience and designation of faculty members does not have a significant influence on their ELr score. However, teaching experience was found to be a significant factor in ELr. With regard to dimensions of eLearning, a good indication is that faculty members are TR for eLearning. However, it is very essential to organize training programmes to increase TR (especially with reference to improve their skills to develop podcasts, e-books, e-quiz, discussion boards and blogs.

Such training will not only change their attitude towards eLearning but also would increase their expertise in using eLearning technologies. The faculty members should also be encouraged to use various digital tools and develop e-question banks to increase their PR scores. Institutions should take the responsibility of providing necessary software and hardware facilities to faculty members for implementing eLearning practices which will increase their resource readiness scores. The findings derived in the present study provide a direction to the policy makers to take further steps in implementing/

promoting eLearning in higher education institutions. The findings also give an idea to the higher education institutions regarding the strength and weakness of their faculty members and suggest a way forward to them in adoption of eLearning practices. However, the present study considers only 4 dimensions of eLearning readiness and hence, further studies

can explore the other dimensions of eLearning readiness.

*(Acknowledgments: My sincere thanks to "Center for Policy Research in Education", PMMMNMTT, School of Education, Central University of Gujarat, for funding this research. The support of higher education faculty members who participated in this research is greatly acknowledged.)*

## References

- Abhishek Patil, (2020, April 10). Covid-19 pandemic: E-learning trends you need to watch for. Retrieved from <https://www.indiatoday.in/education-today/featurephilia/story/covid-19-pandemic-e-learning-trends-you-need-to-watch-for-1665292-2020-04-10>
- Adelabu, O. A., Adu, E. O., & Adjogri, S. J. (2014, June). The availability and utilization of e-learning infrastructures for teaching and learning. In *EdMedia+ Innovate Learning*. Association for the Advancement of Computing in Education (AACE).
- Adiyarta, K., Napitupulu, D., Rahim, R., Abdullah, D., & Setiawan, M. (2018, April). Analysis of e-learning implementation readiness based on integrated elr model. *In J. Phys. Conf. Ser*, 1007 (1), p. 12-41.
- Agboola, A. K. (2006). Assessing the awareness and perceptions of academic staff in using e-learning tools for instructional delivery in a post-secondary institution: A case study. *The Innovation Journal: The Public Sector Innovation Journal*, 11(3), 1-12.
- Al Gamdi, M. A., & Samarji, A. (2016). Perceived barriers towards e-Learning by faculty members at a recently established university in Saudi Arabia. *International Journal of Information and Education Technology*, 6(1), 23.
- Aldowah, H., Ghazal, S., Umar, I. N., & Muniandy, B. (2017, September). The impacts of demographic variables on technological and contextual challenges of E-learning implementation. *In Journal of Physics: Conference Series* (Vol. 892, No. 1, p. 012013). IOP Publishing.
- Alenezi, A. (2012). Faculty members' perception of e-learning in higher education in the Kingdom of Saudi Arabia (KSA)(Publication No.45399) [Doctoral dissertation, Texas Tech University]. Texas Digital Library.
- Al-Fadhli, S. (2009). Instructor Perceptions of e-learning in an Arab Country: Kuwait University as a case study. *E-Learning and Digital Media*, 6, 221-229

- Alshangeeti, A., Alsaghier, H., & Nguyen, A. (2009, July). Faculty perceptions of attributes affecting the diffusion of online learning in Saudi Arabia: A quantitative study. In Proceedings of the 4th International Conference on E-Learning (pp. 10-24).
- Azimi, H. M. (2013). Readiness for implementation of e-learning in colleges of education. *Journal of Novel Applied Sciences*, 2(12), 769-775.
- Doculan, J. A. D. (2014). E-learning Readiness of the Ifugao State University. *International Journal of Engineering Research*, 3(2), 2849-2853.
- Edumadze, J. K. E., Ossei-Anto, T. A., Edumadze, G., Tamakloe, W. K., & Boadi, E. A. E. (2014). Evaluating the awareness and perceptions of lecturers in using e-learning tools for teaching in the University of Cape Coast. *International Journal of Computing Academic Research (IJCAR)*, 3(1), 1-11.
- Eslaminejad Tahereh, Mona Masood & Nor Azilah Ngah (2010) Assessment of instructors' readiness for implementing e-learning in continuing medical education in Iran. *Medical Teacher*, 32(10), e407-e412. Retrieved
- Fleming, J., Becker, K., & Newton, C. (2017). Factors for successful e-learning: does age matter? *Education+ Training*, 59 (1), 76-89.
- Goulãoak, M. D. F. (2013). Virtual learning styles: does gender matter?. *Procedia-Social and Behavioral Sciences*, 106, 3345-3354.
- Islam AM, Rahim AA, Tan CL, Momtaz H (2011). Effect of demographic factors on e-learning effectiveness in higher learning institutions in Malaysia. *Int. Educ. Stud.* 4(1), 112-120.
- Joseph, S. M. (2010). *E-learning readiness among public primary teacher training colleges in Kenya*. [Doctoral dissertation, Kenyatta University], Kenyatta University Institutional Repository.
- Kaur, K., & Abas, Z. W. (2004). An assessment of e-learning readiness at Open University Malaysia. *International Conference on Computers in Education*.
- Li, Cathy, & Lalani, Farah. (2020, April 20). The COVID-19 pandemic has changed education forever. This is how. *World Economic Forum*. <https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/>
- Lloyd, S. A., Byrne, M. M., & McCoy, T. S. (2012). Faculty-perceived barriers of online education. *Journal of online learning and teaching*, 8(1).
- McMahon, J., Gardner, J., Gray, C., & Mulhern, G. (1999). Barriers to student computer usage: staff and student perceptions. *Journal of Computer Assisted Learning*, 15(4), 302-311.
- Mercado, C. (2008). Readiness assessment tool for an e-learning environment implementation. *Special Issue of the International Journal of*



*the Computer, the Internet and Management*, 16, 18-11.

MHRD. (2019). All India Survey on Higher Education 2018-19.

Michael P.A. Murphy (2020) COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy, *Contemporary Security Policy*, DOI: 10.1080/13523260.2020.1761749

Muhannad Anwar Al-Shboul. (2019). Incentives and Obstacles Influencing Faculty Members' Use of Information and Communication Technology (ICT). *Modern Applied Science*, 13(3), 66-100;

Mutiara Devi, R. (2009). *Measuring E-Learning Readiness in the Forestry Research and Development Agency of Indonesia (Publication No 1067) [Doctoral Thesis, Victoria University of Wellington]*. The Library – Te Pātaka Kōrero

Nauaf, A. S. (2010). *Concerns and professional development needs of science faculty at Taibah University in adopting blended learning*. (Publication No 3887) [Doctoral dissertation, Kansas State University]. K-State Research Exchange

Navani Y., Ansari, M. A. (2016). A study of e-learning readiness of university faculty. *International Journal of Current Research*, 8(08), 35752-35756.

O'Donnell, J. (1991). *Teacher perception of their e-learning needs to integrate e-learning into classroom instruction [Doctoral dissertation, University of Southern California]*. USC Digital Library.

Oketch, H.A., Njihia, J.M., Wausi, A.N. (2014). E-Learning Readiness Assessment Model in Kenyas' Higher Education Institutions: A Case Study of University of Nairobi. *International Journal of Scientific Knowledge Computing and Information Technology*, 5(6), 29-41.

Osika, E., Johnson, R., & Butea, R. (2009). Factors influencing faculty use of technology in online instruction: A case study. *Online Journal of Distance Learning Administration*, 12(1).

Parlaklıç, A. (2015). E-Learning Readiness in Medicine: Turkish Family Medicine (FM) Physicians Case. *Turkish Online Journal of Educational Technology*, 14(2), 59-62.

Praveen, S. (2020, May 11). Why e-learning isn't a sustainable solution to the COVID-19 education crisis in India. *The Hindu*. <https://www.thehindu.com/sci-tech/technology/why-elearning-is-not-a-sustainable-solution-to-the-covid19-education-crisis-in-india/article31560007.ece>

Richa Choudhary. (2020, April 16). COVID-19 Pandemic: Impact and strategies for education sector in India. *Economic Times*. <https://government.economictimes.indiatimes.com/news/education/covid-19-pandemic-impact-and-strategies-for-education-sector-in-india/75173099>

So, T., & Swatman, P. M. (2005, July 5-8). e-Learning readiness of Hong Kong

teachers.[Conference Session]. Fifth IEEE International Conference on Advanced Learning Technologies (ICALT'05). Kaohsiung, Taiwan. 10.1109/ICALT.2005.153

- Soong, M. B., Chan, H. C., Chua, B. C., & Loh, K. F. (2001). Critical success factors for on-line course resources. *Computers & education*, 36(2), 101-120.
- Soydal, I., Alir, G., & Ünal, Y. (2011). Are Turkish universities ready for e-learning: A case of Hacettepe University Faculty of Letters. *Information Services & Use*, 31(3-4), 281-291.
- Taha, M. (2014). Investigating the success of E-learning in secondary schools: The case of the Kingdom of *Bahrain* [Doctoral dissertation, University of Bahrain].).
- Tarus, J. K., & Gichoya, D. (2015). E-Learning in Kenyan Universities: Preconditions for Successful Implementation. *The Electronic Journal of Information Systems in Developing Countries*, 66(1), 1-14.
- Tusubira, F., & Mulira, N. (2004, September 5-8). *Integration of Information and Communication Technology in organizations: Challenges and best practices recommendations based on the experiences of Makerere University and other organizations*. [Conference session]. Universities: Taking a leading role in ICT enabled human development. Kampala, Uganda. <https://www.yumpu.com/en/document/read/8935247/integration-of-ict-in-organisations-challenges-dr-ff-tusubira>.
- Volery, T., & Lord, D. (2000). Critical success factors in online education. *International journal of educational management*.
- Wong, S. L., & Hanafi, A. (2007). Gender differences in attitudes towards information technology among Malaysian student teachers: A case study at Universiti Putra Malaysia. *Journal of Educational Technology & Society*, 10(2), 158.