ORIGINAL RESEARCH PAPER

Psychology

KEY WORDS: E-learning, technology readiness, self-confidence, acceptance, training.

ANALYSIS OF E-LEARNING READINESS IN LECTURERS DURING THE COVID-19 PANDEMIC

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ABSTRACT

Introduction: The lockdown of COVID-19 pandemic has compelled education to be done via internet. This study is about analysis of e-learning readiness in lecturers during the COVID-19 pandemic. It is inclusive of four facets namely: technological readiness, perceived self-confidence, acceptance readiness and belief towards the importance of training for e-learning. It also looks at the levels of e-learning readiness in lecturers with different years of experience. **Objectives:** To identify the extent of technology use, skill level required to adapt e-learning, acceptance readiness towards e-learning, the beliefs about their training requirements on e-learning in lecturers. To find out if the level of e-learning readiness differs with years of experience. **Methodology:** Sample size is 48, with both male and female lecturers from arts and science colleges of Chennai. Data was collected through a questionnaire: E-learning Readiness Scale. **Data Analysis:** Descriptives of the data - mean and standard deviation were analysed. **Major findings:** The lecturers with lesser work experience have higher e-learning readiness, lesser belief towards training requirements for themselves while highly experienced lecturers have lower e-learning readiness and higher belief towards training requirements for themselves. **Conclusion:** Skills as well as readiness towards e-learning was higher in lecturers with lesser work experience in comparison with the lecturers with higher work experience.

INTRODUCTION

The lockdown due to the COVID-19 pandemic has highly impacted the educational field. As a replacement of the traditional classroom, the challenges against education are positively faced by conducting online classes for students. With the progress in technology, e-learning proved to be one of the most efficient ways of teaching/learning. Teaching and assessment happens with the aid of different tools that are available on the web. In addition to these tools, the success in teaching through the web is highly reliant on the lecturer who can handle the classes skillfully. In this regard, the requirement of the technical skills of lecturers and the need for them to accept and adapt to this new normal is high.

E- learning is defined as "an instruction delivered on a digital device (such as desktop computer, laptop computer, tablet or smart phone) that is intended to support learning" (Clark & Mayer, 2016). It not only provides easy accesses to education but also helps in terms of student-teacher interaction, rather than simple, virtual, CD or taped video lessons. Teachers as well as students are expected to own at least one of the digital tools (like mobile phones, computers or laptops) provided with a good internet facility so as to ensure the utmost efficiency of e-learning. The primary challenge of lecturers towards e-learning is the readiness and skill to handle sessions and webinars, in a way that is comfortable as well as conveyable to the students. The technology readiness construct is defined as "people's propensity to embrace and use new technologies for accomplishing goals in home life and at work" (Parasuraman, 2000). Lecturers must be open to access the digitalised educational curriculum. As William James advocated, self-confidence is about "believing in oneself" (Bénabou & Tirole, 2002). It is one of the factors that evokes readiness in usage of technological tools with the required skills and without. The next facet, acceptance is referred as "the degree to which a law, measure or device is accepted" (Adell, Várhelyi & Nilsson, 2014). The more the acceptance readiness towards technology, the more will be the success of implementing e-learning. The need to be trained in regard of online teaching is a necessity. The online training is briefed as "the manipulation of the course management system (CMS)—e.g., Blackboard, Angel, or other software. The contents of training often deals with tools, especially popular Web 2.0 tools (wikis, blogs), mobile technologies (iOS, Android, etc.) and social networking programs (Twitter, Facebook)" (Meyer & Murrell, 2014).

Rationale

The lockdown of the nation because of the COVID-19 pandemic has posed a lot of challenges in the field of higher education. This situation demands lecturers to be equipped with technology and skills to conduct classes and assessments through the web. With this shift in learning and teaching it is important to check if lecturers are ready to adapt e-learning. This study aims to look at the four aspects of e-learning readiness in lecturers: technology readiness, perceived self-confidence, acceptance readiness and belief towards training requirements of e-learning. Analysis of these four aspects will aid in understanding the current level of readiness in lecturers, to identify the challenges present and focus on the areas that requires improvement to successfully conduct classes and assessment through web. It also aims to look at the levels of e-learning readiness in lecturers with different years of experience.

Objectives

1. To identify the extent of technology use by lecturers in teaching and learning.
2. To find out if lecturers have the skills required to adapt e-learning.
3. To identify the acceptance readiness of lecturers towards e-learning.
4. To find out lecturer's beliefs about their training requirements on e-learning.
5. To find out if the level of e-learning readiness differs with years of experience.

Method of investigation

Research design

Ex post facto research design.

Independent variable

Years of experience

Dependent variables

Four aspects of e-learning readiness:

- technology readiness
- perceived self-confidence
- acceptance readiness
- belief towards training requirements

Sample

Sample size of the study is 48. Purposive sampling was adopted to identify both male and female lecturers from arts and science colleges of Chennai.

Inclusion criteria

Lecturers from different arts and science colleges of Chennai city.

Exclusion criteria
Lecturers from professional colleges of Chennai city.
Lecturers from other places apart from Chennai city.

Description of the tool
E-learning Readiness Assessment Scale was adopted from the scales of previous studies (Akaslan & Law, 2011a; Akaslan & Law, 2011b; Soydal, Alır & Ünal, 2012). The questions in the E-learning Readiness Assessment Scale were altered by Mandana Mir Moftakhari in 2013. The scale measures four facets: Use of technology readiness, self-confidence readiness, acceptance readiness and training readiness. The first three questions has a response format in the form of yes/no. The rest of the questions measuring the four facets are in the form of 5-point Likert-type scale with 1 to be the lowest and 5 to be the highest indicator of readiness. The mean score is 3.40 and the expected readiness values for each variable are, 37.4 for technological readiness, 54.4 for perceived self-confidence, 34 for acceptance readiness and 10.2 for training readiness.

Procedure of data collection
Snow ball technique was used and questionnaire was circulated through Google forms.

Ethics
Ethical guidelines were followed. Sample groups were given a choice of voluntary participation. Anonymity was maintained and confidentiality was assured.

Results and discussion
Apple's Numbers was used to analyse data collected for the present study.

Descriptive Statistics
1. Mean
2. Standard deviation

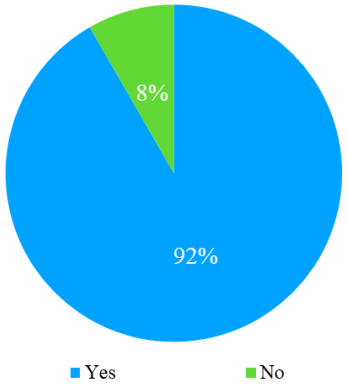

Figure 1 represents lecturers' access to an individual computer

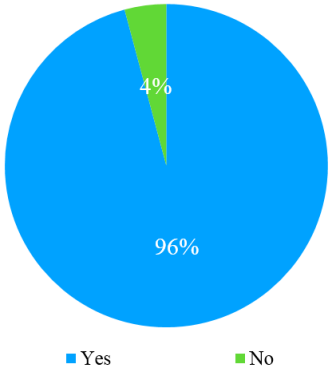

Figure 2 represents lecturers' access to an internet connection at home

From figure 1 & 2, it is understood more than 90% of lecturers claimed to have access to internet and a computer.

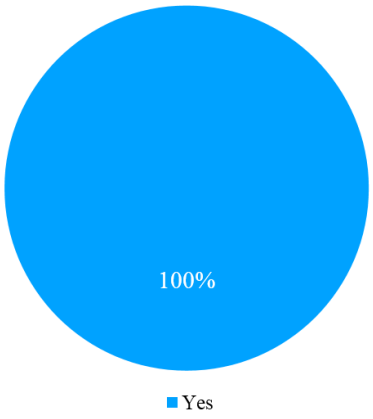

Figure 3 represents lecturers' access to an internet connected smartphone

From figure 3, it is understood that all the lecturers of the sample group have an access to an internet connected smartphone. This means that most of the lecturers have access to basic facilities which is needed for e-learning.

TABLE 1
Table 1 represents the descriptive statistics of the study i.e the mean and the standard deviation of the variables under study among the participants.

Variables	n	Minimum	Maximum	Mean	Standard Deviation
1-10 years of experience Technological Readiness	28	11	54	36.64	13.48
Perceived Self-confidence	28	16	80	55.67	18.17
Acceptance Readiness	28	17	54	34.96	11.73
Belief towards training requirements	28	3	15	9.32	3.95
10+ years of experience Technological Readiness	20	13	48	31.3	11.49
Perceived Self-confidence	20	29	73	47.1	12.69
Acceptance Readiness	20	18	54	32.35	11.51
Belief towards training requirements	20	3	15	11.2	3.33

TABLE 2
Table 2 represents the mean and standard deviation of items under technological readiness.

Items	n	Mean	Standard Deviation
1-10 years of experience			
I use internet as information source	28	3.92	1.56
I use e-mail as the main communication tool with my students and colleagues.	28	3.17	1.54
I use office software (e.g. Microsoft Office PowerPoint) for content delivery and demonstration	28	3.60	1.59
I use social network sites (e.g. Facebook, Twitter).	28	3.25	1.62

I use specific software (e.g. SPSS).	28	3.17	1.38
I use instant Messaging (e.g. MSN, Skype).	28	2.96	1.57
I use Web 4.0 tools (e.g. Blog, wiki) to share information.	28	2.89	1.47
I use file hosting services (e.g. Google Documents, Dropbox).	28	3.21	1.64
I use learning management systems (e.g. Blackboard, Moodle).	28	3.07	1.53
I use online forum and chat to communicate with my colleagues.	28	3.64	1.41
I use mobile technologies (Smartphone) to connect internet.	28	3.70	1.58
10 + years of experience			
I use internet as information source	20	3.65	1.63
I use e-mail as the main communication tool with my students and colleagues.	20	2.90	1.51
I use office software (e.g. Microsoft Office PowerPoint) for content delivery and demonstration	20	3.15	1.66
I use social network sites (e.g. Facebook, Twitter).	20	2.95	1.50
I use specific software (e.g. SPSS).	20	2.70	1.55
I use instant Messaging (e.g. MSN, Skype).	20	2.70	1.38
I use Web 4.0 tools (e.g. Blog, wiki) to share information.	20	1.85	1.03
I use file hosting services (e.g. Google Documents, Dropbox).	20	2.75	1.37
I use learning management systems (e.g. Blackboard, Moodle).	20	2.55	1.35
I use online forum and chat to communicate with my colleagues.	20	2.75	1.40
I use mobile technologies (Smartphone) to connect internet.	20	3.35	1.78

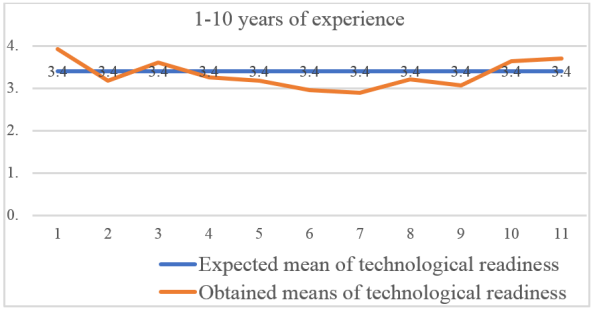

Figure 4 represents the trend in technological readiness in lecturers with less than 10 years of experience.

From table 2 and figure 4, it can be seen that lecturers with less than 10 years of experience are closer to the expected level of technological readiness. They are found to have the required computer skills, they use internet as an information source and for communication. Because there was no need for the e-learning tools earlier they are not used to those. As they have the required skills, with proper training on e-learning they will be able to use e-learning tools efficiently.

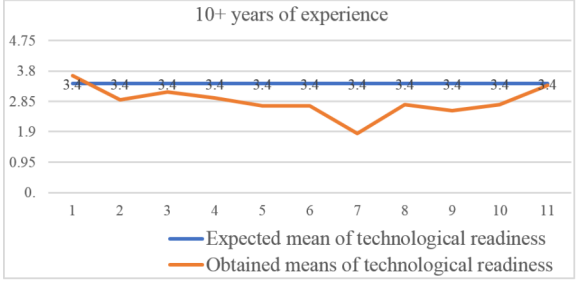

Figure 5 represents the trend in technological readiness in lecturers with more than 10 years of experience.

From table 2 and figure 5, it can be seen that lecturers with more than 10 years of experience lag behind in their technological readiness when compared to the expected level. They do not possess the required computer skills or it is less reported here. Also they use internet only as a source of information rather than communication. They are not aware of both basic and higher e-learning tools. So, the need for training on e-learning is higher here.

TABLE 3

Table 3 represents the mean and standard deviation of items under perceived self-confidence.

Items	n	Mean	Standard Deviation
1-10 years of experience			
I have information about what e-learning is.	28	3.75	1.40
I have the skills to operate a computer.	28	3.92	1.38
I am able to use office software for content delivery and demonstration (e.g. Microsoft Office Power Point, Word, Excel).	28	3.71	1.41
I am able to use web browsers (Internet Explorer, Google Chrome).	28	3.85	1.43
I am able to use search engines (Google, MSN Search).	28	3.75	1.60
I can troubleshoot most problems associated with using a computer.	28	3.35	1.41
I can use digital file management tools (e.g. deleting or renaming a file on your computer)	28	3.82	1.33
I have knowledge and ability to prepare e-learning materials	28	3.57	1.37
I can use authoring tools to create learning materials (e.g. Movie Maker, Microsoft Publisher)	28	3.07	1.41
I am able to use learning management systems(e.g. Blackboard, Moodle)	28	3.21	1.54
I am able to design Web pages for e-learning	28	3.00	1.41
I am able to moderate online discussions	28	3.60	1.39
I am able to write good study guides for e-learning	28	3.17	1.18
I am able to deal with legal issues related to e-learning (copyrights, privacy)	28	3.35	1.25
I have enough time to prepare e-learning materials	28	3.10	1.39
I feel that I am ready to integrate e-learning in my teaching.	28	3.39	1.16
10 + years of experience			
I have information about what e-learning is.	20	3.50	1.31
I have the skills to operate a computer.	20	3.40	1.14
I am able to use office software for content delivery and demonstration (e.g. Microsoft Office Power Point, Word, Excel).	20	3.40	1.23
I am able to use web browsers (Internet Explorer, Google Chrome).	20	3.55	1.39
I am able to use search engines (Google, MSN Search).	20	3.45	1.50
I can troubleshoot most problems associated with using a computer.	20	2.45	1.14
I can use digital file management tools (e.g. deleting or renaming a file on your computer)	20	3.30	1.34
I have knowledge and ability to prepare e-learning materials	20	2.85	1.26

I can use authoring tools to create learning materials (e.g. Movie Maker, Microsoft Publisher)	20	2.40	1.09
I am able to use learning management systems(e.g. Blackboard, Moodle)	20	2.80	1.15
I am able to design Web pages for e-learning	20	2.50	1.10
I am able to moderate online discussions	20	3.10	1.16
I am able to write good study guides for e-learning	20	2.70	1.12
I am able to deal with legal issues related to e-learning (copyrights, privacy)	20	2.30	0.92
I have enough time to prepare e-learning materials	20	2.55	0.94
I feel that I am ready to integrate e-learning in my teaching.	20	2.85	0.98

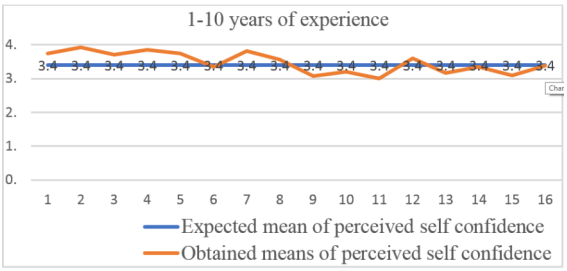

Figure 6 represents the trend in perceived self confidence in lecturers with less than 10 years of experience.

From table 3 and figure 6, it can be seen that lecturers with less than 10 years of experience are closer to the expected level of perceived self-confidence. Their basic skills to use the internet efficiently are high. They are also open towards e-learning and ready to integrate e-learning in their teaching. They have reported lag in their skills to create e-learning contents which will require training. With their reported skills and readiness to learn they will be able to integrate e-learning effectively.

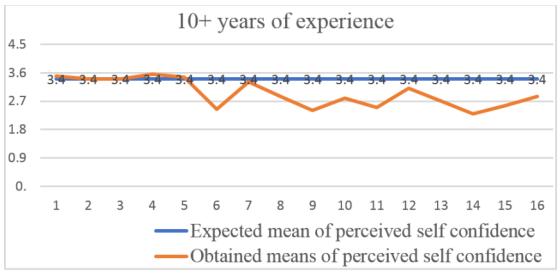

Figure 7 represents the trend in perceived self confidence in lecturers with more than 10 years of experience.

From table 3 and figure 7, it can be seen that lecturers with more than 10 years of experience lag in their perceived self-confidence compared to the expected level. They have reported lesser internet skills, lesser readiness to learn, create content and integrate e-learning in their teaching. So skills, training and education on the efficiency of e-learning tools is required.

TABLE 4

Table 4 represents the mean and standard deviation of items under acceptance readiness

Items	n	Mean	Standard Deviation
1-10 years of experience			
I am keen to prepare e-learning materials	28	3.25	1.24
I believe that e-learning can enhance the quality of the theoretical part of my subject.	28	3.43	1.32
I believe that e-learning can enhance the quality of the practical part of my subject	28	3.25	1.29
I believe my students will like e-learning.	28	3.07	1.25
I believe that my students find it easy to use e-learning.	28	2.89	1.13
I believe that e-learning can improve the quality of my teaching	28	3.29	1.36
I believe that using e-learning can increase my productivity.	28	3.18	1.36
I believe that e-learning enables me to accomplish my teaching more effectively than the traditional classroom-based approach.	28	3.29	1.30
I believe that e-learning enables learners and instructor to communicate and interact better with one another.	28	2.96	1.35
I believe that implementation of e-learning will be easy.	28	3.21	1.20
I support implementation of e-learning in my department.	28	3.14	1.24
10+ years of experience			
I am keen to prepare e-learning materials	20	2.90	1.12
I believe that e-learning can enhance the quality of the theoretical part of my subject.	20	2.85	1.04
I believe that e-learning can enhance the quality of the practical part of my subject	20	3.20	1.15
I believe my students will like e-learning.	20	3.00	1.38
I believe that my students find it easy to use e-learning.	20	3.10	1.37
I believe that e-learning can improve the quality of my teaching	20	2.85	1.39
I believe that using e-learning can increase my productivity.	20	2.80	1.47
I believe that e-learning enables me to accomplish my teaching more effectively than the traditional classroom-based approach.	20	3.05	1.32
I believe that e-learning enables learners and instructor to communicate and interact better with one another.	20	2.95	1.28
I believe that implementation of e-learning will be easy.	20	2.55	1.23
I support implementation of e-learning in my department.	20	3.10	1.21

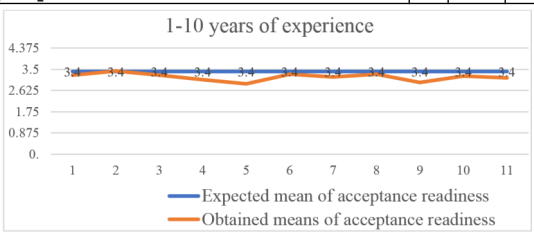

Figure 8 represents the trend in acceptance readiness in lecturers with less than 10 years of experience.

From table 4 and figure 8, it can be seen that lecturers with less than 10 years of experience are high on acceptance. They believe that e-learning improves quality of teaching and increases their productivity. It can also be seen that they believe that e-learning is not easily accessible to the students.

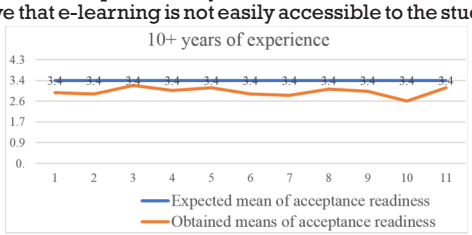

Figure 9 represents the trend in acceptance readiness in lecturers with more than 10 years of experience.

From table 4 and figure 9, it can be seen that lecturers with more than 10 years of experience are not interested in accepting e-learning and their belief towards the same in enhancing quality and productivity of teaching is extremely low. They believe that the implementation of e-learning is difficult and that it does not help in better student-teacher interaction.

TABLE 5

Table 5 represents the mean and standard deviation of items under belief towards training requirements

Items	n	Mean	Standard Deviation
1-10 years of experience			
I need training on e-learning	28	2.64	1.52
My students need training on e-learning	28	3.50	1.48
The personnel of your department need training	28	3.17	1.42
10+ years of experience			
I need training on e-learning	20	3.95	1.23
My students need training on e-learning	20	3.70	1.17
The personnel of your department need training	20	3.55	1.15

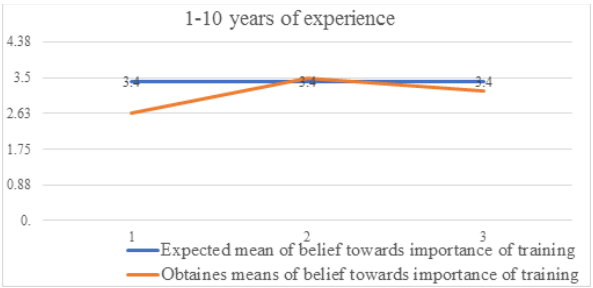

Figure 10 represents the trend in belief towards importance of training in lecturers with less than 10 years of experience.

From table 5 and figure 10, it can be seen that lecturers with less than 10 years of experience have reported higher need for training for students and their fellow staffs, but lesser training need for themselves.

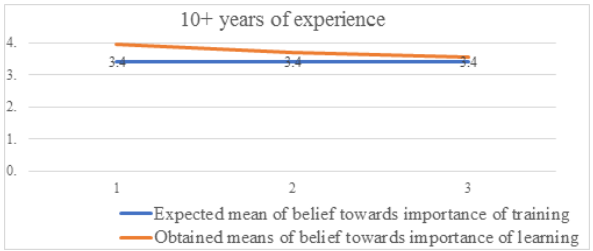

Figure 11 represents the trend in belief towards importance of training in lecturers with more than 10 years of experience.

From table 5 and figure 11, it can be seen that lecturers with more than 10 years of experience have reported higher need for training for themselves, their students as well as their fellow staffs. It can be noted that the need for training for themselves is higher in this group compared to the other.

Discussion of findings

E-learning readiness was measured as four facets - technological readiness, perceived self-confidence, acceptance readiness and belief towards requirements of training.

Lecturers with less than 10 years of experience:

This group is high in their technological readiness with the required computer skills. They have reported to use internet for information and also as a medium of communication with their colleagues and students. So internet functionality is not new to them. The higher levels of reported self confidence in using internet and e-learning tools is positive for learning. The lack of skills to use higher tools of e-learning like blackboard and other web learning tools is because of lack of opportunities. There is higher acceptance of e-learning as a group. They believe it will be an asset and will increase productivity and efficiency of teaching. Higher readiness is reported for learning, adapting and integrating e-learning. Their lack of skills to create e-learning content can be improved by educating them on the efficient usage of e-learning. Now with the situation demanding e-learning, their skills will help them to easily learn and adapt to e-learning. But, in the last facet lecturers have reported lesser need for training for themselves. This is contradicting to the above findings. Their basic computer and internet skills will not suffice all the additional skills that will be required for the efficient use of e-learning tools. This sample group should be educated on the requirements for efficient integration of e-learning in teaching and higher skills training needs to be done. They have reported a perspective where they feel, it will be difficult for students to use e-learning. This is again confirmed by their response, reporting higher need for training for their students.

Lecturers with more than 10 years of experience:

This group lack in their technological readiness with only basic computer skills. The internet is also used only as a source of information rather than communication. They are not aware of higher functions of internet. Education on the different uses of the web is a requirement for this group. Lesser perceived self-confidence lead them to believe that they are not ready to learn, to use or to create content and integrate e-learning to their teaching. They are lesser in their acceptance of e-learning. Even though, they report openness to learn they don't believe in the efficiency of e-learning. They have reported saying that e-learning will not add any value to their teaching or productivity. Though there is a high need for training requirements reported for themselves, the belief that e-learning might not make them credible might be a barrier towards their overall experience in learning and implementation of e-learning. Training must include education on the different e-learning tools, skill training, the efficiency and the importance of e-learning for this group. Only that will make them truly ready and will ensure successful implementation of e-learning.

CONCLUSIONS

1. Lecturers with less than 10 years of experience are high in technological readiness, perceived self-confidence, acceptance readiness, belief towards training requirements for their students and colleagues.
2. Lecturers with less than 10 years of experience are lesser in their belief towards training requirements for themselves.
3. Lecturers with more than 10 years of experience are less in technological readiness, perceived self-confidence, acceptance readiness.
4. Lecturers with more than 10 years of experience are higher in their belief towards training requirements for themselves, students and their colleagues.

Future directions

Having understood the different facets of e-learning readiness in lecturers, further exploration on these same facets can be done on students. That data can be used to compare the perspectives of lecturers and students to gain understanding on this whole idea of implementation of e-learning.

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