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RISK ASSOCIATED WITH ONLINE TEACHING – AN EXPLORATORY STUDY

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ABSTRACT

Business environment dictates the scope of work for companies particularly after the recent experiences of lock down of academic institutions. This is definitely new for at least in the Indian context and is true in many countries, who are trying to adjust with the new environment. This raises many challenges for the teacher and the taught. In the present research paper the authors would try and explore the various strategies to cope with the present situation. At the outset what strikes most of us is the risks involved in such a learning process. It is new for the teacher and the taught because of the absence of physical presence to clarify any doubts which cannot be done through the electronic medium in the present state of development and wide spread availability of Technology to back it up. Added to that will be the new resources constraints in terms of equipment which may be overcome in the short run. However the challenges of E-learning in a country like ours used to face to face learning with the presence of a competent teacher is are not to be scoffed at. Necessity is the mother of all inventions. So, our Educational systems will also be fine tuned in due course of time. How we manage the interval between the conversion is something we need to look at and face the challenges squarely. After all history is proof of our ability to adapt to new ways and means.

KEYWORDS: E-learning and associated risks, challenges and other issues involved, electronic media and Technological availability and suitability, Cultural changes needed for accommodation, adaptability and challenges thereof.

INTRODUCTION

We have witnessed tremendous changes in Marketing and Business environments in the last few years. The present advent, the challenge of remote learning, is dwarfing all those in comparison and mankind needs to face them and overcome such impediments to progress. The concept of learning in remote is a very important mile stone and mankind needs to understand the implications, current and futuristic, to progress further and not impeded by developments in the market. Adaptability has been a hall mark of humans and the present environment will pose a sever challenge to man's ability to adjust to such environmental changes. The only difference is that this has come a little abruptly though we are all aware that this is the futuristic path for us. But such environmental changes happen only abruptly.

As the digital revolution is making its progress, more and more work is virtualized. So, it is but natural that Technology should also come from a digital platform. The internet and the associated technologies are in the fore front of this revolution. It is very much discussed and desired in educational institutions like schools and colleges, whether attendance in class is a must and consequently we have observed that attendance in class room lectures is reducing. There are several reasons for this. To enumerate a few.

1. The students must be getting bored of the drudgery.
2. The teachers are not able to sustain the attention span of students.
3. In some research it has been found that the attention span is reducing.
4. Attraction of net based devices and the propaganda by media.
5. Students, some of them want no intervention.
6. The rising costs of personal tuitions and class room education.
7. General dilution and lack of interest in studies by students.
8. The class room is losing its luster in spite of the general perception that there is no alternative to face to face human interaction!

In the light of the above observations it is becoming clear that someday, sooner or later the present form of class room education will give way to newer and more appropriate forms of education. Then the question is what is the risk associated with such a system? Whenever an established method of delivery in any system is altered there is a noise. In the present case the noise is not without reason. The infrastructures built for schools and colleges at tremendous social cost will become redundant. We need to find alternate uses for the same. The investors in such infrastructure i.e. the government and private sector will need a change of heart!

Though this is difficult to come by, it will have to be understood and realized as a social need of the times and alternate use of the built up infrastructure has to be found as soon as possible. The urgency is because there seems to be no reversal of this trend. Our circumstances, due to virus or otherwise will dictate the course of future action for the welfare of all.

REVIEW OF LITERATURE

One of the most interesting and productive applications of Information and Communication Technology (ICT) is the emergence of E-Learning. Considering the importance and the necessity of E-Learning, in recent years, have seen a drastic change of learning methodologies in Higher Education. Undoubtedly, the three main entities of E-Learning system can be considered as Student, Teacher & Controlling Authority and there will be different levels, but a good E-Learning system needs total integrity among all entities in every level. Apart from integrity enforcement, security enforcement in the whole system is the other crucial way to organize it. As internet is the backbone of the entire system which is inherently insecure, during transaction of message in E-Learning system, hackers attack by utilizing different loopholes of technology. So different security measures, are required to be imposed on the system. In this paper, emphasis is given on different risks called e-risks and their remedies called e-remedies to build trust in the minds of all participants of E-Learning system.

To keep online learners engaged in studies and enrolled is a tough challenge. It is true that many learners who do well in classrooms are not ready for online learning. The class room students have developed a classroom learning skills over a period of time. They know how to interact with teachers and with other students, and they know how to take tests. Online, learners require a different set of skills to be successful. In the same way, trainers need a different kind of design and teaching perspective for the online world, in contrast to the classroom.

Until the arrival of online learning, it was considered enough to design primarily cognitive based solutions, driven by the ways people process information, and to depend on the instructor to give the personal touch during teaching. Something similar to that personal touch is even more important online because F2F contact is absent. Research suggests that E-Learning outcomes, including completion rate, improve when the instructional presentation is tailor made to suit the learner's aptitude, expectations, and personality. Good classroom

trainers instinctively pay attention to key human aspects, and adjust content, presentation, and other factors as needed to promote better learning outcome. Trainers and teachers receive important cues from learner emotions, and from expressions of learner intent. Learner persistence is something that has to be inspired and nurtured throughout the learning and teaching experience. Online, of course, the usual cues to learner emotions are not available to an instructor or to an e-Learning application.

E-Learning means doing learning activities electronically through Internet. The development of a variety of E-Learning systems will change the higher education system entirely, especially with respect to the quality of E-education services and support processes. In E-Learning system five significant participants are – Authors, Students, Managers, Teachers and System Developer (System Administrators). Hackers can change or modify the authenticated E-Learning documents, like learning materials, certificates, question papers, lecture materials, mark sheets etc. which are communicated from Manager to Students and from Authors to Students as and when required. As technology has changed the current scenario of education system drastically, learners (in broader sense "Students") interested in education, are not confined to the conventional school, college and university campuses only. The rapid pace of advances in e-learning technology can no doubt be attributed to this force, as institutions in UK are competing to gain more fee paying students without geographical boundaries and where institutions are trying their utmost to offer flexible education; so age, academics background, experiences are not a hindrance to pursue academic studies. The fast pace of embracing e-learning technology has ramifications on academic staff; it creates unwanted pressure and the results are hard to monitor whether e-learning technology is being used effectively (Clegg et al., 2003). Software and hardware companies involved in the creation of applications are always seeking advances to give them the edge over other software providers to gain access and establish their brand name. The previous Labor Government in 1997 using the globalization argument to justify and encourage UK higher education institution to adopt ICT for learning. Since then, the Government agenda remains the same to push forward with technology to enhance learning (Brown, 1999 and 2006; Mee, 2012; Allan et al., 2012; Jackson and Pearson, 2013).

The growth trend for online education has resulted in an increased availability of online courses and online degree programs offered by universities for-profit as well as traditional colleges and institutions. Theoretical literature and empirical research that focus on online

education and online learning (aka e-learning) address a variety of questions, including perceived quality (Udo et al. 2011), perceived risk (Mohamed et al. 2011), satisfaction and behavioral intentions to enroll in future online courses (Udo et al. 2011), the learning styles, expectations, and needs of online students (Mupinga et al. 2006), and student knowledge and confidence in a variety of study-related skills (Pryjmachuk et al. 2012) in a quest to find ways to increase the effectiveness of online education.

Whether faculty have technical skills, at the outset does not solely determine an effective online learning environment. Hixon (2012) reminded faculty that technical skills were only one prerequisite for teaching online (p. 103). Some argued that there were other skills more determinate of online success. "Instructors need a high degree of didactic expertise in the implementation of an online course. Yet, not all instructors are sufficiently skilled in the implementation of e-learning as indicated by students' assessment" (Paechter, Maier, & Macher, 2010, p. 228). Ragan (2011) agreed that successful online faculty must have multiple characteristics (p. 74-5). Instructors who taught well in the online format did so in a way that made technology invisible to the students (Riedinger & Rosenberg, 2006, p. 34).

About 30% of the University students in the US take online courses and the enrolment is growing. Design and delivery of online courses is gaining attention. Though progress strategies have been developed Assessment of student progress is an area of concern. There are ongoing studies to assess the progress of student learning. Therefore, this study sought to answer the following research questions: Some of the concerns are:

1) What methods of assessment are being used in this population of online courses?
2) How does the online environment facilitate or constrain particular assessment methods?

3.) What challenges do you face in creating and deploying assessments for your online courses?

4) What assessment practices have you used online that have been particularly effective?
5) How has your online teaching impacted your assessment practices in your F2F classes?

Modern technology has made it possible for Authors to provide access materials like books, journal papers, etc to a wide range of students, friends and acquaintances. The reason why many Authors refrain from providing is the fear that their compiled material might be passed on and processed without the their knowledge. As only registered Students can access those lecturer notes, assignments, etc, it is the Author's duty to protect against unauthorized use, modification and reuse of the data in different contexts related to E-Learning. Author's

lecture notes, class test papers, home assignments etc. may be modified / destroyed by hackers through the attacks. Therefore, it is in the Author's interest to ensure that the users receive the content unaltered and that the users can check the integrity of the text. Regular data backups and a plan of action in case of a breakdown of certain components (e.g. hard disk, network connections) are essential elements of a risk analysis. Financial interests also frequently play an important role in all such cases.

All risks of E-Learning are not to be restricted to the technical system. It is necessary to cover the entire methods of teaching, examination, evaluation and grading. Teaching methodologies change from one Teacher to another but there will be common risks in events such as delivering lecture, sending notes and assignments, accepting and marking answer sheets, preparing and distributing mark sheets. Discussions are an essential component of teaching any course. One form of discussion can be through the online forum. An advantage of online forum discussions over oral discussions is that all written documents are stored electronically on a server, but the digital storage of contributions to a discussion constitutes a great risk for the privacy of Students as well as Teachers. Though in any teaching system maximum interaction can help Students as well as the Teachers to make their understanding clear. Only robust security mechanism can lead to this kind of interaction in the long run.

Teachers are not always available to help the Students so they need to be disciplined to work independently without the Teacher’s assistance. Students also need to have good writing and communication skills. When Teachers and other Students aren’t meeting face-to-face it is possible to misinterpret what was meant. As a feedback mechanism from Students will always enriches a Teacher, there is risk from Students side to send the same feedback to the management of the E-Learning institute. At last all learners must be aware of phishing where attacker sets up fake web sites which look like a real E-Learning website so well that human eye will not able to distinguish between real and attacker site. Here learners are prompted to enter some confidential information

The major threats of E-Learning are as follows.

1. Confidentiality violation : An unauthorized party gaining access of the assets present in E-Learning system.
2. Integrity Violation: An unauthorized party accessing and tempering with an asset used in E-Learning system.

3. Denial of Service: Prevention of legitimate access rights by disrupting traffic during the transaction among the users of E-Learning system.
4. Illegitimate use: Exploitation of privileges by legitimate users. e. Malicious program : Lines of code to damage the other programs.
5. Repudiation: Persons denial of participation in any transaction of documents.
6. Masquerade: A way of behaving that hides the truth by the hackers.
7. Traffic analysis: Leakage of information by abusing communication channel.
8. Brute-force attack: An attempt with all possible combinations to uncover the correct one.

As a result of above threats and risks may occur during transaction of textual and non-textual messages among different participants of E-Learning system.

A firewall is a combination of hardware and software security system established to prevent unauthorized access to a corporate network from outside the organization. Technically, a firewall is a specialized version of a router. Apart from the basic routing functions and rules, a router can be configured to perform the firewall functionality, with the help of additional software resources. Main principle based on the rule is that all traffic from inside to outside and vice versa must pass through the firewall. To achieve this, all access to the local area network must first be physically blocked, and access only via the firewall should be permitted. Only the traffic Authorized as per the local security policy should be allowed to pass through. The firewall itself must be strong enough, so as to render attacks on it useless. In practical implementations, a firewall is usually a combination of packet filters and application (or circuit) gateways. The system is illustrated in the Fig 1.

At their most basic, **firewalls work** like a filter between your computer/network and the Internet. You can program what you want to get out and what you want to get in. Everything else is not allowed. There are several different methods firewalls use to filter out information, and some are used in combination. These methods work at different layers of a network, which determines how specific the filtering options can be. **Firewalls** can be used in a number of ways to add security to your home or business.

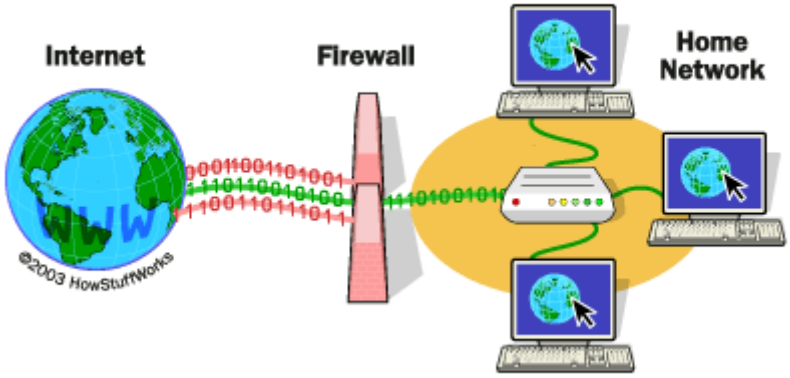

Figure 1: Illustration of Firewall.

The above, presented the risks that may occur by different participants of E-Learning and its counter measure tools/ techniques to minimize those risks. Though in E-Learning only the Student can unlock his private data, rest all challenges remain on how to implement and maintain higher levels of privacy while setting up the learning process. Always the IT department strives to guarantee the availability of services by using redundant hardware like server, routers etc. Another important part that minimizes the risks is logs. Logs are distributed by virtue of the fact that they may be stored by different applications operating on different computers. Details of the transaction including the time of its occurrence would be "logged" and the resulting record will be secured using cryptographic techniques. We can further improve the level of security in E-Learning by applying different other techniques to minimize the risk though no system will be absolutely secured. Readers must be able to rely on the correctness of the content otherwise by reading incorrect or non-relevant content; readers will lose the trust on the texts or will refuse to read for the next time onwards. In future, the concept of m-learning will come in new electronically learning features, however new risks will also occur parallel with M-Learning.

Current trends and practices offer support to faculty, but also have the potential of rendering instructors passive bystanders in their own courses. The online learning space is becoming more competitive and expensive. To many, this seems counter-intuitive. After all, online learning should be opening up new markets and it should be cheaper. Universities can decrease their physical footprint! The reality is that universities will either invest internally in multifaceted teams in support of strategic program development or pay outsiders to design, build and market online programs. Potentially, instructors could be supported or sidelined.

We will either invest in instructors populating adaptive systems or purchase off-the-shelf solutions that may not, in the end, be well adapted to our learners. We will either support rich curriculum development or populate online courses with publisher materials and, in the end, pass on the cost to students. We will either use OER (Open Educational Resources) in new ways of engaging students or purchase turn-key solutions built entirely on OER. Faculty members have the greatest stake in the future direction of the university and the impact of these key trends. Their own autonomy and academic freedom is at stake. Faculty need to be aware of the issues and be present wherever decisions that impact curriculum development are made.

OBJECTIVES & RESEARCH METHODOLOGY

We have created a frame work of a few questions first in the mind so as to determine what are the requirements, as required by the situations and how to find adequate and relevant responses. Though some literature is available on the subject, it needs to be classified and collated for suitability for the present research. Since the subject is somewhat new to a segment of the population, we needed to reinforce our conclusions based on a physical survey of the population specifically identified, who will respond appropriately to the questions we have regarding the research. Since the Objectives were broad in nature, we needed to focus on key issues to get a response to the questions through a well designed Questionnaire. In order to achieve focus following specific Objectives were identified and selected:

OBJECTIVES

1. To review briefly the present status of teaching in Educational Institutions and risk associated with online classes as perceived by teachers.
2. To assess the perceived risk of online teaching across the demographic characteristics of respondents
3. To classify the respondents according to the nature of perceived risk of online teaching

Hypothesis

Hypothesis 1: There is no significance difference in the perceived risk of online classes across the teachers having different ability in handling online classes.

Hypothesis 2: Perceived risk associated with online teaching do not differs significantly across the demographic characteristics of respondents

Present research work is descriptive in nature. In order to find some more realistic answers to the above research questions, it was decided to conduct an additional field survey so that the results could be extrapolated to arrive at proper Conclusions. The Answers to the above research problems may appear to be simple but it is not so. As a prelude to identifying research methodology, a review of current literature available was made. Though a large volume of information is available, it was not able to provide a satisfactory answer to the inquisitive mind of the researcher in depth and in a convincing manner. So, it was decided to do a sample survey among the academic institutions and teachers to identify the problems associated with remote learning methods as opposed to face to face class room teaching and learning. The survey brought out a variety of feedback which needed sorting, collating and then arrive at suitable conclusions. This has been done and the results have been tabulated the data analysis portion. We have tried to arrive at some Conclusions from the data analyzed and this can be seen in the following pages.

DATA ANALYSIS & INFERENCE

Demographic characteristics of respondents as presented in the table 1 indicates that sample is dominated by the respondents in the age group of 26-34 years as 42.1% respondents falls in to this age group. Another 22.9% respondents are in he age group up to 25 years. 21.6% respondents are in the age group of 36-45 years. 11.7 % employee are in the age group of 46-55 years and remaining 1.3% respondents falls into age above 55 years. Sample is dominated by male categories (65.4%) and married (51.5%) respondents. Most of the respondents are well qualified as 34.6 % and 10% respondents are post graduate trained teacher and having doctoral qualification to their credit.

Table 1: Demographic Profile of Respondents (N = 259).

Demographic Characteristics		Frequency	Percentage	
Age	Up to 25 years	53	22.9	
	26 to 35 years	98	42.4	
	36 to 45 years	50	21.6	
	46 to 55 years	27	11.7	
	More than 55 Years	3	1.3	
Gender	Male	151	65.4	
	Female	80	34.6	
Marital Status	Married	119	51.5	
	Unmarried	112	48.5	
Educational Level	Trained Graduate	128	55.4	
	Trained Post graduate	80	34.6	
	Doctoral Degree	23	10.0	

Success of online classes depends upon some skill set and competency like software operation, video editing, preparing slides working on graphics knowledge of spreadsheet function and so on. On the basis of review of literature and formal discussion with teachers, some variable were identified and respondents were asked to rate the various Individual competitiveness attribute on a scale of one to five as per their preferences. Descriptive statistics (mean and SD) were calculated with the help of SPSS soft ware and it was observed that attributes like "Using e-mail for communication with others" has scored highest mean of 4.1948 with SD=1.03888. it was followed by attributes like "Word processing program for producing text" with mean of 4.0476 and SD=1.08843. it is significant to note that Competency in downloading and installing software in computer has scored lowest mean of 2.8874 and SD=1.06541. it was followed by "Editing a questionnaire online" with mean=2.9264 and SD=1.27816. analysis signifies that certain technical skil set like video editing, online editing, creation of folder and its organization are the important hindrance in handling online classes. Reliability statistics was calculated with the help of SPSS software and found in the0.702 indicating that construct are the reliable one and can be taken for the further statistics analysis.(Table2)

Table 2: Individual competitiveness with various Hardware and Software Services: A descriptive Statistics.

Attributes related to various Hardware and Software Services	N	Reliability (α)	Mean	Std. Deviation
Word processing program for producing text	231	0.702	4.0476	1.08843
Using e-mail for communication with others	231		4.1948	1.03888
Editing digital photos movies, and other graphics	231		3.4589	.97213
Editing online test containing internet link and images	231		3.3203	1.15023
Creating a database online	231		3.4329	1.38424
Editing a questionnaire online	231		2.9264	1.27816
Mailing file to student, teachers or others	231		3.1645	1.17538
Creation of file and folders and its organization	231		2.9913	1.28872
Using spread sheet and its application of plating graphs	231		3.4805	1.42594
Making presentation with power point animation function	231		3.2857	1.55639
Preparing presentation with video or audio clips	231		3.0433	1.55978
Participating in the discussion forum on the internet	231		3.6320	1.26787
Creating blogs or websites	231		3.5628	.92980
Participating in social networks sites	231		3.5801	.97862
Competency in downloading and installing software in computer	231		2.8874	1.06541
Valid N (listwise)	231			

Descriptive Statistics

Data summarized in Table 2 indicates the descriptive statistics related to perceived psychological risk associated with online teaching classes as disclosed by teachers under investigation. It is observed that Personal Risk associated with online teaching has been rated highest with mean=3.7208 and SD=.59295, followed by Psychological Risk with mean-3.5469 and SD=.94413. Safety Risk associated with online teaching has scored lowest (m=2.8290 SD=.89684). Attributes like "Lacking of material or content used for teaching restrict me to go online" has been ranked first with mean = 3.9437 and SD=.66026; it was followed by the attribute like Lack of interest and unclear benefit de-motivate teachers to go online with mean=3.7619 and SD=1.07926. Attribute related to risk associated with online teaching like "There is high chance of security threat and academic piracy" with mean=2.7013 and SD=1.05581 has been ranked lowest followed by attributes like "There is chance of Exploitation of personal information Cyber-bullying" with mean =2.9567 and SD=.93150 respectively. Reliability statistics was calculated with the help of SPSS software and found in the range of 0.612 to 0.768 indicating that construct are the reliable one and can be taken for the further statistics analysis Ref: (Table3)

Table 3: Perceived Risk Associated with Online Teaching.

A Descriptive Statistics

Attribute related to different Perceived risk	N	Reliability (α)	Mean	Std. Deviation
Psychological Risk		**0.716**	**3.5469**	**.94413**
The style of the online delivery may not fit with my image.	231		3.5108	1.13774
I may feel tense delivering on line classes to students.	231		3.7186	1.22067
Online teaching devaluates the class culture and ethical values	231		3.4113	1.18676
Emotional Risk		**0.612**	**3.2367**	**.83740**
Online teaching enhances the emotional distance between students and teachers	231		3.5584	1.09338
Teaching the students how to act safely online is difficult.	231		3.0130	1.16649
Teaching the students how to act ethically online is challenging.	231		3.1385	1.21506
Technological Rosk		**0.692**	**3.4275**	**.83691**
Technology application put a risk of academic integrity	231		3.5195	1.16033
Continuous technological upgradation and change in technological plateform put a great challenge to me in coping with	231		3.3896	1.22463
Lack of adequate skills and technical support for teachers make the online teaching difficult	231		3.3160	1.13431
Lack of internet connected computer and poor internet speed make the online class challenging	231		3.4848	1.12230
Infrastructural support		**0.697**	**3.3405**	**.94201**

The online learning space is becoming more competitive and expensive.	231		3.0476	1.23443
online learning will be opening up new and cheaper markets	231		3.4589	1.14846
Using online teaching, Universities can decrease their physical footprint!	231		3.5152	1.19727
Personal Risk		**0.618**	**3.7208**	**.59295**
There is chance of instructors could be supported or sidelined	231		3.4805	.89361
There is high chance of outsourcing most job of teachers like curriculum design and development and its marketing	231		3.6970	.78792
Lacking of material or content used for teaching restrict me to go online	231		3.9437	.66026
Lack of interest and unclear benefit de-motivate teachers to go online	231		3.7619	1.07926
Safety Risk		**0.768**	**2.8290**	**.89684**
There is high chance of security threat and academic piracy	231		2.7013	1.05581
There is chance of Exploitation of personal information Cyber-bullying	231		2.9567	.93150
Valid N (list wise)	231			

Handling of online teaching classes which are growing continuously and has become a critical factor of imparting education on account of the recent crisis. Respondents were asked to rate their ability in handling online classes. Information presented in Table 3 indicates that 45% respondents indicated high ability in taking online classes. On the other hand 26.4% indicated medium ability and 28 % respondents indicated lower ability in handling online classes (Table 4).

Table 4: Ability of handling online Teaching Classes.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	104	45.0	45.0	45.0
	Medium	61	26.4	26.4	71.4
	Low	66	28.6	28.6	100.0
	Total	231	100.0	100.0	

Further one way ANOVA analysis was carried out to test whether mean of perceived risk associated with online teaching differs significantly across teacher having different ability in handling online classes assuming null hypothesis as mean of different risks not differing significantly across the respondent having different level of ability of handling their teaching practices online. It is observed that calculated value of F is less the table value (f=2.62, ay v1=2,v2=228 p=.05) and hence null hypothesis is accepted and it is concluded that there is no significant difference in the mean of different risk associated with online teaching across the

respondent having different level of ability of handling your teaching practices online. (Table 5)

Table 5: One Way ANOVA of Mean of Various Perceived Risk across the respondent having different level of ability of handling your teaching practices online.

Factors		Sum of Squares	df	Mean Square	F	Sig.
Psychological Risk	Between Groups	1.333	2	.666	.746	.475
	Within Groups	203.687	228	.893		
	Total	205.020	230			
Emotional Risk	Between Groups	.854	2	.427	.607	.546
	Within Groups	160.431	228	.704		
	Total	161.285	230			
Technological Risk	Between Groups	1.668	2	.834	1.193	.305
	Within Groups	159.430	228	.699		
	Total	161.098	230			
Infrastructural support	Between Groups	.227	2	.113	.127	.881
	Within Groups	203.873	228	.894		
	Total	204.099	230			
Personal Risk	Between Groups	.137	2	.069	.194	.824
	Within Groups	80.728	228	.354		
	Total	80.865	230			
Safety Risk	Between Groups	.316	2	.158	.195	.823
	Within Groups	184.680	228	.810		
	Total	184.996	230			

Cluster Analysis

Cluster analysis is a form of multivariate technique whose primary purpose to group objects based on the characteristics, they posses. The cluster analysis makes grouping on the basis of distance (proximity) (Hair, et al. 2010). The K-means algorithm gives the simple or flat condition, because it just gives a single set of clusters, with no particular organization or structure within them. (Pham, et al. 2004). Cluster Analysis has been used in marketing for various purposes. Segmentation of consumers in cluster analysis is used on the basis of benefits sought from the purchase of the product. It can be used to identify homogeneous groups of buyers. First cluster is composed of responses of 39 respondents who feels risk of Infrastructural support with mean of 3.85 followed by Personal Risk with mean =3.77 and Emotional Risk with mean =3.64. Second cluster is of 29 respondents who indicated Emotional Risk with mean=4.29 followed by Technological Risk(m=4.28) and Psychological Risk(m=3.92) Third cluster is of 46 respondents who indicated main risk as Personal Risk with mean=3.66 followed by Psychological Risk(m=3.60) and Safety Risk(m=3.40. fourth

cluster is of 33.respondents where Personal Risk with mean=3.71 has scored highest followed by Psychological Risk(m=3.67) and Technological Risk(m=3.15) fifth cluster is of 22. Respondent under which Personal Risk with mean=3.81 has been rated first followed by Psychological Risk (m=3.59) and Safety Risk(m=3.20) sixth cluster is of 62 respondents who indicated Psychological Risk(mean=4.14) at the top followed by Infrastructural support(m=4.07) and Technological Risk(M=3.78) (Table6 and Table7).

Table 6: Number of Cases in each Cluster.

Cluster	1	39.000
	2	29.000
	3	46.000
	4	33.000
	5	22.000
	6	62.000
Valid		231.000
Missing		.000

Tabe 7: Final Cluster Centers.

	Cluster					
	1	**2**	**3**	**4**	**5**	**6**
Psychological Risk	2.14	3.92	3.60	3.67	3.59	4.14
Emotional Risk	3.64	4.29	2.65	2.80	2.24	3.51
Technological Risk	3.63	4.28	3.23	3.15	1.77	3.78
Infrastructural support	3.85	3.63	2.66	3.14	1.73	4.07
Personal Risk	3.77	3.90	3.66	3.71	3.81	3.63
Safety Risk	2.79	2.16	3.40	1.59	3.20	3.27

Testing of Hypothesis

Multiple ANOVA (F Value) was calculated using SPSS software to test whether the vector of means of the perceived online teaching risk (Psychological Risk, Emotional Risk, Technological Risk, Infrastructural Support risk, Personal Risk and Safety Risk are from the same demographic groups or not assuming null hypothesis the mean of perceived online teaching risk of teacher do not differs significantly across the demographic factors of respondents. The Pillai's trace is the most preferred approach for the F value as this is the least sensitive to the violation of the assumption of the covariance of matrices. In this case for the first independent variable, the Pillai's Trace value is 2.056 with F value of 1.099. This is insignificant at 5% level as the p value is. 121(>.05). So we accept the null hypothesis that the perceived online teaching risk differs significantly across the demographic characteristics of respondents. (Table 8) This is concluded on the basis of the MANOVA derived by combined dependent variable.

Table 8: Multivariate Tests.[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.987	1907.074[b]	6.000	151.000	.000
	Wilks' Lambda	.013	1907.074[b]	6.000	151.000	.000
	Hotelling's Trace	75.778	1907.074[b]	6.000	151.000	.000
	Roy's Largest Root	75.778	1907.074[b]	6.000	151.000	.000
age * gender * marital status * Education * Professional experience	Pillai's Trace	2.056	1.099	444.000	936.000	.121
	Wilks' Lambda	.070	1.154	444.000	912.784	.038
	Hotelling's Trace	3.641	1.224	444.000	896.000	.006
	Roy's Largest Root	1.526	3.216[c]	74.000	156.000	.000
a. Design: Intercept + age * gender * marital status * Education * Professional experience						
b. Exact statistic c. The statistic is an upper bound on F that yields a lower bound on the significance level.						

Impact of independent variable on the dependent variable: Since the Pillai's trace does not show significant results. It can be said that the impact of (first independent variable) on super dependent variable (combination of all the dependent variables i.e. scores of Psychological Risk, Emotional Risk, Technological Risk, Infrastructural Support risk, Personal Risk and Safety Risk) is not significant. For the second independent value also the Pillai's trace is not significant. So the impact of (second independent variable on dependent variable (combination of all dependent variable) is not significant. (Table 9)

Tabe 9: Tests of Between-Subjects Effects.

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Psychological Risk	66.568[a]	74	.900	1.014	.464
	Emotional Risk	44.879[b]	74	.606	.813	.841
	Technological Risk	35.880[c]	74	.485	.604	.992
	Infrastructural Support	70.261[d]	74	.949	1.107	.297
	Personal Risk	19.465[e]	74	.263	.668	.974
	Safety Risk	109.307[f]	74	1.477	3.044	.000
Intercept	Psychological Risk	1594.203	1	1594.203	1796.256	.000
	Emotional Risk	1274.818	1	1274.818	1708.430	.000
	Technological Risk	1409.270	1	1409.270	1755.703	.000
	Infrastructural Support	1363.303	1	1363.303	1589.045	.000
	Personal Risk	1729.741	1	1729.741	4394.754	.000
	Safety Risk	926.056	1	926.056	1908.669	.000
age * gender * marital status * Education * Professional	Psychological Risk	66.568	74	.900	1.014	.464
	Emotional Risk	44.879	74	.606	.813	.841
	Technological Risk	35.880	74	.485	.604	.992
	Infrastructural Support	70.261	74	.949	1.107	.297
	Personal Risk	19.465	74	.263	.668	.974

experience	Safety Risk	109.307	74	1.477	3.044	.000
Error	Psychological Risk	138.452	156	.888		
	Emotional Risk	116.406	156	.746		
	Technological Risk	125.218	156	.803		
	Infrastructural Support	133.838	156	.858		
	Personal Risk	61.400	156	.394		
	Safety Risk	75.689	156	.485		
Total	Psychological Risk	3111.111	231			
	Emotional Risk	2581.222	231			
	Technological Risk	2874.813	231			
	Infrastructural Support	2781.889	231			
	Personal Risk	3278.875	231			
	Safety Risk	2033.750	231			
Corrected Total	Psychological Risk	205.020	230			
	Emotional Risk	161.285	230			
	Technological Risk	161.098	230			
	Infrastructural Support	204.099	230			
	Personal Risk	80.865	230			
	Safety Risk	184.996	230			

(a. R Squared =.325 (Adjusted R Squared =.004), b. R Squared =.278 (Adjusted R Squared = -.064),c. R Squared =.223 (Adjusted R Squared = -.146),d. R Squared =.344 (Adjusted R Squared =.033),e. R Squared =.241 (Adjusted R Squared = -.119), f. R Squared =.591 (Adjusted R Squared =.397)

DISCUSSION AND CONCLUSIONS

The literature review has identified the risk associated with online teaching from the academics' perspective. There are many areas within this perspective that give cause for concern; they have been grouped as challenges facing higher education institutions. The six broad risk categories were identified as.

Psychological Risk,

Emotional Risk,

Technological Risk,

Infrastructural Support,

Personal Risk and

Safety Risk.

Descriptive statistics indicated that Personal Risk associated with online teaching mean=3.7208 and SD=.59295 followed by Psychological Risk with mean-3.5469 and SD=.94413.(Table3). These risks are critical in understanding for any institution wishing for a successful e-learning program. The study is in conformance of previous study of

Nurul Islam, Martin Beer, Frances Slack (2015) where author emphasized that Instructors need to have a good grip on technology and encouraging attitude towards e-learning for a positive learning outcome.

Academics should not be there confoined to technical support for students, rather they need to be trained on the technology so thoughtful posts, videos and tutorials are used effectively.

One way ANOVA test confirms the similarity of the perceived risk among the teachers of all demographic characteristics even no significance different was noted about perceived risk across the teacher ability in handling online classes and If the e-learning system is not stable, prone to downtime, slow, persistent bugs and technical faults can lead to frustration and annoyance amongst academics.

Educational Institutions have to bear in mind these challenges and have to offer high standard of support, guidance and clear policy for a successful e-learning outcome.

FURTHER RESEARCH

According to the literature, more work is needed on how university policy, government policy, and software vendors' marketing statements and e-learning specifications form the perceptions of academics and how institution management can meet these perceptions (Macharia & Pelsers, 2012). Cheon et.al, (2012) spoke about the literature gap in factors influencing mobile learning acceptance in higher education institutions, there is no question that this also extends to academics, what factors do academics acceptance of mobile learning influence? What impact does m-learning have on university graduates? What isthe technological and training criteria in mobile learning for academics?

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