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### RESEARCH ARTICLE

#### USE OF E-LEARNING TOOLS ON HIGHER EDUCATION INSTITUTIONS

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#### Abstract

In the last two decades, technology has evolved at a great pace and has influenced almost all spheres of life and education is no exception to it. Nowadays, most of the educational institutions are using various tools and equipments to impart education to the students. This paper has tried to explore the impact of e-education tools on the students in higher educational institutions. The sample consists of students enrolled in higher educational institutions. Both quantitative and qualitative methods have been adopted for data collection including questionnaires, semi-structured & open-ended interviews. Use of computer and internet was found to be one of the most important e-learning tools. The findings are expected to assist the higher educational institutions in framing their policies to impart quality education to the students.

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#### Introduction:-

##### Defining e-education system:

It is imperative to start by trying to understand and establish that exactly what we mean by an e-education system. Interpretations are different but majority of researches claim that education system would refer to:

1. Learning materials made available to students in electronic form.
2. Online teaching, guidance and support provided to students
3. On-line administrative services, e.g. billing, enrollment, information and advice provided to the students.

The most powerful indicator of advancement and evolution in our society is the outburst of technology. Increasing use of computers in homes, schools and offices provide strong evidences in support of the above statement. Computers provide an easy and rapid means to access transmit and interpret a huge amount of information across the world and simultaneously it is drastically changing the way people work and live. The use of information technology has been generally accepted in industrialized societies and this has also placed great responsibility on families and schools to help children become more knowledgeable and efficient at using this technology for their advancement. ICT in education has evolved over the span of past thirty years and it has been observed that focus has now shifted from the use of individual data processors placed in computer labs to access of the Web and making use of complicated integrated Webservices for teaching and learning (White, 2005). In the process of this evolution, e-learning has been summarized as:

“... an ideal learning environment using modern means of information technology, through the effective integration of information technology and the curriculum to achieve a new learning style which can fully reflect the main role of

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students to thoroughly reform the traditional teaching structure and the essence of education, to train large numbers of high quality personnel.” (Ma, Wang & Liang, 2008, p. 54).

Dewey (1938) also referred to as the “advocate” of education suggests that learning should come through various experiences and not through drills and practice. Learning is more than merely acquisition of information and skills. He argued that higher-order learning skills are the demands of the 21st century and they are required by individuals for lifelong learning. High order learning skills need to be developed for problem solving, critical analysis, and creativity.

#### **Determinants of e-Learning Success:**

Attwell (2006) discovered a helpful and comprehensive framework for not only evaluating but also researching the success of projects and programs related to e-learning. Various e-learning projects were evaluated and then the following five significant clusters of variables have appeared: individual learner variables, technology variables, environmental variables, pedagogic variables and contextual variables. Selim (2007) further agreed by identifying instructor characteristics, technological support and student characteristics as major determinants of success of e-learning projects. Spooner et al. (1999) had earlier laid stress on student satisfaction, convenience, perceptions of effectiveness and comfort. Later, Attwell (2006) confirmed that majority of teachers or educators regarded satisfaction of learners as the most important factor affecting e learning success. Three general success measures for online delivery were proposed by Phipps & Merisotis (1999), namely, attitudes of students towards learning, outcome of students’ learning like scores and overall satisfaction level of students with respect to e learning process. According to Masrom (2007) use of technology would be perceived as useful only if the user believed that it would certainly improve his or her performance, while it is also important that the use of technology should be effortless for the user to provide him comfort and confidence. Both these aspects have been considered different factors affecting the user’s attitude towards use of technology. There have been several empirical studies that have earlier attempted to measure both student learning and satisfaction, which has been considered the most suitable method to measure e-learning success (Song & Bosselman, 2011).

#### **Literature Review:-**

A large number of arguments are being presented continuously for the transformation of schooling using information and communications technology (ICT). Many argue that ICT possess the capacity to revolutionize the school teaching by moving away from shallow content coverage to the acquisition of higher-order skills like problem setting, organizing, questioning, evaluating and ultimately generating knowledge (Bonk & Zhang, 2008; Jonassen, Howland & Marra, 2007). Others express that it can also assist teachers in making impactful presentations with the help of informative multimedia and facilitate easy learning in students with different needs. These arguments are supported by various studies. According to Becta (2007), in UK, a project named “ICT Test Bed Project” was conducted and evaluated by the Department for Education and Skills' in the areas pertaining to relative social and economic disadvantage and the results revealed that with the vast application of ICT, collaboration and interaction increased between teachers and students, not only this but there were more choices in the curriculum and diversity in ways of learning which ultimately lead to improvements in the national test scores of students, their attendance and behavior. Similarly, Kozma (2003) conducted an international study in which he examined 174 cases in 28 countries where ICT had been applied in school teaching and it was concluded that the technology could undoubtedly promote collaboration among teachers, innovative teaching and learning and productive activities among students. Unfortunately, it was also revealed in this study that majority of schools were still far from the advantages of ICT as technology was not used much in these schools. In England, government-led ICT initiatives were assessed in the primary and secondary schools, it was discovered that ICT had acted as a catalyst for major improvement in a very few schools (Ofsted, 2002). It was further confirmed by Robertson (2002; 2003) that ICT was only a marginal force in the education system of children belonging to the age group of 5–12 years in the countries like USA, Scotland, and England. He stated that the rational and modern methodologies of ICT proposed by researchers fail to beat the complicated cultural and psychological characteristics of schools. Baskin and Williams (2006) revealed that though integration of the technology in schools has begun, the issue of use of ICT-based pedagogy still remained unaddressed. In Turkey, it was found by Özdemir and Kılıç (2007) and Akbaba-Altun (2006) that despite tremendous efforts to bring revolutionary changes by making use of ICT, no significant educational change or improvement in learning has been observed in Phase 1 of the US\$11.3 billion Basic Education Programme, aided by World Bank in Turkey. Ironically, ICT was supposed to play an integral role in this programme. Trucano (2007) submitted a paper to OECD in which it was revealed that ICT has had a very little positive impact on learning of students despite the fact that interest in the use of ICT has increased in

developing countries. As per Clark and Feldon (2005), the research findings did not support the motivational and pedagogical superiority of learning through multimedia.

The impact of ICT on learning is still debatable but there is a consensus on the fact that there is much need for more extensive and enriching training of teachers in ICT-based pedagogy. According to Garrison (2000), theoretical frameworks and models are extremely important to the implication and development of areas of practice. Sound and strong theories create conceptual order, they also provide simpler ways of explaining complicated phenomena and throw light on areas where further theoretical or empirical explanation are needed. Garrison also argued on how teachers are challenged to make sense of continuously coming new terminology, such as open, virtual and distance education. As observed by Baggaley (2007), using terms like 'e-learning' diminishes the importance and role of the educator who is ultimately regarded as accountable for the process of learning. It has been suggested by various authors like Vrasidas and Glass (2002), Nichols (2003), Anderson and Elloumi (2004), and Dabbagh (2005) that new theories of e-education are needed in accordance with the amendments in learning orientations and advent of digital technologies.

### Research Methodology:-

For the present study, data was collected through survey with the help of self-administered questionnaire. Initially, pilot study was conducted to check the reliability of questionnaire and final version of questionnaire is being created. Final questionnaire consists of two parts- Part A and Part B. Part A consists of questions related to demographic profile such as age, gender etc. Part B consists of questions related to e-educational tools and equipments. Five-pointlikert scale was used for getting responses. For the study, 150 questionnaires were sent to the students of higher education institutions located in Lucknow and after waiting for one month, total 100 responses were collected (Response rate 63 percent). Data was analyzed through SPSS which included Cronbach' s alpha test, descriptive analysis and Mann-Whitney test.

### Data Analysis and Research Findings:

Reliability of the questionnaire was checked using Cronbach alpha test. It was found to be 0.852 which proves the questionnaire reliable for the further use (Table 1).

**Table 1:-** Reliability Statistics.

Cronbach's Alpha	N of Items
.852	10

Table 2 depicts the mean score and standard deviation of the various dimensions of e-educational tools and equipments. **Use of computer and internet was found to be one of the most important e-learning tools, followed by use of presentation software such as ppt.**

**Table 2:-** Descriptive Statistics.

	N	Mean	Std. Deviation
COMPUTER	100	4.2200	1.15102
INTERNET	100	4.5200	.99980
EMAILS	100	3.7100	1.17461
PPT	100	3.8800	1.08507
CHATROOMS	100	3.3300	1.19810
ONLINE ASSIGNMENT	100	3.7600	1.12025
ONLINE EXAMS	100	3.7200	1.19832
QUALITY OF TECHNOLOGY	100	3.6300	1.12506
AVAILABILITY OF E-LEARNING TOOLS	100	3.6400	1.16792
PODCASTS OR WEBCASTS	100	3.6300	1.09779

In order to know that which group of students is more affected by the e-learning tools, Mann-Whitney test was conducted. The results of the test are represented in table 3.

**Table 3:-** Ranks.

GENDER	N	Mean Rank	Sum of Ranks
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COMPUTER	Male	43	45.63	1962.00
	Female	57	54.18	3088.00
	Total	100		
INTERNET	Male	43	46.07	1981.00
	Female	57	53.84	3069.00
	Total	100		
EMAILS	Male	43	40.22	1729.50
	Female	57	58.25	3320.50
	Total	100		
PPT	Male	43	47.08	2024.50
	Female	57	53.08	3025.50
	Total	100		
CHATROOMS	Male	43	50.58	2175.00
	Female	57	50.44	2875.00
	Total	100		
ONLINE ASSIGNMENT	Male	43	43.72	1880.00
	Female	57	55.61	3170.00
	Total	100		
ONLINE EXAMS	Male	43	46.16	1985.00
	Female	57	53.77	3065.00
	Total	100		
QUALITY OF TECHNOLOGY	Male	43	54.15	2328.50
	Female	57	47.75	2721.50
	Total	100		
AVAILABILITY OF E-LEARNING TOOLS	Male	43	44.24	1902.50
	Female	57	55.22	3147.50
	Total	100		
PODCASTS OR WEBCASTS	Male	43	53.12	2284.00
	Female	57	48.53	2766.00
	Total	100		

From the table, it was found that there is a significant difference in the level of satisfaction of male and female students for the use of e-mails and online assignments with the p-values of 0.001 and 0.034 respectively. **Female are more satisfied with the use of e-mails as compared to male students (mean rank of male=40.22 and mean rank of female=58.25).** In case of online assignments, females are more satisfied as compare to male students (mean rank of male=43.72 and mean rank of female=55.61). For the rest of the e-learning tools, p-values are more than 0.05 so there are no significant differences in the level of satisfaction between male and female students.

### Conclusion:-

Many authors argue that technological changes usually force them to revisit their concepts and theoretical foundations of e-education. It has also been stated that more research is required to be conducted to find out the presumed benefits of almost all instructional media and related pedagogies. In this paper, use of computer and internet has been found the most significant tool in the process on e-learning by the respondents. It has also been revealed that female respondents are more satisfied than male respondents as far as use of emails and online assignments are concerned. The researchers have put forth their research findings in the present paper hoping that this would help with the conceptualization and further research of e-education process. It has been observed that many teachers are merely concerned about educational change that is in congruence with the prevailing practices and their time commitments, which has led to misinterpretation of e-education at various places so this needs to be taken care of.

Moreover, it is also noteworthy that the findings presented in this study provide meaningful insights to the body of work related to e-learning in higher educational institutions.

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