ATTITUDE OF PROSPECTIVE TEACHER EDUCATORS TOWARDS INCORPORATION OF ELECTRONIC LEARNING TECHNOLOGY IN TEACHER EDUCATION INSTITUTIONS: AN EMPIRICAL APPROACH

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Abstract

Education system must respond to the changing needs of students and their teachers, just as business has reacted to its changing needs implementing employee training. Technological innovations are increasing the demand for altering the mode of transaction in the teaching and learning process and that in turn develop a significant impact on technology use expectations. It is the need of the hour that emerging technology of e-learning must be adopted in the teacher education curriculum of all universities in India. Online learning play a major role in the success of any academic program and can provide an environment where virtual learning classrooms are use to create interactive interfaces and real time software can monitor every response made by the learner. E-learning would incorporate all educational activities that are cratered out by individuals or groups working online or offline and synchronously or asynchronously via networked or standalone computers and other electronic devices. The present study has been done so as to study the attitude of prospective teacher educators towards e-learning. Random sampling technique has been used in the selection of the sample of as many as 200 prospective teacher educators. The e-learning scale for measuring the attitude towards e-leanring has been constructed and validated by Prakash, S. The scale is in the form of a Likert type and has been distributed to them and their responses were collected and computed according to the objectives framed. The findings of the study revealed that the prospective teacher educators showed a significantly favourable attitude towards e-learning..

Key words: Attitude, e-learning, web-based learning, Digital divide, digital world, Virtual classroom

Introduction

With the advent of computer and communication technologies, students in the field of higher education and particularly in distance education and online learning programs can receive learning materials online, join televised lectures, attend videos conference classes that link students and instructors from numerous geographic locations and participate in chat room discussions (Salman, 2012). The internet has developed into one of the most revolutionary technologies ever seen on the horizon of web-based technologies. It ahs

brought revolution in business, commerce, communications and ultimately in higher education (Davis, 2002). Web based learning is an interactive net based learning system in which the World Wide Web technology is used as a learning environ. It provides people with instant access to online courses whether they are at home or at work. The web can be used as both a digital library and virtual; classroom.

Web-based learning makes intelligent use of media such as computer conferencing, electronic mail, Compact Discs-ROMs, Digital Videos Discs and the internet. These interactive technologies support many different types of capability such as: internet access to digital versions of materials unavailable locally, internet access to search and transactional services, interactive diagnostic or adaptive tutorials, interactive educational games, remote control access to local physical devices, personalized information and guidance for learning, support simulations or models of scientific systems, communication tools for collaboration with other students and teachers, tools for creativity and design virtual reality environments for development and manipulation data analysis, modeling or organization tools and applications, electronic devices so as to assist learners.

E-learning is a technology which supports teaching and learning via a computer web technology. E-learning is internet-enabled learning. E-learning provides faster learning at reduced costs, increased access to learning and clear accountability for all participants in the learning process. (Johnson, 2011).

Incorporating E-learning in the Teacher Education Programs

There is immediate need to incorporate e-leanring into the teacher education programs. The students opting for teaching as a profession need to be given a wider and extensive exposure to training by e-learning. Through e-learning programs they will not only acquire crucial concepts of the philosophy, psychology, sociology and gender-based studies and so on so forth, but e-simulations and e-games will given them practical exposure of the school and class environment.

In the modern times improving the quality of education and training is the most critical issue in the sector of higher education. E-learning can enhance the quality of education by increasing learner motivation and engagement, by facilitating the acquisition of basic skills and by enhancing teacher training. Multimedia computer software that combines text, sound and colorful moving images can be used to provide challenging and authentic content that will engage student in the learning process.

E-learning can work in perfect synchronization with the teacher and the books to give the best to our students. All three of them i.e., e-learning, the computer factor; teacher, the

human factor and the books, the printed factor can strengthen, support and compliment each other in imparting holistic knowledge and training. It can surpass many of the pitfalls of regular classroom training such a boring slides, monotonous speech and two dimensional representations. The beauty of e-learning is that the new software allows the creation of very effective leanring environment that can engulf the learning in the material. In this regard, an e-teacher as to adapt to continues professional development in the educational use of technology.

In this sense, teachers have to be ready to make use of the possibilities that ICT offer, such a different learning contexts, focused on the students, presenting them with several types of interaction, offering different degrees of control of their own learning an promote collaborative tasks. Hence the e-teacher need to (i) Look at the subject content in a new way and re-think and adapt innovative course delivery. (ii) Gain computational proficiency that there is understanding of both its strength and its weakness (iii) Develop positive attitude towards e-learning (iv) Encourage students to set their own objectives and agendas (v) Understanding of different learning styles of students.

Landmark E-learning initiatives in the Context of Indian Higher Education

Realizing the importance of e-learning, UGC organized a dialogue on "*Enhancing Higher Education through e-learning*" in collaboration with the Commonwealth of Learning (COL), Vancouver in November, 2003 at New Delhi. The dialogue was attended by Vice-Chancellors of some selected Indian universities, heads of UGC's national centers, and experts from COL an outside India. One of the recommendations of the group was that UGC should created a system to support the use of e–learning by all institutions of higher learning in India, in an ambitious timeframe to enhance quality in higher education through e-learning. The real impetus of e-learning came from the National Task Force on Information technology and Software Development constituted by the Prime Minister of India in 1998. The Task Force report presents the master plan that India has in place as a long term poly for capacity building of institutions, human resource development in IT related areas, and use of ICTs in higher education. The India Gandhi National Open University (IGNOU) responded to the recommendations of the Task Force with its Virtual Campus Initiatives (VCI) in 1999. Since then a number of initiatives are in operation in the country (Mishra & Sharma, 2005).

For enhancing the ICT skills of teachers, organizations like the NCERT (National Council of Educational Research and Training), and the NCTE (National Council for teacher Education) etc. has been launching schemes from time to time. Recently, NCTE has also launched a new project for integrating technology in education: the XPEDITTE (X-elerated

Professional Development in the Integration of technology in Teacher Education) project in collaboration with Intel® Teach Program. The Intel Teach program is a globally acclaimed program that is being implemented in about 40 countries worldwide. It aims to help classroom teachers learn how best to use technology so as to improve teaching and learning. This collaborative project aims to provide professional development in technology integration to all teacher educators across the country.

In the early 1999, the Tamil Nadu Government announced its intention to establish a Tamil Virtual University designed to promote Tamil language, literature and culture internationally through the medium of Internet-linked computers. The Ministry of HRD in 2002 has set up a "*Consortia based subscription*", to electronic resources for Technical Education system in India on the recommendations made by the expert group appointed by the Ministry. The consortium is named as the Indian National Digital Library in engineering Science and Technology (INDEST) consortium. The consortium subscribes to bibliographic databases for 38 leading engineering and technological institutions in India including IIT (7), IIM (6) and a few other institutions directly funded by MHRD (Ahmad, 2009). In a survey on Current Status and trends of E-learning performed by Asian Development Bank (2004), India has been ranked between 3.0 to 3.9 on a10 point scale of e-Readiness among Asian countries.

Four phases were conducted so as to implement ICTs or e-learning content in the classroom. The phases are (i) ICTs Literacy; (ii) The effective and efficient use of ICTs hardware and software for teaching-learning activities; (iii) Pedagogy based ICTs use (integration of ICTs in subject content, teaching, online support, networking and management), and (iv) Adopt best innovative practices in the sue of ICTs (Singh & Dahiya,2007). There should be developed e-learning culture in the institutions of teacher education.

Objectives of the Study

The objectives of the study designed for the present study are as following:

1. To study the prospective teacher educators attitude towards e-learning technology.

2. To study if there is any significant difference in attitude towards e-learning technology between the male and female prospective teacher educators.

3. To study if there is any significant difference in attitude towards e-learning technology between the prospective teacher educators studying in the colleges of teacher education located in the urban areas and in the rural areas.

4. To study if there is any significant difference in attitude towards e-learning technology between the prospective teacher educators residing in the urban areas and in the rural areas.

5. To find out if there is any significant difference in attitude towards e-learning technology between the prospective teacher educators studying through English medium of instruction and those studying with Hindi as medium of instruction.

6. To find out if there is any significant difference in attitude towards e-learning technology between the prospective teacher educators belonging to the arts group and to those who belong to the science group.

7. To find out if there is any significant difference in attitude towards e-learning technology between the prospective teacher educators who are residing in their own residences and those who are living in boarding houses.

8. To find out if there is any significant difference in attitude towards e-learning technology between married and unmarried prospective teacher educators.

9. To study if there is any significant difference in attitude towards e-learning technology between the prospective teacher educators who are under-graduate and post graduate in their major   subjects.

Hypotheses of the Study

The hypotheses framed for carrying out the present investigation are as following:

1. There is no significant difference in attitude towards e-learning technology between the male and female prospective teacher educators.

2. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators studying in the colleges of teacher education located in the urban areas and in the rural areas.

3. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators residing in the urban areas and in the rural areas.

4. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators studying through English as medium of instruction and those studying with Hindi as medium of instruction.

5. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators belonging to the arts group and their counterparts in science group.

6. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators who are residing in their own residences and those who are living in boarding houses.

7. There is no significant difference in attitude towards e-learning technology between married and unmarried prospective teacher educators.

8. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators who are under-graduate and post graduate in their major subjects.

Methodology of the Study

A normative survey method has been employed in the present study. The investigator visited seven Teacher training colleges located in Aligarh district and collected data from the prospective teacher educators studying these colleges. Most of these colleges were self-financed colleges.

Sample

A sample of 190 prospective teacher educators was selected through random sampling technique from seven colleges of teacher education in Aligarh district.

Tool Used

The tool used for the present study was '*Attitude Towards e-Learning Scale*' by Prakash. S. (2011) was used in carrying out the present investigation. The tool was constructed and validated by Dr. Prakash. S. The scale is a five point scale and it consists of twenty four statements (Fifteen positive statements and nine negative statements). Each statement have the five options, namely; 'Strongly Agree', 'Agree', Undecided', 'Disagree' and 'Strongly Disagree'. The response of the subjects was scored by using the numerical values or arbitrary weights to the items. The statements were having the scoring as 5,4,3,2 and 1 for the responses 'Strongly Agree', 'Agree', Undecided', 'Disagree' and 'Strongly Disagree' respectively for the positive statements and the scoring procedure is reversed for the negative statements. Higher the score indicates the favourable attitude towards e-learning. The scale used in the study, in order to measure the prospective teacher educators attitude towards e-learning has construct validity. The scale has intrinsic validity as found by the author of this tool was 0.89 (Prakash, S. 2011). The reliability was found to be 0.78 by the split-half technique. The author finally calculated the reliability of the tool to be as 0.81 and the intrinsic validity as 0.90. The attitude towards e-learning scale has its validity as well as reliability.

Statistical techniques Used

The statistical techniques used were mean, standard deviation and 't'-test. The mean and standard deviation for the entire sample and its sub-samples were computed for attitude towards e-learning scores. The 't'- test of significance was used so as to find out the significance of the difference between the means of the attitude towards e-learning score. The

data collected was finally calculated using the Statistical Package for Social Sciences (SPSS) version 11.5 and after the data analysis the results found are hereby give in the table 1.0.

Analysis of the Data

The analysis of the data reveals the following results which are shown in the table 1.0 given:

Table -1: Mean and the SD of the attitude towards e-learning scores of the entire sample and its sub-samples

S.No.	Samples	Sub-Samples	N	Mean	SD	't' – value	Significant at 0.05 level
1.	Entire Sample		200	104.74	6.500	15.03	Significant
2.	Gender	Male	105	104.28	6.406	1.05	Not significant
		Female	95	105.25	6.620		
3.	Locality	Rural area	140	104.94	6.474	0.63	Not significant
		Urban area	60	104.28	6.628		
4.	Residence	Rural area	132	103.26	6.52	1.05	Not significant
		Urban area	68	104.21	6.71		
5.	Medium of Study	Hindi Medium	127	105.63	6.42	0.11	Not significant
		English Medium	73	103.71	6.44		
6.	Subject group	Arts group	120	102.68	6.58	0.29	Not significant
		Science group	80	105.32	6.27		
7.	Mode of Stay	Boarding house	31	104.79	6.62	0.29	Not significant
		Own Residence	169	1.4.63	6.23		
8.	Marital Status	Unmarried	135	104.35	6.21	0.31	Not significant
		Married	65	104.64	6.24		
9.	Educational qualification	Under-graduate	152	1.4.42	6.63	0.64	Not significant
		Post graduate	48	105.52	6.48		

Findings of the Study

From the table 1.0 it can be seen that present study has the following significant findings:

1. The prospective teacher educators show highly favorable attitude towards e-learning, as it can be seen from the table 1.0 for the entire and also for the sub-samples.

2. There is no significant difference in the attitude towards e-learning between the male and female prospective teacher educators. The hypothesis that there is no significant difference between the male and female prospective teacher educators stands accepted.

3. There is no significant difference in the attitude towards e-learning between the prospective teacher educators studying in the education colleges located in the urban and rural areas. The hypothesis that there is no significant difference in attitude towards e-learning technology between the prospective teacher educators residing in the urban areas and in the rural areas is accepted.

4. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators studying through Hindi medium and in English as medium of instruction. The hypothesis that there no significant difference in attitude towards e-learning technology between the prospective teacher educators studying through Hindi medium and in English as medium of instruction is accepted.

5. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators belonging to the arts group and their counterparts in science group. The hypothesis that there is no significant difference in attitude towards e-learning technology between the prospective teacher educators belonging to the arts group and their counter-parts belonging in science group is accepted.

6. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators who are residing in their own residences and those who are living in boarding houses. The hypothesis that there is no significant difference in attitude towards e- learning technology between the prospective teacher educators who are residing in their own residences and those who are living in boarding houses stands accepted.

7. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators who are married and unmarried. The hypothesis that there is no significant difference in the attitude towards e-learning technology between the prospective teacher educators who are married and unmarried stands accepted.

8. There is no significant difference in attitude towards e-learning technology between the prospective teacher educators who are under-graduate and post graduate in their major subjects. The hypothesis no significant difference in attitude towards e-learning technology between the prospective teacher educators who are under-graduate and post graduate in their major subjects stands accepted.

Suggestions

The following are the suggestions for effective use of e-learning technology in teacher education institutions:

1. It is the teachers who are essential players in promoting quality education and no education reform is likely to succeed without the active participation and ownership of teachers. Teacher must be able to incorporate e-learning with the traditional learning and competent enough in web-based teaching

2. Teachers must change their mindset and accept a new teaching paradigm that is from teaching to facilitating and managing learning rather than disseminating of information.

3. Institutions of higher learning need to upgrade their teachers by offering re-training programmes on e-learning. Teacher Training institutions must develop competencies among teacher trainees in use of off-line e-resources and on-line resources and also in blended mode.

4. There is a need to revise Teacher Education curriculum as well as curriculum in different disciplines of higher education in the light of technological advancement.

5. High quality learning materials developed for standard curriculum areas will provide a consistent and enhanced learning environment. E-content should be created in a format that will allow it utilization across various e-learning technology platforms. It is equally important to make certain that the content provided is consistent with the leanring methodologies in use at various institutions and thus being more likely to result in successful learning (Greenagel, 2002).

6. Accreditate online learning courses and programmes to provide them social recognition.

7. There is a wide disparity in the use of e-learning in India in rural and urban areas. Further, where the facilities are available, the same are not being fully utilized. Proper feedback information at the Government bodies coordinating and controlling higher education and training is imperative in the management of the problem of '*digital divide*' in academic institutions (Ahmad, 2004).

8. E-learning materials should also be available in various regional languages.

9. There must be some 'reward system' for teachers incorporating e-learning tools in their teaching-learning process.

10. There is an urgent need to promote researches on the various aspects of e-learning.

Educational Implications

E-learning has been used effectively in teacher educational institutions. Students enrolled on many courses in many institutions now find that they have web access to the lecture notes and selected digital resources in support of their study, they have web access to the lecture notes and selected digital resources in support of their study, they have personalized web environments in which they can join discussion forums with their class or group, and this new kind of access gives them much greater flexibility of study.

The '*digital divide*' as it related to education is not so much about hardware or money but about 'attitude' to learn that will ultimately bring about relevant and global 'cultural changes' in both education and society associated with the ICT revolution. When any new technology emerges, teacher is charged to be able to use it without exception. However, e-learning demands a certain level of skills on the behalf of teachers and students both. Sometimes even highly educated teachers lack necessary computer and internet skills.

Teacher education institutions must invest in training their teachers in necessary computer competency skills. Teacher education institutions must provide supportive environment, incentives and technical help to encourage e-learning. With a good strategy and promotion, the implementation of e-learning in teacher education institutions will be successful. Use of e-learning in teacher education has the following advantages: lower costs, time saving, flexibility, faster response, greater effectiveness, better morale, greater competitiveness and easy access to information and resources.

E-learning environments increasingly serve as important infrastructural features of universities that enable teachers to provide students with different representation of knowledge and to enhance interaction between teachers and students and amongst students themselves (Mahizadeh, 2008).

Conclusion

Teacher education in view of globalization cannot afford to remain indifferent and unresponsive to the usefulness and benefits of e-learning. The spectrum of e-learning with it mind boggling progression has exercised a well discernable shift from formal schooling to de-schooling and to electronic schooling. With collaborative tools e-learning is moving virtual classes and virtual communities where the old methods of practice and test have melted into new interactive teaching-learning methodologies. A judicious blend of both traditional and virtual learning environment with special attention to students' needs and satisfaction can create constructive and creative learners, teaching community and learned society in India.

The present investigation revealed that the prospective teacher educators studying in various teacher training colleges of Aligarh district were found to have a favourable attitude towards e-learning technology. The various demographic variables taken such as gender, locality of the college, residence of the prospective teacher educators, Medium of study, subject group, Mode of stay, marital status and educational qualification does not affect the prospective teacher educators attitude towards e-learning technology. Thus, it can be seen from the above investigation that prospective teacher educators should also try to develop a favourable attitude towards e-learning in the prospective student teachers as well as among the teachers who are involved in using and incorporating the technology in the classroom.

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