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A NATURALISTIC INQUIRY INTO THE TRAINING NEEDS OF TEACHER EDUCATORS IN E-LEARNING SKILLS

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ABSTRACT

The aim of the present research is to provide guidelines as to which professional e-Learning Skill deficiencies must be remedied and what should be the technology profile of future trainees. To stay ahead of the skill curve, it is imperative that the Teacher Education system is aligned to National Digital Goals and Expectations. The perceived level of comfort and difficulty and the training needs required as reported in the present Naturalistic Inquiry generated the Hypotheses on the training needs which the teacher education system in India must realistically take into account. As India is undergoing a renewed drive to develop a skilled nation in a more focused way, the lessons learned from this research on the skill gaps will address teacher training needs, which will also contribute towards the designing of the teacher professional development courses and programmes at the pre-Service and In-Service Trainings. Policy Making Bodies like NCTE and NCERT consider these results when developing teacher training plans to produce higher quality programmes in accordance with the required digital needs and emerging social demands.

KEY WORDS: *E-learning.*

INTRODUCTION

The age of information, sustained and accelerated by the web 2.0 and web 3.0 technologies, changed our lives in the 20th century and have an even greater impact in the 21st century. Education has changed tremendously over the past few decades, as a result of easier access to networked information and communication technologies. The shift from second to third millennium thinking, given in Table-1, signals a noticeable move from instructivist to constructivist pedagogy.

Table 1: (From Townend, Clarke & Ainscow, 1999: 363)

Second Millennium Thinking	Third Millennium Thinking
Important learning can only occur in formal learning facilities.	People can learn things from many sources.
Everyone must learn a common 'core' of content.	Everyone must understand the learning process and have basic learning skills.
Education and leaning are individual activities.	Success is based on how well learners learn as individuals.
Education and leaning are highly interactive activities.	Success is based on how well learners work together as a team.
Formal education prepares people for life.	Formal education is the basis for lifelong learning.

The more formal qualifications you have the more successful you will be.	More capability & adaptability you have, the more successful you will be.

INTERNATIONAL AND NATIONAL BACKDROP OF THE STUDY

The National Mission on Education through ICT (NMEICT) launched in 2009 provides a momentous opportunity for all the teachers and experts in the country to pool their collective wisdom for the benefit of every Indian learner and, thereby, reducing the digital divides. The National Knowledge Commission (NKC) has observed that teachers are the single most important element of the Educational System. Norms and Standards for teacher education institutions have been revised in 2014 in accordance with the recommendations of the Justice Verma Commission. Digital India campaign launched by the Government of India in 2015 has taken initiatives for the introduction of Information Technology to empower people in areas relating to education, labour and employment. With the launch of SWAYAM, India has become one of the few countries in the World which has its own online interactive learning platform that provides, not only video lectures, reading material but also assignments/quizzes that could end up in securing credits after completing the assessment system.

In keeping with the above International and National trends, the present study entitled "A Naturalistic Inquiry into the Training Needs of Teacher Educators in e-Learning Skills" has been undertaken.

REVIEW OF RELATED STUDIES AND RATIONALE OF THE STUDY

The topic of Training Needs in Teacher Education is an area of growing national and international concern. However, a thorough search for any previous research in this vital area throws light on the Research Gap.

Jenny M Lane, (2012) made a study on, "Developing the Vision: Preparing Teachers to Deliver a Digital World Class Education System". In 2008, Australians were promised a 'Digital Education Revolution' by the government to dramatically change classroom education and build a 'world-class education system'. Eight billion dollars have been spent providing computer equipment for upper secondary classrooms, yet the study found little evidence that a revolution has occurred in Australian schools. The study concluded that transformation of an education system takes more than a simplistic hardware solution. Revolutions need leaders and leaders need vision. The study recommended a need to look beyond putting computer hardware into classrooms.

Charles Musarurwa (2011) made an Impact Study on "Teaching with and Learning through ICTs in Zimbabwe's Teacher Education Colleges". An interesting finding of the study is that the rate at which schools in Zimbabwe have embraced the use of ICTs is unprecedented, but this has not been matched with an equal effort by teacher education colleges. Hence, teacher trainees have been less exposed and trained in using such technologies and evidently this has created a mismatch.

Coburn (2007) has designed a formula that provides a mathematical visualization of the process of the Change in Technology Use:

Change in Technology Use = f (user crisis vs. user's total perceived pain of adoption)

That is, a change in technology use is a function of the relationship between the user's crisis and the perceived pain of adoption. As the crisis increases and numbs out the perceived pain of adopting the new technology, teachers will embrace and implement the new technology.

A sizeable number of teacher education institutions in India have initiated into ICT in Education either as a core course or as optional course. Inspite of the impeding factors, namely, limited staff, inadequate laboratories with maintenance problems, sizeable classes, the courses have been found to realize their objectives reasonably (Goel, Das, and Shelat, 2003, MSU).

Karpaga Kumaravel (2013) conducted a descriptive study to explore the level of ICT Fluency among the Teacher Educators of selected Districts of Tamil Nadu. The finding was discouraging and the study recommended the development of an e-Maturity Model to benchmark the Digital Culture in the Teacher Education Institutions.

It is evident from the review of related research studies (both on line and off-line) that no study has been undertaken so far to track the training needs of the Teacher Educators in e-Learning Skills and hence the present research is undertaken to fill this gap .

SIGNIFICANCE OF THE PROBLEM

In India, unemployability is a bigger problem than unemployment. "90% of what is learnt at the academic institutes is knowledge, whereas 90% of jobs today require skills. 58% of India's youth face some form of skill deprivation." Neeti Sharma (2018). Training Needs Assessment (TNA) processes have a strategic role because they provide clear guidelines as to which professional skill deficiencies must be remedied and what the profile of future trainees should be. This will strengthen the skill base of the talent pool of the Teacher Educators and help Teacher Education bridge the existing skill gap. Hence, the Training Needs of the teacher educators have to be systematically assessed, monitored and tracked at policy and institutional levels. The present study is a significant attempt in this regard.

SCOPE AND LIMITATIONS OF THE STUDY

Inadequate monitoring of teachers' e-Learning Skills and their integration practices of ICT have been raised as reoccurring concerns, which have necessitated to undertake the present study. The scope of the study will reflect the gaps between the present status and desired status. The recommendations of the study will help the Teacher Educators stay up-to-date with latest eLearning trends.

The present study is limited to a cluster sample of 40 teacher-educator participants, due to time constraint. A larger sample, involving more universities and colleges will throw light on the various other variables, which do not fall under the scope of the present study.

PURPOSE AND RESEARCH QUESTIONS

The purpose of this research study is to elicit the views and perceptions of teacher educators about their training needs that will enhance their e-learning skills for better classroom practices.

The research questions of the study are:

1. What are the training needs for the teacher educators which will enhance their e-learning skills for better classroom practices?
2. What are the training needs intervention strategies that will enhance their e-learning skills for better classroom practices?

RESEARCH METHODOLOGY AND QUALITATIVE ANALYSIS

This research project adopted the Naturalistic Inquiry Method, which is a qualitative research technique to seek insight into the problem through verbal data gathered rather than scaled, calibrated measurement. The strength of this qualitative research design is its ability to provide complex textual descriptions of how participants experience a given research issue. Naturalistic inquiry designs are valuable for exploratory research like the present one, particularly when relevant theoretical frameworks are not available or when little is known about the problem taken for study. Showing how science is limited by its dominant mode of investigation, Lincoln and Guba (1985) proposed this alternative paradigm - a "naturalistic" rather than "rationalistic" method of inquiry-in which the investigator avoids manipulating research outcomes.

Data collection methods that were used in this study are focus group discussions and semi-structured interviews with the Teacher Educators. These provided the necessary information that would enable insight into the views and perceptions of teacher educators in the University Departments and Colleges of Education, based on the personal experiences about the training needs that will enhance their e-learning skills for better classroom practices and the training needs intervention strategies that will enhance their e-learning skills.

SAMPLING

Sampling is defined by Merriam (2002) as the selection of a research site, time, people and events in field research. The present study used purposive sampling to gather data, because it allowed the researchers to use a particular subset of people, in this case, Forty Participants of the UGC-Refresher Course in Education, representing University Departments of Education and the Colleges of Education. It also dealt on the issues of validity and reliability of this qualitative research study through triangulation technique and also through cross-checking of the Interview Response Notes, with the respondents themselves.

ANALYSIS AND INTERPRETATION OF DATA

The Collected Verbal data were subjected to appropriate qualitative analysis. The emergent grounded theory and the Hypotheses generated out of the Naturalistic Inquiry and Qualitative Analysis is presented in the following section:

The data were analyzed using content analysis, which is one of the qualitative research techniques, by the Naturalistic Inquiry Researcher. The data are analyzed by using categorization and coding according to the themes presented. The units of information were identified on the basis of the chunks of meaning which came out of the data itself, which were heuristic. Coding is an iterative process that seeks to identify a word or short phrase that captures and signals what is going on in a piece of data in a way that links it to some more general analysis issue (Rossman & Rallis, 2012, p. 282). The codebook for the present research was developed through open coding techniques by the researchers. Open coding consists of selecting sections of text of interest and coding them inductively with a key word generated from the data itself opposed to using a predefined set of categories or codes.

For the present study, the formula described in Miles and Huberman (1994) has been used to measure consistency as given below.

$$\text{Reliability} = \frac{\text{Number of agreements}}{\text{Number of agreements + disagreements}}$$

The numbers of consensus and divergence were detected and the reliability of research was calculated by using the above formula of Miles and Huberman (Reliability = consensus/consensus + divergence). 70% consensus (reliability) was found in the present study, which is sufficient for the research purpose.

Findings and Discussion, Suggestions and Recommendations

Technological profile of the Teacher Educator Respondents

The teacher-educator respondents have mixed technological profile, with lot of scope for improvement. Only 40% of the participants have DSL (broadband) connection at home. On the positive side, a good number of 90% of them reported that they use computer (for work, entertainment, or information) for more than 1 hour a day, while 35% of them admit that they use computer for more than 3 hours a day. Finally, with regard to their Comfort Level in using the Hardware, 90 % of them reported to be *very comfortable* in using Computer, but in contrast, 80% of the teacher-educator respondents feel *very uncomfortable* in using the Interactive Whiteboard. They were found to experience this discomfort with the use of Interactive Whiteboard due to insufficient knowledge, lack of training and opportunities along with the issue of availability with internet connectivity. Smart boards were a valuable educational tool likely to be used in many classroom environments. They were found to increase students' interest and interaction and improving visual materials. They were also reported to allow enrichment of classes with animations, sounds, pictures and games. As many as 60% of them reported that they are *somewhat comfortable* in using digital camera. As technological tool, the digital camera has become more common and teacher-educators and teacher-trainees have increasingly integrated them into their Observation and Feedback for acquiring Micro-

Teaching Skills and also in laboratory activities. Hence, it is essential that all the Teacher-Educators are trained to tap the potentials of this powerful tool.

It is heartening to find that the teacher educator respondents are relatively strong in terms of their comfort level in using the following type of software: 95% reported *very comfortable* in using word processing, 60% are *somewhat comfortable* in using Desktop Publishing like Microsoft Publisher and 75% report as *very comfortable* in using Spreadsheet Software like Excel. Finally when it comes to their comfort level in integrating the hardware and/ or software into their lesson plans, majority of teacher educator respondents (80%) report that they are *very uncomfortable.* The thoughtful use of new forms of ICTs has to be exploited to strengthen and enhance teacher development programmes, address access issues and improve the quality of educational delivery. Yet, it is unfortunate to find that effective technology integration into teachers' classroom practice has not been widespread. The issue is complex where the need is to equip educators and administrators with expertise for ICT integration from a system perspective to support both institutional developments that will in turn support the pedagogical integration of ICT in classroom practice.

E-learning areas - Difficulty Level and Training Needs, as perceived by Teacher Educators

In order to determine the level of difficulty among the teacher educator respondents about the e-learning areas, they were requested to assign a rank in order of difficulty, by putting 1 against the e-learning area which they consider most difficult, 2 against the one next in order of difficulty… and 9 against the one which they consider relatively least difficult and are presented as given below, in the descending order, on the basis of their mean and standard deviation scores:

1. *e-learning content authoring tool ------ Most Difficult Area*
2. *Video Editing Software*
3. *Audio on Demand Tool*
4. *Animation Skill*
5. *Photo Editing Tool*
6. *Webinar Tool e.g. WebEx*
7. *Blogs , Podcasts and Wikis*
8. *Online Chat (e.g. Google Hangout, Skype)*
9. Web 2.0 technologies and social networking sites (SNS) like Facebook Twitter *and WhatsApp -----Least Difficult Area*

Participants responded that they need to be provided with professional development Training Programmes to improve their classroom practice in the above areas, as ranked above in the descending order, according to their level of difficulty.

E-learning content authoring tool has been reported as the Most Difficult Area in which the majority of Teacher-Respondents responded that they have poor skill. It is perhaps that there is a lack of exposure and awareness that such tools are available in the market. An e-learning content authoring tool is a software package which developers use to create and package e-learning content deliverable to end users. A content authoring tool is a software application used to create multimedia content typically for delivery on the World Wide Web. Content-authoring tools may also create content in other file formats so the training can be delivered on a CD (compact disc) or in other formats for various different uses. The category of content-authoring tools includes HTML, Flash, and various types of e-learning authoring tools. However, only a small group of programs specifically include support for e-learning content standards such as SCORM (Shareable Content Object Reference Model) or AICC (CBT) (Aviation Industry CBT Committee).

The Video Editing Software has been rated as second most difficult area in which the teacher educators indicated that they are poor on this skill set. The lack of knowledge in the application of this tool spells out the need for them to undergo training in this domain in order to ensure positive learning effects with audio, visuals, texts, pictures, animations, quizzes amongst others all packed into an e-learning package.

The Audio on demand tool has been indicated as the third most difficult area in which they report that they are at the poor scale. This could imply that in the absence of this skill, during e-learning sessions, the students will face the risk of receiving the slides without any voice over. When deprived of any audio explanation, there will be no clarity in the understanding of content.

The Animation skill has been rated as the fourth most difficult area in which the respondents self-report that they are poor. This lack of skill implies that it will be detrimental to create graphically engaging visuals to engage students and to enhance learning. It will also lead to an undesirable situation of students branding e-lessons as boring and non-engaging.

The Photo-editing tool is the fifth most difficulty area, as rated by the participants themselves as poor in this tool. An important component of e-learning activity, this skill facilitates visuals and comes in handy for touch up purpose.

The Webinar tool has been ranked as the next difficult skill by the respondents which indicates that the teacher educators do not conduct or not even aware of the availability of such a tool. Training of Teacher-Educators in webinar will facilitate tremendous opportunities for e-learning plans to a bigger group of students.

It is encouraging to note that the Teacher-Educator Respondents perceive comfort with the Blogs, Podcast and Wiki types of new technology. They have to be used in classroom environment as powerful tools to link communication between study groups within a class or other classes or even institutions, extending the learning environment beyond the boundaries. Proper Environment and Motivation are to be given to accelerate the desirable use of this new type of technology.

It is a heartening finding that the Teacher-Educator Respondents feel at home with Web chats, which promote real-time collaboration and discussion that can lead to deeper processing of class material. The chat rooms are also recommended for use to improve certain specific administrative areas, such as student enquiries, library services and student counseling.

It can be understood that the Web 2.0 technologies and social networking sites (SNS) like Facebook, Twitter and WhatsApp are reported as most user-friendly by the respondents due to their prevalence and use. Due to their unique nature to meet the needs of individuals towards socialization, they have become the “communication portal” for social networking, which has rapidly transformed the way teachers communicate. Their potentials as online tutorial complements to increase learning and their scope of interaction between students on personal, school, and course related matters have pedagogical, social and technological affordances have to be utilized by the Teachers as well as students. The second generation web applications (Web 2.0) are transforming e-learning and opening new frontier for learner empowerment, control and engagement. New online technologies allow individuals to filter and control existing content (aggregation), easily create new content (personal publishing) and rapidly communicate, inform and distribute this information with peers through online social service. With a very large variety of online tools (blogs, wikis, podcasts and social bookmarking sites) assembled, a highly personalized learning environment is built up by the learner. This phase of e-learning in combination with Web 2.0 (current trend in e-learning) is called e-learning 2.0. It powerfully focuses on the collaborative nature of e-learning, like learner creates studying contents, and collaborates with others to form a learning network with distributions and responses. Training is needed for using the Social Networking Sites as a platform for collaboration of course contents which can link the students in a Group to related articles, websites, social bookmarks, videos and blogs, to expand the students’ knowledge and support learning activities. Effective use of the Group has to be explored to announce latest updates on the course assessments and class activities and to encourage discussion among students regarding the difficult topics and finding friends to form groups for their group assignments.

CONCLUSIONS AND IMPLICATIONS

The perceived level of comfort and difficulty and the training needs required as analyzed and presented in this Naturalistic Inquiry generated the Hypotheses on the training needs which the teacher

education system in India must realistically take into account. As India is undergoing a renewed drive to develop a skilled nation in a more focused way, the lessons learned from this research study on the skill gaps will address teacher training needs which will also contribute towards the designing of the teacher professional development courses conducted by the UGC-Human Resource Development Centers (HRDC) in a more focused way.

The significant contribution of the present study is that it has generated a knowledge base about the comfort level of teacher educators in the use of hardware and software and also integrating them into the teaching-learning in teacher education institutions. The findings pertaining to the training needs of the teacher educators unfold the urgent need for appropriate skill in order to enable the teacher educators contribute to the Making of the Digital India.

This also implies that Policy Making Bodies like NCTE and NCERT consider these results when developing teacher training plans to produce higher quality programmes in accordance with the required needs and current demands.The National Digital Initiatives in Education and the Adoption of the " Programme 17 for 17" - A 17 point action plan for 2017 by the MHRD for building digital campuses and high quality education will bear fruits only when the grass root level problems like the E-Learning Training Needs, as recommended on the basis of the findings of the present study are addressed. Further Research is recommended on the assessment of e-Learning Skills among the Students as well as Students' attitudes towards e-learning sessions, which may bring insight into resolving or minimizing the e-learning barriers.

Epilogue

"Without E-Skilled teachers, students cannot benefit from the educational opportunities afforded by technology" - UNESCO, 2016.

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