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Readiness for Implementation of E-Learning in Colleges of Education

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ABSTRACT: Understanding the readiness of users is paramount to the success of any e-learning programme. Implementing e-learning by educational institutions has strong benefits, one of which is that e-learning provides consistent content that assists students to overcome problems involved with instructors different teaching styles.E-readiness assessment is a useful tool for determining a country's starting point and can be considered as an initial phase of the national strategy building for an area that needs ICT as a precondition for strategy implementation.This study is a descriptive and survey work whichexplores readiness for implementation of e-learning in colleges of education from point view of its Heads/principals. A researcher made questionnaire was developed to measure e-learning readiness.Readinesscategories included; ICT infrastructure, Human Resources, Budget and finance, Psychological and Content with reference to the different types of colleges of education.Before conducting main study, it was done validity and reliability of the tool. Data were gatheredfrom a sample of 35 receivers and 31Heads of colleges of Education affiliated by University of Mysore. After analysisof data it was found that there is no significant difference among Colleges with respect to their types(Govt. Private-aided and Private-unaided) in readiness of e-learning.

***Keywords*:** e-learning, e-readiness, assessment, colleges of education.

INTRODUCTION

Higher education sector can take greatest advantage of the increased use of technology, especially the Internet, in delivering the educational product. Usage of new technologies, internet and e-learning in higher education especially in teacher education programs, can increase speed of development, and educate citizen familiar with ICT and needs of living in 21century.

Curriculum, administration, and assessment are all affected as members of the educational community experience changes in communication and commerce that are a result of the explosive expansion of the Internet (Austin and Mahlman, 2000). Thus, many educators are looking at the way ICT and Internet-based learning can provide flexibility and convenience. Internet-based learning can overcome some traditional barriers such as time and place. A student can study independently online or take an instructor-led online class, which combines the benefits of self study with those of more traditional classroom-based learning (Ryan, 2001). For working adults occupying an increasingly large percentage of our college population, and with greater numbers of students having computer and Internet experience prior to entering college, opportunities are being made to better meet their needs, interests, and work schedules through online classes(Cooper, 2001). As university-level technology education programs begin to offer more online classes and degree programs, technology education professors may be in the position of developing online offerings (Flowers, 2001).

Technological advancement has been the major inspiration for change, beginning with the integration of radio broadcasting in the 1920's (Huynh, Umesh and Valachich, 2003). More recently, the advent of the Internet has enabled tremendous innovation in the delivery of post secondary education (Gunasekaran, McNeil and Shaul, 2002; Teo and Gay, 2006). As time goes by, more and more people gain access to the Internet, the cost of computer ownership decreases, and overall computer literacy increases (Huynh et al., 2003). These trends provide educational institutions an ideal channel for the delivery of educational content.

Integrating of e-learning technologies in education and having skilled faculties and students (as future teachers) should be an integral part of the colleges of educations' system and curriculum to developing in IT and Knowledge based societies. The findings of the study will facilitate the process of decision-making and planning of usage and implementation of e-learning in teacher education colleges. Clarifying potential differences or similarities on gender, work experience, level of education, type of institution, type of subject for faculties will show a mirror with a full feature of selected sample and finally population of B.Ed. colleges in the area and even in state level. Therefore, according to the previous works studied by the researcher about the assessing needs of e-learning in teacher training level, with confidence and certainty it can be said that; this research project is the first one in the field around the state and the country in India.

Using new technology in teaching will make students more capable of working on their own to collect information from variety of sources besides the instructor, and in this way, e-learning will create a competitive learning environment (Gotthardt et al., 2006).

Readiness for implementation of E-Learning in this research is the realization of possibility and assessing of its readiness and conducting of it teaching-leaning process in colleges of Education (B.Ed. Colleges) affiliated by University of Mysore.

E-L earning

E-learning, or electronic learning, has been defined a number of different ways in the literature. In general, e-learning is the expression broadly used to describe "instructional content or learning experience delivered or enabled by electronic technologies" (Ong, Lai and Wang, 2004).Some definitions of e-learning are more restrictive than this one, for example limiting e-learning to content delivery via the Internet (Jones, 2003). However, the most well-known definition that educators agree on is that e-learning is set of synchronous and asynchronous instruction delivered to learners over technology (Colvin and Mayer, 2008). E-learning encompasses related terms like online learning, virtual learning, Web-based learning, and distance learning (Panda and Mishra, 2007). BadrulKhan (2001) pointed out that; an e-learning program in terms of various components and features that can be conducive to learning. Components are integral parts of an e-learning system. Features are characteristics of an e-learning program contributed by those components. Components, individually and jointly, can contribute to one or more features.

E-learning is considered the appropriate solution to the call for a just-in-time accessible, ubiquitous approach to providing learning at a lower cost (Borotisand and Poulymenakou, 2004).The ability of the Internet to make learning possible regardless of geographic location or time of day has made WBI (Web-based instruction) a very attractive recruiting and retention tool for colleges and universities worldwide (Williams, 2008).

Understanding the readiness of users is paramount to the success of any e-learning programme. Implementing e-learning by educational institutions has strong benefits, one of which is that e-learning provides consistent content that assists students to overcome problems involved with instructors different teaching styles. Another benefit of an e-learning course is that self paced learning allows students to skip material they already know and move onto the next topic (Lewis, 2007). The third benefit of an e-learning course is that the course materials are uploaded to the server, which allows instructors and the technical support team to easily update and manage the materials (Lewis, 2007). A fourth benefit is offering students the freedom of learning anytime and anywhere.

Objectiveof the Study

Main Objective of this study was;to assess thereadiness for implementation of e-learning in terms of readinesscategoriesincluding;ICT infrastructure,Human Resources,Budget and finance,Psychologicaland Content of e-learning in different types of colleges of education from point view of Heads/Principals.

MATERIALS AND METHODS

Methodology

The survey approach aims to capture snapshots of practices and situations at a particular point in time. Surveys are often utilised to examine a number of variables or characteristics over a relatively large number of participants. The major strength of survey is its ability to observe a large number of variables in the target population (Galliers, 1992).

Sample of the Study

According to Krejcie and Morgan's table, the optimal (effective and valid) sample size to represent students' population of 35 is 31for heads/principals. This calculation of sample size agrees with Wimmer and Dominick's

calculation, (2005) at 95% confidence and 5% margin of error. To gather sufficient variables/factors and to allow for the substantial sample size needed to provide an overview of readiness for implementation of e-learning, the survey method was clearly the most suitable approach. To this end, data were collected by means of paper-based questionnaire Heads/ principals working in colleges of education affiliated by University of Mysore.

The Bachelor of Education programme, generally known as B.Ed., is a professional course that prepares teachers for upper primary or middle level (classes VI-VIII), secondary (classes IX-X) and senior secondary (classes XI-XII) levels. This program is offered by Teacher Training colleges which mainly designed to prepare effective secondary school teachers. The program essentially aims at providing the student teachers an insight into the educational scenario in the world with a specific reference to India. The duration of study for B.Ed. degree is extend over a period of one academic year as a regular course of not less than 180 working days which at least 40 days shall be for practice teaching in about ten schools at upper primary / secondary / senior secondary level. The medium of instruction and examination in B.Ed. program is Kannada (local language of the Karnataka state) or English. Types of colleges based on the dependency to financial aids from state government divide in three types; governmental /private- aided and private-unaided. Teaching subjectsare sciences, art and languages field.

All Heads/principals of colleges of education, affiliated by University of Mysore constituted the population of the present study. Sample size was considered based on the number of colleges (one college = one Head). As per the data available, at present study, 35 colleges of education affiliated to University of Mysore were purely conducting 1 year B.Ed. programme, so 31 Heads/ principals were chosen for the study, using “stratified sampling method”

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Tool of the Study

There are a number of instruments in the market that can be used readiness for implementationof e-learningfor and assessing its needs. However, almost all of these instruments are developed to be used in countries that have a mature field of human resources development and not useful for educational institutes, but mostly suitable for industrial and companies. Chapnick, (2000) has developed an instrument for assessing organizational readiness for e-learning.She considers her instrument as an e-learning needs assessment model

Chapnick claims that there are several factors thatmust be considered to assess readiness. She lists 66 factors in question format and groups them into 8 categories:(1) Psychological; (2) sociological; (3) environmental; (4) human resources; (5) financial readiness; (6)technological skill (aptitude); (7) equipment; (8) content readiness.

In a different way than prior researcher,Chapnick provides multiple choices for each question and expects managers to select only one response thatrepresents the situation of their respective companies. Each response has a point value indicated in parenthesis atthe end of each choice. Her model helps managers not only assess on what level their companies are readyfor e-learning, but also reveals in what areas their companies need improvement and in which areas it issuccessful.

Othere-learning readiness instrumentis often cited in previous studies, such as Anderson, (2002); Rosenberg, (2000); Broadbent, (2001); Milton, (2000), so forth. Any of theseinstruments may seem to be used by any company to assess its readiness for e-learning. However, Rogers, (2003) points out that every system (i.e., organization, culture, country, individual) has its ownnorms that can be effective in diffusing an innovation in its system.

Chapnick’s model is designed to measure the readiness and needs assesment of using e-learningin business organisations and does not fit neatly into the school or educational environment.Building on Chapnick’s model, Kaur and Abas, (2004) designed a model for measuring the e-learning readiness of the Open University Malaysia. Their model consists of eight constructs: learner, management, personnel, content, technical,environmental, cultural and financial readiness. Taking a slightly different approach, Borotis and Poulymenakou, (2004) proposed a seven components model of e-learning readiness, based on previous research, as well as their own experience, to counter the lack of congruency in predefined components of e-learning. Most of the existing e-learning instruments were not developed for using in Teacher training colleges–the majority of these having been constructed for business organisations.

From this perspective, it can be said thatthese instruments may not work for organizations of other countries, even for educational organization. Therefore, the results of the assessment may very well be invalid for respondents from other countries thanwestern. Studies on impact of culture and context in e-learning (e.g., Gunawardena et al, 2001; McIsaac, 2002) can also be shown as a base for this observation.

For designing of the tool many previous works and theoretical frameworks was studied. Comparing and analyzing tools and objectives the previous studies showed that most of them were not properly useful with the objectives of the research and situation of colleges of education. Most of tools which are in the market assess e-learning in institutions which already they have had the e-learning system and using LMS or LCMS in their organizations. But samples of this research have not used and implemented such technology. So this new tools were designed by the researcher with considering that this study is assessing needs of faculty

membersandstudents of colleges on e-learning in theses institutes. However readiness for implementation of e-learning as a system is administrational issue so the key players of the implementation were Heads/ Principals of the colleges. Providing ICT infrastructure, Human resource, budget and finance, Psychological and content readiness is developed and created basically by heads/ principals. First division of the questionnaire was in demographic information, andsecond division of assessing tool for determining thee-Learning implementation of in the Colleges have three subdivisions which include; ICTInfrastructure,HumanResources, Budgets &Finance. This part questions are in Yes / No type.ICT Infrastructure includes; having anofficial website, having installed server rather than a hosted server,having sufficient internet bandwidth available to access resources, having adequate equipment to support the e-learning initiative, LMS, LCMS, having a technology plan that clearly describes the process of acquiring, maintaining, and upgrading hardware and software required for e-learning,

Human Resources also includes; Having a plan to train college staff and faculty members for any new technological skills that they might need in the future,Having a motivated staff and faculty members to implement e-Learning,Having e-learning development professionals for the implementation of e-learning,having enough number of academic staff for the implementation of e-Learning,being ready of working environment for the implementation of e-learning, Having an assurance of the social support including the wages among the faculty members, Having necessary resources for the implementation of e-learning for faculty members and students, and finally ,Having necessary skills for the implementation of e-learning among faculty members.Budgets & Finance covers; having a budget for implementing e-learning, having adequate funds for implementing of e-learning and finally being ready financially to venture into e-learning.

Psychological Readiness for Implementation of e-learning has eight multiple choice questions which are. First one was on having a plan to assess the faculty members and students for learning. Second question was about being well suited learning styles of faculty members and student for e-learning. Third question was on conducting interviews or other assessment methods planned (or have they been conducted) with the Faculty Members and Students to determine their attitude towards e-Learning. Fourth question explored the response of the faculty members and students to any previous transitions such as reorganizations, mergers, management changes, conversions to computer systems, and so on. Fifth question focused on the involvement of the faculty members and students in the planning and designing any process for e-learning. Sixth and final question for this part asked about personal “high-tech” devices for the majority of the faculty members and students own.

Part D or the last part of readiness for implementation of e-learning questionnaire was on Content Readiness for Implementation which covered with 6 questions: First question was on some of the characteristics of the existing content that college heads intended to port into e-learning.Second question was on the competency assessment required upon completion of instruction. Requirement of the desired competency goal to improving motor skills (with the exception of typing) was third question. Fourth question asked about the percentage of the subject matter is already in multimedia format (i.e. audio, video. And finally last question was about changing of the subject matterin.

Validityand Reliability of the Tool

Thetool was in English language but they become translated to Kannada language (local language of the Karnataka state) to being more understandable and easy answering. Before the questionnaire was piloted, to check on face and content validity as well as the construct for the items in the instruments, were scanned and reviewed with the help of 8 experts who know both English and Kannada languages and were involved in the field of education, Higher education, ICT and e-leaning.

A pilot test was carried out to determine the reliability of the items representing the construct being measured, and the Alpha Cronbach value found for the pilot test was**.**6532. As for the Alpha Cronbach value of the items for these construct were classified as having acceptable reliability. According to the Alpha Cronbach Reliability Classification Index, these values are classified as acceptable and therefore no changes were made to all items (Pallant, 2002; Sekaran, 2003; KamarulAzmiJasmi, 2010).

Findings

E-Learning implementation from point view of heads/principals” with respect to ICT infrastructurereadiness, human resourcesreadiness, budget and financialreadiness, psychological readiness to implementation of e-learning, content readiness to implementationof e-learning were assessed. After analysis of related questions it was found to be same for all types of institutions as the observed contingency coefficientto be non-significant.

ICT infrastructure readiness was one of the important components of implementation of e-learning. Mean values on number of computers connected to internet of various types of institutes showed that only 5 computers

were connected to internet in government colleges, 6.80 in private aided colleges and 5.04 computers connected to internet in private unaided colleges. Statistically these were found be equal as revealed by ANOVA.

Frequency and percent responses for the question 'Does the college have an official website?' revealed that on the whole it was found that 93.5% of the colleges possessed official website and only 6.5% of them did not have.

About the installation of servers in colleges, it was found that 42.5% of the colleges installed servers and 54.8 of them did not install.

When responses were elicited for the question 'Does the college have adequate equipment to support the e-learning initiative?', 64.5% of the respondents indicated 'Yes' and remaining 35.5% of them indicated 'No'. Contingency coefficient test revealed a non-significant association between type of institute and responses, indicating a similarity in the responses pattern of Heads irrespective of the type of institute they belong to.

As far as having Learning Management System (LMS) is verified, it was found that 41.9% of the colleges had LMS and 58.1% of them did not have. This pattern was found to be same for all types of institutions as the observed contingency coefficient value of .210 was found to be non significant.On the whole it was found for having Learning Content Management System (LCMS) that 35.5% of the Heads indicated that their colleges have a LCMS and majority of 64.5% of them did not have.

In Human resource readiness questions, for the question on 'having a plan to train staff and faculty members for any new technological skills which are required in the future' are verified, it was found that 45.2% of the Heads indicated 'Yes' and 54.8% of them indicated 'No'. This pattern was found to be same for all types of institutions as the observed contingency coefficient value of .199 was found to be non-significant. It was found that a majority of 77.4% of the Heads indicated that their colleges have a motivated staff and faculty members to implement e-Learning and remaining 22.6% of them did not have.

On the whole it was found that a majority of 67.7 % of the heads indicated that their colleges has a working environment ready for the implementation of e-learning and remaining 32.3% of them did not have. The responses on having resources necessary for the implementation of e-learning' for faculty members and students it was found that 51.6% of the Heads indicated 'Yes' and 48.4% of them indicated 'No'. Heads indicated that 48.4 % of the faculties have necessary skills for the implementation of e-learning and remaining 51.6% of them did not have.

In Budget and financial issue, When responses were elicited for the question 'Does the college have a budget for implementing e-learning?', 38.7% of the respondents indicated 'Yes' and remaining 61.3% of them indicated 'No'.

For having adequate funds for e-learning in colleges it was found that 38.7% of the Heads indicated 'Yes' and majority of 61.3% of them indicated 'No'.

On the whole it was found58.1 % of the college financially ready to venture into e-learning and remaining 41.9% of them did not have.

In psychological readiness to implementation of e-learning it was found thatassessing for learning styles of students and faculty members;48.4% of the respondents indicated 'not yet planned', 29.0% of them indicated 'included in the plan' and remaining 22.6% of them indicated 'completed'.

The responses elicited for transition from traditional to digital issues and advanced management, Heads of the institutions indicated that 48.4% of the faculty members and students accepted most, 41.9% of them just accepted and remaining 9.7% of them resisted. 48.4% of each heads indicated that laptops/home computers and cell phones/pages like high tech devices owned by faculty members and students and remaining 3.2% indicated none. None of them possessed PDA/Hand held devices.

For content readiness ofe-learning implementation, on the whole it was found that 77.4 % of the Heads indicated that competency assessment is required upon completion of instruction and remaining 22.6% indicated 'for some'.

When the Heads were asked about the desired competency goal require improvement of motor skills, a majority of them indicated 'Yes', followed by 32.3% of them indicated 'Some What' and none of them indicated 'A Very Few to None'.

About 9.7% of the Heads indicated that more than 80% of the subject matter is already in Multi Media format, 35.5% of them indicated more than 50%, 41.9% of them indicated less than 30% and remaining 12.9% of them indicated that less than 10% of the subject matter is already in Multi Media format. When the question 'How often does the subject matter change' been asked for the Heads, 32.3% of them indicated 'Regularly', 9.7% of them indicated 'Frequently', 35.5% of them indicated 'Often' and remaining 22.6% of them indicated 'Very Rarely' does the subject matter change.

CONCULSION AND DISCUSSION

In readiness for implementation of e-learning questionnaire it was found that 48.4% of each heads indicated that laptops/home computers owned by faculty members and students which support Kuo (2005)results of the data which indicated that the overall perception of participants on the use of laptops was positive from students.

Based on the findings of Heads questionnaire possessing and accesses to computers and connection to internet in different colleges is statistically same, which supports K.Nachimuthu(2010) study on B.Ed. colleges which the institutions are having at least five computer peripherals.In this study assessing tool for determining thee-Learning readiness for implementation of itin the colleges had three subdivisions which included; ICTInfrastructure,HumanResources, Budgets and Finance, which according Broadley, (2007) successful implementation of the e-learning environment was dependent on the four key factors of ICT infrastructure, ICT leadership, support and training initiatives and the teachers' ICT capacity. So in designing the tool for assessing readiness in implementation of e-learning these components considered askey factors. Findings of our study which assessed readiness of implementation of e-leaning revealed that ICT infrastructurereadiness, human resourcesreadiness, budget and financialreadiness, psychological readiness to implementation of e-learning, content readiness to implementationof e-learning was found to be same for all types of institutions as the observed contingency coefficientto be non-significant and situation in all three kinds were at same level of readiness.

There is no comprehensive institutional or even national strategic plan for E-learningimplementation in the B.Ed. colleges.There are some rare individual initiatives to promote the ICT and e-learning system, but these do notsatisfy the B.Ed. colleges' requirements in this important field.There are no standards clear regulations and procedures on how to implemente-learning in the colleges.There is a gap between B.Ed. colleges and the developed ICT world. The surveyed findings indicated that in order to reduce the gap, MHRD, UGC, NCTEshould create a clear ICT and especially in e-learning implementation plan and allocate enough budget, increase public IT awareness, encourage e-learning investments,increase training courses and promote ICT education in both schools and universities.

This study was conducted to investigate readiness for implementation of e-learning and its needs assessment among colleges of education. The findings from this study provided empirical confirmation of the theory and research reported in the assessing of ICT infrastructure, human resources, budget, psychological and content readiness for implementation of this system in colleges of education which its results indicated the following educational implications:

It can be said that tool and findings of this study are also potentially is beneficial to other teacher training colleges like D.Ed. colleges, PG educational colleges, B.P.Ed. Colleges (and, possibly, even more widely), as they explore the use of e-learning technology in new teaching and learning environments.The findings of the present research could be employed as a trigger by Heads of university and colleges to pay more attention to the e-learning concept, because pace of changing out of schools and colleges is terribly fast and educational system remain behinddigital world caravan.The previous and existing assessment tools available in the market were mostly developed to assess the e-learning readiness implementation of universities, other tertiary institutions, business and commercial organizations were not well-established tools or framework to assess colleges of education purely existed at the start of this research project. Through re-visiting and analyzing the existing literature and the theories underlying e-learning research, I have extended the literature on e-learning in secondary teacher training one year B.Ed. program.

According to standards and regulations of NCTE, the structure of all B.Ed. colleges in whole of India institutionally and instructionally are the same, tools prepared to this research could be useful broadly in state or national level for assessment of e-learning readiness.This study is one the first attempts to determine assessment of e-learning at the teacher training level. Number of Governmental colleges in the affiliated colleges is only one college, so this problem can affect in comparing variables.

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