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PRINT TO DIGITAL: A STUDY OF STUDENTS' PSYCHOSOMATIC COST IN TRADITIONAL AND E-LEARNING

Sarita Kumar[a*] and Ravi Toteja[b]

[a&b]Associate Professor, Department of Zoology, Acharya Narendra Dev College, University of Delhi, New Delhi 110019, India

Abstract

The information age is characterized by the instant access to knowledge that empowers one to compete, grow and succeed. Traditional instructor-led training based on text book learning is a vast and colossal system to gain knowledge. Nevertheless, transition from traditional to e-learning system allows for transformation in educational paradigms and behavior, thus creating a new culture regarding learning and the implementation of technological evolution in education. A survey was carried out among hundred undergraduates, postgraduates and research scholars of Indian Universities to assess the impact of transition from traditional to e-learning on their psychosomatic behavior and reasons thereof. This included the psychological challenges, i.e. stress, nervousness and anxiety, in the students because of the inadequate facilities and infrastructure, apprehensions to adopt a new system, lack of computer literacy and faith on the technology, and any other cause. It was also evaluated whether the students were able to cope up with psychological challenges after imparting training and familiarization with e-learning. Based on the survey the best and most sound method of learning in Indian context was explored.

1. INTRODUCTION

Globalization has made the world more dynamic and highly competitive where a range of educational strategies, new techniques, technologies and knowledge are constantly created and changed. Newer

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* Corresponding author. *E-mail address*: sarita.sanjay90@gmail.com.

digital technologies have been touted as potentially powerful enabling tools for educational change and reform. Hence, academicians face the need to update themselves faster and constantly, which has encouraged distance learning practices (Zerbini et al., 2005). Use of information technology and communication to support continuing educational development, promoting collaborative learning in geographically apart groups has been referred to as e-learning. It is an individual or collaborative/group activity involving synchronous or asynchronous communication processes (Romiszowski, 2004).

E-learning is interactive and promotes self-learning mediated by educational resources; is systematically organized presented through different information technology supports; and offers instructional flexibility (Allen, 2004). It addresses a broad set of processes and applications such as web-based and computer-based teaching, virtual classrooms and digital collaboration. It also includes delivering content through the Internet, Intranet/Extranet, audio, video and radio recordings, through satellite, interactive TV, and CD-ROM (Kaplan-Leiserson, 2000). When used appropriately, different set of tools help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality by making teaching-learning into an engaging, active process connected to real life. However, the experience of introducing different tools in the classroom and other educational settings all over the world over the past several decades suggests that the full realization of the potential educational benefits of these tools is not automatic.

Traditional instructor-led training based on text book learning is a vast and colossal system to gain knowledge. Nevertheless, transition to e-learning system allows for transformation in educational paradigms and behavior, thus creating a new culture regarding learning and the implementation of technological evolution in education. The effective integration of e-learning into the traditional educational system is a complex, multifaceted process that involves not just technology but also curriculum and pedagogy, institutional willingness, teacher competencies, long-term financing and above all students' readiness, among others. The solutions to these challenges can help policymakers in developing countries define a framework for the appropriate and effective use of ICTs in their educational systems.

2. LITERATURE REVIEW

The rapid pace of technological and economic developments has placed greater demands on education systems. The crucial need for students is to focus on the importance of lifelong learning to continuously upgrade their knowledge and skills, to think critically and to inspire creativity and innovation so as to adapt to global change (UNESCO, 2004). The importance of e-learning is widely recognized as a means of enhancing accessibility and quality of teaching-learning process (Cruthers, 2008). It is viewed as a tool to reach marginalized and disadvantaged students, provided Internet connections are accessible. A few reports are available which suggest that online learning supports critical thinking skills, problem-solving, communication and interaction, autonomous learning and flexibility in time management (Cavangaugh, 2001; Swan, 2001; Johnston et al., 2005).

On the other hand, e-learning is also viewed with a great deal of challenges. Though rapid development of ICT provides easier and more affordable connectivity to Internet narrowing the digital divide, equitable access will continue to be a major apprehension. The greatest concerns faced are the non-accessibility of Internet and the absence of required IT skills among a significant sector of individuals. In most countries, e-learning is not considered a study tool for everyone (Kearsley, 2002). It has been reported that despite the fact that online courses provide various opportunities for learners to interact with each other and with their teachers; there is a need to develop and promote e-learning process by enabling learners to become self-motivated, self-reliant and self-managing (Johnston et al., 2005). It is

expected that e–learning should be an affordable and comprehensive learning method. Other problems that need to be attended to, for effective online learning to be actualized includes: poor pedagogy, poor research and measurements, unmotivated staff and inferior online tools (Lee, Kar-tin, 2005).

Since e-learning is about individuals and about using technology systems to support constructive social interactions, it may work best as blended learning in combination with some f2f classroom experience (Cavangaugh, 2001). However, real challenge lies not only in ensuring the fulfillment of certain pre-conditions of accessibility and literacy, but also in changing perceptions of educators towards e-learning. For the success of e-learning implementation, there is a need to acknowledge and assess the importance of willingness of institutions, teachers and learners to adapt this learning style (So and Swatman, 2006). The evaluation of keenness of learners and in turn, the psychosomatic challenges faced by them can help the institutions to identify potential aspects that are necessary to ensure that the design of learning strategies are tailored to meet the learner's needs.

A number of studies have been carried out in various countries to address various issues of challenges in adopting e-learning at various levels. In Turkey, Aydin and Tasci (2005) evaluated four constructs-technology, innovation, people and self-development - to assess the organizational readiness for e-learning. Whereas, Watkins et al. (2004) developed an instrument to measure an individual's perceived readiness to engage in e-learning. The focus points of his study were technology access, online skills, motivation, ability to use online material, participation in Internet discussions and importance to learner's success. Agboola (2006) evaluated the perceptions of staff of post-secondary institutions in Malaysia, while in Hong Kong, primary and secondary school teachers were the main targets of study (So and Swatman (2006). Earlier, Schank (2002) gave seven methods of assessing e–learning programme- Failure, Reasoning, Emotional, Exploration, Doing, Observation and Motivation - using the acronym "FREEDOM". He explained these as follows:

- Failure – The students should learn from their mistakes.
- Reasoning – They should be involved in deliberations in order to apply their knowledge to real life situations.
- Emotional – Course materials should provoke emotional response from students.
- Exploration – This should help to provide a more engaging environment for learners.
- Doing – The learner should be given the option to learn in his or her own way or own time.
- Observation – This includes the provision of diagrams, charts and other visual aids.
- Motivation – Student should have a feeling of being able to personally relate to the material and its value. They should not be motivated only to pass the test or examination alone.

It was further reported that the course designer should strive to create a deeper motivation in learner for them to learn new skills and transfer those skills back in to work environment (Lee, Kar- tin, 2005).

3. METHODOLOGY

Our study adopted the survey method conducted among hundred undergraduates, postgraduates and research scholars of Indian Universities to assess the impact of transition from traditional to e-learning on their psychosomatic behavior and the reasons thereof. The study examined various psychological challenges, i.e. stress, nervousness and anxiety, in the students, which may arise because of inadequate facilities and infrastructure; apprehensions to adopt new system; lack of computer literacy and faith on the technology; and any other cause. It was also evaluated whether the students were able to cope up with psychological challenges after imparting training and familiarization with e-learning. Based on the survey the best and most sound method of learning in Indian context was explored.

The survey Instrument used was an online questionnaire, which was uploaded and can be viewed at https://docs.google.com/spreadsheet/viewform?hl=en_US&pli=1&formkey=dHltT0J2V3gtUGZjRmRVZ

jVlcDY2ZXc6MQ#gid=0. The study was conducted from July 28, 2011 to September 10, 2011. The questions had a 5-point scale (indicating 1 = Can't Say, 2 = Don't agree, 3 = Somewhat agree, 4 = Agree, 5 = Strongly agree). It was divided primarily into two sections: biographical Information of students and questions examining students attitude to e-learning, willingness and issues related to adopt e-learning and psychological challenges faced by them to adopt e-learning. The Instrument contained 16 questions in all, each containing different number of parts. The target group in the study, as said earlier, was the undergraduate, postgraduate and research students.

The survey link was send to different Universities to cover students of different streams, region and religion. The data was collected, compiled and analyzed to comprehend and evaluate the views and problems faced by the Indian students to adopt new teaching-learning methodology.

4. RESULTS AND DISCUSSION

The summarized data of our study is presented and discussed below. Table 1 depicts the respondents' profile in terms of their sex, age and study level. The profile indicates that 47% of the respondents' were females while 53% were males. The majority of the respondents" surveyed (69.1%) fall within 19-24 years age range. Whereas, 18.5% respondents' were between the 25-30 years range, 8.7% were above 30 years old whereas only 3.7% were less than 19 years of age. Most of the respondents' are pursuing their graduate programme (45.6%), while 30.9% respondents" are studying in Master's programme and 17.3% are in research field while 6.2% have finished their studies and are either preparing for higher studies or are in search of jobs (Fig. 1).
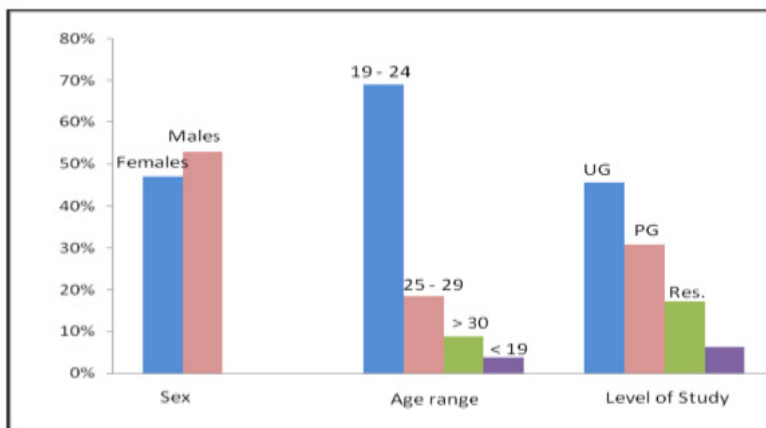

Fig. 1. Profile of the respondents

The result further revealed that only 15% students preferred pure digital learning while 33% favored traditional learning. The mode of study through video conferencing was also opted by only 15% (Fig. 2). Nevertheless, the data shows that majority of students (37%) wanted to adopt blended learning through combined method of learning. The noticeable finding was that irrespective of the preferred mode of learning, 70% respondents' agreed that e-learning has a number of advantages in terms of – greater efficiency in teaching (61%), flexibility in time management (60%), more onus on learners (65%), a way to reach remote areas (76%) and a mode to reach a greater number of students (81%). This clearly shows that there was a 47% increase in the readiness of students to adopt e-learning.
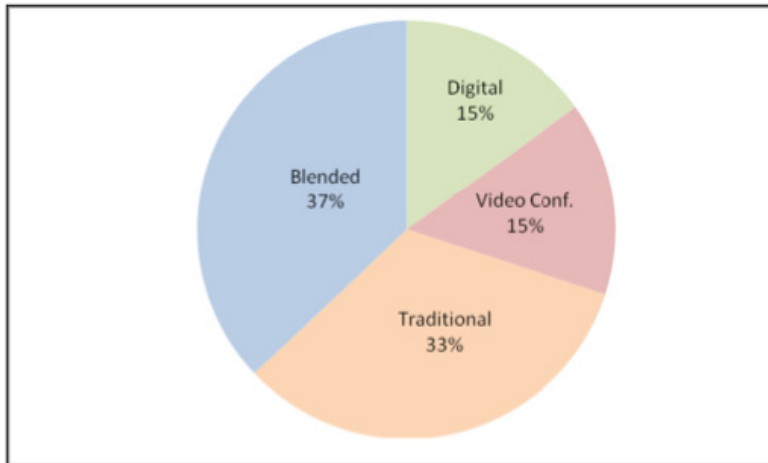
Fig. 2. Percentage students with preferred mode of learning

The data collected about the students' reservations in adopting e-learning teaching methodology revealed the following major reasons (Fig. 3) - lack of interaction with teachers for problem solving (72%), absence of teamwork (69%), fragmentation of work (58%), inadequacy of monitoring (63%), secondary importance to real life applications (64%), superficial teaching (50%) and fear of disparity between students (50%). The survey regarding prime challenges faced by students in adopting e- learning teaching methodology indicated the main challenges as financial constraints (78%); and inadequate infrastructure at institution (84%) and home (76%). Other challenges that appeared to concern students were unsuccessful implementation of new methodology (75%), lack of computer literacy (68%), insufficient technical staff (66%) and absence of motivation (50%). This study clearly suggests that if these problems of students were addressed in a proper way, they would like to switch from traditional to e-learning in a major way.
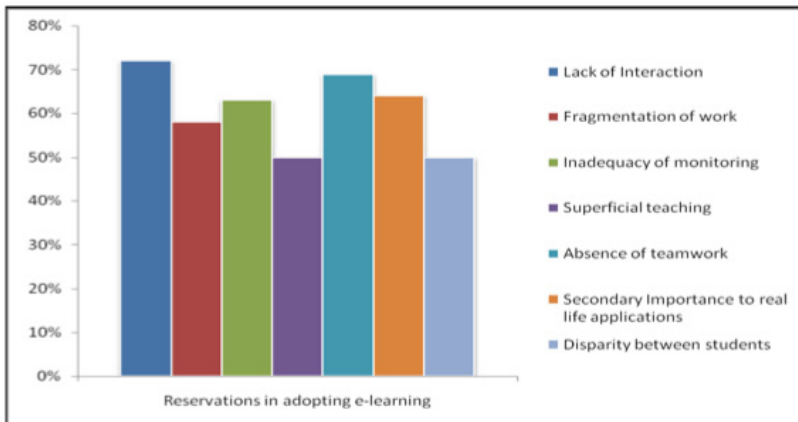

Fig. 3. Percentage students with preferred mode of learning

Another remarkable finding in present study is that in most of the students' view, 70-90% of the faculty members of their respective institutions have apprehension towards adopting new methodology.

According to them the teachers prefer traditional teaching (chalk and talk) and categorize e-learning more as research rather than teaching. As a result, habitually students also prefer to study in a traditional way and view e-learning as an additional tool which has the entire onus on them. Further, the study also revealed the distressing fact that implementation of new technologies in the institutions despite of inadequate infrastructure and the unprepared transition from traditional learning to e-learning is causing various psychological challenges in students (Table 1).

Table 1. Psychological challenges faced by students in transition from traditional to *e-learning*

S. No.	Challenges faced to adopt e-learning	Psychological Impact	% agree
1.	Poor access to facilities at institution	Concern	76
2.	Lack of facilities at home	Tension	76
3.	Unable to use facility at Cyber Café	Stress	70
4.	Inability to complete assignments in time	Fear	66
5.	Creates divides in the class	Pressure	57
6.	Lack of interaction among classmates	Strain	58
7.	Enhanced competition between friends	Unease	58
8.	Financial constraints	Stress	66
9.	Lack of interaction with teacher	Concern	83
10.	Enhanced communication gap with parents	Distress	58
11.	Unable to deliver in time	Anxiety	61

Our survey showed that the major concern and tension among majority of students (76%) is poor access to e-learning facilities at institution and home. Lack of adequate infrastructure, poor bandwidth, insufficient number of nodes at institution and frequent electricity failures are adding to these concerns. Another major factor causing stress in 70% of students is the inability to use facilities at Cyber café because of financial constraints resulting in failure to complete assignments in time. Unable to deliver work by only a segment of students in turn is creating fear (66%) and divide among students (57%). However, it was also revealed that these persisting constraints are not causing strained relationships among friends. However, lack of interaction with teachers has aroused concern among 83% respondents'. The astonishing fact revealed by our study is that new method of teaching is enhancing communication gap with parents in 58% students leading to loss of faith and causing distress. The probable reason behind this may be due to lot of time spent on understanding new methodology, completing assignments and working online most of the times.

5. CONCLUSION

This study has shown that combining online and traditional classroom approach as a blended learning offers an effective way of learning. It suggests that students in a traditional class can be assigned both print-based and online materials, have online mentoring sessions with their teacher through chat, and can be subscribed to a class e-mail list. Alternatively a web-based training course can be enhanced by periodic f2f instructions. "Blended learning" was prompted by the recognition that not all learning is best achieved in an electronically-mediated environment, particularly one that dispenses with a live instructor altogether. Instead, consideration must be given to the subject matter, the learning objectives and

outcomes, the characteristics of the learners, and the learning context in order to arrive at the optimum mix of instructional and delivery methods.

The study has revealed that e–learning has become an important part of our academic culture and majority of students, despite its disadvantages, would like to adopt it. It suggests that there is a scope for its wider use by educational institutions in future, as we experience more technological development in the field of Information Technology. However, there are various measures that need to be taken in order to ensure its effective adoption in our educational programme. The following recommendations are therefore suggested:

- E-learning should be effectively implemented so as to achieve its objective, as a qualitative and effective learning method;
- It is expected that e–learning should be an affordable and comprehensive learning method (Lee, Kartin, 2005). Educational institutions contemplating the adoption of e–learning should not be discouraged because of the initial substantial costs often associated with online programme, most especially at the developmental stage. This initial investment will yield better result if given close monitoring and it will subsequently become successful;
- The emotional needs of students regarding the use of e–learning should be met, most especially those who are using the computer and the Internet for the first time and feel frustration in using e–learning method of study. Taking care of the interest of this category of students will ensure the creative use of the e–learning method;
- A collaborative online learning environment should be created so as to enable students to get opportunities to exchange ideas and information. This will solve, to a lesser extent, the problem of interaction commonly associated with the online method;
- There is a need for online instructors and teachers to update their knowledge about the latest online teaching. This will help to cater the problem of poor investment in staff and technology.

In conclusion, this study has to certain extent shown that e–learning offers a better prospect in future if the problems of learners raised in the study are addressed. It is hoped that the study will be of benefit to online instructors and Educational Institutions in designing an effective online programmes for both the students and staff.

Acknowledgements

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