

Technology Enabled Learning: Perspective of University Students

Jayashree Shinde
Head, Department of Educational Technology
SNDT Women's University
Juhu Road, Santacruz (W), Mumbai 400049, India

Abstract

Integration of technology in teaching-learning practices of any University is a systematic transformational process. Establishing a policy is the first step of this process. This will be followed by its systematic implementation. SNDT Women's University, Mumbai, India has successfully prepared "technology-enabled learning policy" by following a bottom-up approach. Baseline study of University stakeholders' views and perception was planned at the initial stage. Perspectives of students was the crucial aspect in this study. Student sample was selected using stratified random technique. Students represented all 15 faculties from three campuses which house 39 Post Graduate departments and 13 institutions including undergraduate colleges. The survey revealed students' perspective about technology integration in learning. Almost all students show preference for technology enabled learning. They demand wi-fi access on the campus. As 86% students have smart phones in their hand, they prefer it as a learning device. They suggest use of online learning platform, access to web-based learning resources and social media as learning environment. Students perceive long lectures as boring and mentally stressful. Recorded videos, synchronous online interactions with guest experts are felt as essential. Open access to learning material, international journals, ebooks, etc. is demanded. Students feel that technology enabled learning helps them get ready as global citizens. University students strongly demand BYOD facility across campuses to access worldwide quality education resources. The study of students' perspectives provides insight for planning ICT infrastructure and for designing technology enabled learning activities across the disciplines.

1.0 Background

The term "Technology Enabled Learning (TEL)" consists of three words which are equally significant. "Learning" is the central theme as all academic activities in the university are organized around this theme. "Technology" especially refers to Information and Communication technologies which are becoming user-friendly day by day and also converging at a fast speed. Technologies have changed the face of teaching-learning process. It has literally made the education "upside down" by introducing "flipped learning". It has made teachers aware about the needs of the learners and also about the tools which can fulfill those needs or at least address those needs in more humane way. The institution needs to provide infrastructure (computer labs, connectivity), software, trained teachers, learning resources like databases of journals, e-books etc. for enabling the process of learning so that the learners take the responsibility of his/her learning and learns.

Information and Communication Technologies (ICTs) have presently become all-pervading and have entered university life to a great extent. ICTs have challenged the conventional strategies of teaching and have supported learner-centred learning to a great extent. Teaching, learning and evaluation/assessment have been influenced by ICTs.

Many studies have been done on user acceptance in terms of their perception and attitude towards ICT, its use and importance. The studies have been conducted across the continents Buabeng-Andoh, C. and, Yidana, I. (2015) in Ghana, Handan W. (2013) in USA, Moshki, M.K., et.al. (2013), Makura, A. (2014) in South Africa, Kinaanath, M.

(2013) in Maldives, Masino, M. in West Indies, Martin, G. (2010) in Norway show the importance of understanding learners' perception and attitude in their acceptance of ICTs for teaching-learning. Rhema, A., & Miliszewska, I. (2014) studied students' attitude towards e-learning in Libya. A study by Chia, S. P. (2016) investigated the connections between teachers' and students' perceptions of, and attitudes towards, the use of Information and Communications Technologies (ICT) to support assessment in senior secondary courses in Western Australia, and the feasibility of such support in various forms. The study conducted by Suri, G. & Sharma, S. (2013) aimed to understand the relationship between gender and attitude towards e-learning. Their study was conducted on students of Punjab University, Chandigarh.

2.0 Purpose of Study

SNDT Women's University considers ICTs as a game changer for the higher education and rightly so. For the last five years, systematic efforts have been made to introduce ICTs in teaching, learning, evaluation and the student life cycle from online admission to result announcement. Appropriate infrastructure is created, three campuses are connected and Intranet portal is created on the VPN, computers and software are purchased, teachers are trained to integrate ICTs.

All these efforts were part of a big picture. A strong Policy for Technology Enabled Learning, to guide all efforts was needed. Commonwealth of Learning (COL), Canada shared this vision and came forward to support this TEL Policy Development project.

In order to prepare a policy document, first and foremost requirement was to know the status. Not just number of computers and labs, but the attitude, perception, extent of use of ICTs by teachers and learners both. A Baseline Study was therefore conducted with the major purpose of understanding the status about TEL processes instituted in the university and stakeholders perception about the same. The study was conducted in collaboration with COL. Based on the Report prepared for developing TEL Policy for the University, this paper brings out various aspects of learner perspective towards use of ICTs.

3.0 Objectives

The study was conducted with following objectives:

1. To study the access and use of ICTs by the learners
2. To study perception of learners about the use of Technology enabled Learning.

4.0 Methodology

The present study aimed at finding out the status about ICT use, ICT integration and also attitude of teachers and learners towards ICT. Hence a Survey method was employed for the study.

Data Collection Tool: The study used a questionnaire for learners. This was developed by the COL (Kirkwood and Price, 2016). There were 4 sections in this questionnaire: Background Information of learners, Access and Use of Information and Communication Technologies, Perceptions of Use of Technology-Enabled Learning and Comments.

Sample: Sample of Undergraduate and Post graduate students on 3 campuses was selected using Stratified Random Sampling procedure. A total of 775 responses were received. The number of responses varied per question as some learners skipped some of the questions. As per distribution of the population, 25% learner sample was from Pune campus, and 37% each from Churchgate and Juhu campuses.

Detailed description of the learner sample is presented below.

Gender and Age: Since it is a Women's University, entire sample consisted of women. Nearly 49% sample was below 20 years whereas 45% were below 25 years. It is remarkable that 3.6% learners above age of 31+ year.

Level of study: Nearly 32% learners were from graduate programmes and remaining from under-graduate studies. Batch-wise distribution was almost equal proportion to the population distribution. This was because stratified random sampling technique was used. The same is true about faculties.

Faculty Discipline: Sample represents 14 faculties. Nearly 40% learners were from Arts and Commerce faculties, 28% from Technology and 10% from Home Science. The rest were from faculties of Science, Education, Fine Arts, Library and Information Science, Management Studies, Social Science, Social Work and Communication & Media Studies.

Disability area: About 8.5% learners mentioned that they had one or more physical or learning or both disabilities. 2.5% mentioned about physical disability, 1.9% claimed of having learning disability and 1.8% sample mentioned about both. Seventeen learners chose not to answer.

5.0 Access and Usage of technology

The study aimed at finding availability of and access to technology. Questions about learners' own devices, available devices, internet facility on campuses and frequency of learners' usage were asked. Findings from this section were felt significant while interpreting perceptions of the learners regarding TEL.

Devices owned by the learners: Data revealed that about 50% learners possess laptops, 44% have desktops at home and **81% learners carry smart-phones**. The data has an implication that use of smart-phone for teaching-learning will benefit learners.

Access to Internet: Learners access internet at different places. Nearly 88% learners have internet access at home and about 23% learners use cyber-cafe for internet. Only 3% learners claim that they do not use internet at all. About 49% learners have wi-fi access. More than 75% learners use their smart-phones to access internet. Hardly 11% learners use desktops and 13% use laptop for internet access.

Frequency of use of internet connectivity: About 45% learners get access to broadband internet connectivity in libraries and 25% learners have access in labs. Hostel learners have access in the hostels. About 16% learners have access inside their classrooms. Nearly 38% learners get wi-fi access on the campus. Learners accessing internet daily are 78%. Only 0.7% learners do not access internet.

6.0 ICT Skill-set and access of Learners to technology platforms

Computer proficiency and information technology skills: Only about 10% learners report lacking of skills in Word processing, presentations and emails. 51% learners are well-versed with emails and 45% can use search engines well. Three fourth of the learners are well-versed with Web 2.0. 6% learners are comfortable with LMS which means their teachers are using LMS for pedagogical support.

Presence on Social Media Platforms: 82% learners are on social media platform. About 81% of the learners are on Facebook while 54% use Google Plus. About 35% learners use photo-sharing platforms. About 80% learners access these platforms (mostly Facebook and/or WhatsApp) at least once a day.

Participation in online course: Only about 26% learners claim that they have done online courses. About 68% learners confessed that they had not heard the term 'MOOC'.

This section shows that the learners on three campuses have access to technology to a great extent, they are also aware about the presence of technology, they use technology may be for personal use, creating network among the friends.

7.0 Attitude and Perceptions of learners towards use of ICTs in learning

Learners' attitudes and perception about integration of technology in teaching-learning was surveyed. The data is presented in the following paragraphs.

a. Attitude towards use of ICT in learning

Learners were asked to rate the statement “I want to use technology in my studies because...” about technology use in their studies. Data sought through this question is presented in table 1.

Table 1
Demonstration of attitude towards use of ICT in learning

Answer Option Categories	Strongly Agree/ Agree	Neutral	Disagree
a. Better results in subjects	92.0	4.8	3.2
b. Understand the subject material more deeply	91.8	4.7	3.5
c. Completing work in subjects more convenient	88.1	8.4	3.5
d. Motivates me to explore many topics	89.2	5.3	5.5
e. Allows me to collaborate with others easily	82.9	10.3	6.8
f. Improve IT / information management skills	86.4	7.7	5.9
g. Improve career or employment prospects	87.9	7.5	4.7

About 85-90% demonstrate positive attitude about learning through technology. More than 90% students feel that TEL will provide them opportunity to gain better learning, better results by helping them to understand content effectively. TEL is felt as motivating factor by about 89% students.

Collaboration with others is not experienced as learning mode, hence 10% learners seem to be neutral and more than 6% disagree with this possibility. Though 88% students agree to this role of ICT, clear idea about ICT's role in collaborative learning will be possible once teachers give hands-on experience to learners.

b. Motivation level of learners towards technology enabled learning

A series of items to know motivation level of learners towards technology enabled learning was included in the questionnaire. Data gathered from these 15 items is discussed below.

About 65-70% learners are sure about benefits of TEL and are motivated to use TEL. When presented negative aspects such as security issues and distraction factor, nearly 59% agreed with technology as an interfering factor.

Though 60% learners claim that they were technologically skilled to use TEL while entering into the learning situation, 70% feel technology connects them with teachers, learners and the external world. About 30% learners could not judge themselves for technology competence. Even 27% learners are not able to decide about negative aspects of technologies and tools such as mobiles and social media. Almost one third of learners feel that they may skip classes once online resources are made available, the same proportion of learners reject this possibility and the same proportion is neutral or ignorant about this possibility. Positively, only 14% do not find TEL beneficial and 7% are not able to decide. We can conclude that the major proportion of learners are positively motivated towards TEL.

c. Usefulness of ICT in Learning

Opinions of learners regarding various uses of TEL were also studied. Use of audio/video resources, facility to download these resources gains preference by most of the learners whereas they are yet not sure how effective blogging or micro-blogging can be. 27% learners are not aware of the concepts such as dashboard or ePortfolio and less than 55% feel these platforms useful in learning. Overall more than 20% learners are either ignorant of technology tools or else cannot pose any opinion. About 10% average learners do not find TEL as a useful mode of

learning. These 10-12% learners would be the major challenge while implementing TEL. This implies that the university will have to plan for orientation / awareness workshops for 25% of the learners.

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Sixty percent learners felt that there should be TEL policy. Keeping in mind proportion of undergraduate learners and the nature of comments sought for justifying learners' views, it can be concluded that majority of the learners lacked knowledge of 'policy'.

8.0 Comments and suggestions by the learners

A question was asked for comments and their views about "Technology Enabled Learning (TEL)". The statement "There is a need to improve technology-enabled learning environment in your university. Comment" was given.

While commenting, 61% learners commented about the use of TEL. Only 1.4% learners mentioned that there is 'no need' and two mentioned that learning by books is better. Some learners (28: 3.6%), mainly from technology, computer science and educational technology, felt that they already have adequate use of ICTs.

Most of the students have expressed opinion that TEL is required. Most of them (222 learners) mentioned that TEL should be introduced properly. Some learners have categorically demanded improved infrastructure for TEL.

Learners have mainly demanded improved infrastructure, internet connectivity, access to wi-fi and online resources. Technology-enabled classrooms are also demanded by some learners. Many learners have commented on the need of TEL for global readiness. Some learners claim that their University is technologically advanced and uses ICT integration in education, whereas some learners claim that the University needs to improve a lot. Different aspects of TEL environment are brought out by different learners in their comments. Need of online databases, e-resources, uploaded sessions, learner cycle management system, etc. are highlighted by some learners. The overall comments reveal learners' demand for TEL. Following are a few significant comments by learners.

- We live in a digitalized world and hence we should have access to information from any place. It will be useful if we all are provided with E-books, Recorded lectures, and more of technology learning sessions.
- It could help students related to studies e.g. reference of e-books, getting worldwide research articles as well as various PhD thesis. Currently ProQuest is accessible, but we would like to go for Wiley - Blackwell as well as Cambridge University Press. It will help us to study our subjects very deeply.
- As far as my department is concerned, we are satisfied with facilities provided, however not every department in my university is that lucky. Concept of BYOD strongly needs to be implemented throughout the university, especially with free wi-fi in library.
- Technology helps the learner to explore more about the content/topic/subject. The resources available online can be easily accessible hence allowing the learners to have a clear and more detailed information about the subject. Also with the help of technology, we can change the monotonous learning with audio/ visuals and presentations. The learning is changing and emerging from traditional classrooms of textbooks and black boards to blended or online learning with modern smart boards and virtual learning.
- My university is one of the leading institutions for using ICT in learning. I am satisfied with the technologies available in my department.
- I feel there should be compulsory certificate level course given to students about the topics which have been covered in this survey.
- Internet services, online accesses to e-journals, teaching to use various technologies can help hone skills of students and put us on par with global students.
- Technology creates transparency in each and every process. It also opens doors to the world of knowledge by removing geographical barriers and providing easy access to information.
- It would be convenient and transparent if the procedures and result sharing in the university are centralized and made available on the net, also a personal dashboard on the university or college website that would keep track

of my scores and achievements would be awesome. Updating videos and information about courses and lectures would be very handy for genuine learners, and would be appreciated by them.

9.0 Conclusion

As mentioned in the Background above, universities, institutions find it significant to understand the attitude and perception of learners towards Information and Communication Technology (ICTs) before they think of introducing/integrating it in teaching-learning process. ICTs have become essential part of our life and especially so for the young generation. Many other studies worldwide have shown that the university learners have positive attitude towards using ICTs for teaching-learning process as well as in assessment. These results will be useful in planning ICT interventions in higher education.

The results of the study conducted by Suri, G. et.al. (2013) on Punjab university students, showed that no significant relationship exists between gender and attitude towards computer and e-learning. The usage of various e-learning forms also showed a non-significant relationship with gender. These findings are quite significant for the present study also as it was conducted on all women learners.

On the basis of encouraging results of the study, the University has developed its own TEL Policy, which will guide all academic activities in the university. As a follow up of the development of TEL Policy, one Capacity building workshop was organized for the faculty. Plan for further initiatives in the direction of TEL implementation is being finalized. SNDT Women's University values role of Commonwealth of Learning in supporting this initiative.

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