TECHNOLOGY FOR PROFESSIONAL DEVELOPMENT OF TEACHER

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ABSTRACT

Education in the 21st century will find it difficult to survive without creating space for diversity within the curriculum as well as student & faculty bodies. The role of faculty will change from being an information provider to becoming a mentor, facilitator and co-learner. There was a time when the world was big and also slows in changing but time has come that the world is small and quick in wearing a new garb. The boundaries & the barriers among the nations have vanished. The whole world has shrunk into a small village. The process of globalization has brought people close to one another and as such, the challenges in life have multiplied. A student is no longer a citizen of his/her own land. S/He is a world citizen. So s/he has to be taught trained & developed from larger perspective of globalization. Information & Communication technology (ICT) an interdisciplinary domain focuses on providing student with the tools to transform their learning and to enrich their learning environment. Now a day we have number of ICT tools which we can use for professional development of teacher e.g. skype, Moodle, slide share, wikies, blogs etc. This paper also focused on various web 2.0 tools for 21st century teachers.

Keyword: -, *Information and communication technology, Globalization, Learning*

1. INTRODUCTION

Higher education in the 21st century will find it difficult to survive without creating space for diversity within the curriculum as well as student & faculty bodies. The role of faculty will change from being an information provider to becoming a mentor, facilitator and co-learner. There was a time when the world was big and also slows in changing but time has come that the world is small and quick in wearing a new garb. The boundaries & the barriers among the nations have vanished. The whole world has shrunk into a small village. The process of globalization has brought people close to one another and as such, the challenges in life have multiplied. A student is no longer a citizen of his/her own land. S/He is a world citizen. So s/he has to be taught trained & developed from larger perspective of globalization. Information & Communication technology (ICT) an interdisciplinary domain focuses on providing student with the tools to transform their learning and to enrich their learning environment. The knowledge, skills, behaviors identified for this domain enable student to develop thinking & learning skills that produce, creative & innovative insights; develop more productive ways of working and solving problems individually and collaboratively; create information products that demonstrate their understanding of concepts, issues relationship & processes; express themselves in contemporary and socially relevant ways; communicate locally and globally to solve problems; share knowledge and understand the implications of the use of ICT and their social and ethical responsibilities as uses of ICT.

Educational system all round the world are under increasing pressure to use ICTs to reach students the knowledge & skills they need in the 21st century. The UNESCO (1998) The World Education Report on "Teachers & Teaching in Changing World" describes the radical implication that information & communication technologies have for conventional teaching & learning. It predicts the transformation of teaching learning process & the way teachers & learners gain access to knowledge & information. It states,

To effectively harness the power of the new Information & Communication Technologies (ICTS) to improve learning, the following essential condition must be met:

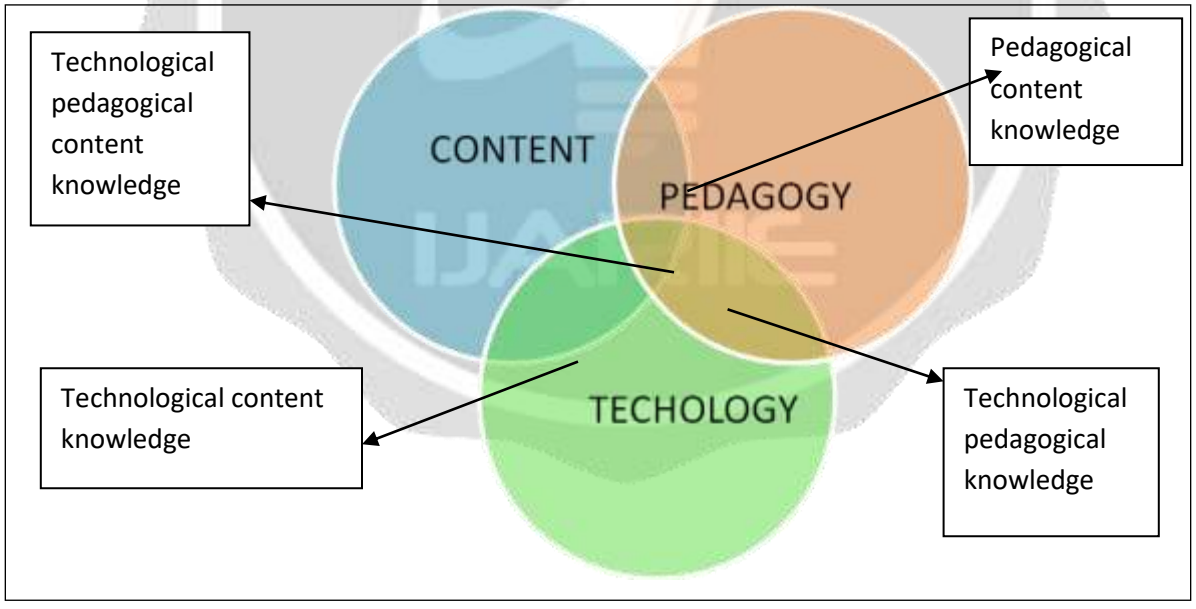
- Student & teachers must have sufficient access to digital technologies & the internet in their classrooms, school & teacher education Institutions.
- High quality, meaningful & culturally responsive digital content must be available for teachers & learners.
- Teachers must have the knowledge & skills to use the new digital tools & resources to help students to achieve high academic standards.

1.1 Necessary training to be provided to empower teachers

Quality of education has to be global and the educational standards have to be raised at all levels and made comparable with the best in the world. So the system needs to be preparing such man power that can face the challenges of this changing world scenario where technology touches every aspects of life. In order to explore the potential of information technology it is necessary to enhance the awareness among the intended users, which can be created among teachers by designing special courses to offer them for providing training and education in different area of educational and information technology.

Teacher being a pivot in the process of teaching learning knowledge of ICT and skills to use ICT in teaching learning has gained immense importance. Teacher is expected to know successful integration of ICT into his/her subject area to make learning meaningful. This knowledge development training has gained much importance with the notion that exposure to ICT is helpful to increase student teachers willingness to integrate it into their classroom.

In order to make the teaching learning process effective teacher should not only know about a particular technology but should have a proper knowledge to integrate technology, pedagogy and content. Merely using technology will not be helpful rather it is required that teachers use technology in the right context. True integration of technology is to understand and thereby negotiate the relationship between three components viz., content, pedagogy and technology. Good teaching is not simply adding technology to the existing teaching and content domain. Rather, the introduction of technology causes the representation of new concepts and requires developing sensitivity to the dynamic, transactional relationship between all three components suggested by TPCK (Technology Pedagogy Content knowledge) framework (Koehler 2005).



Source: Koehler, Mathew J., Mishra Punya (2005)

Although pre-service teachers do have a degree of knowledge with regard to information and communication technologies (ICT), "they have little know-how or techno-pedagogical ability with which to integrate those technologies into their teaching practice" (Karsanti, 2001, 35). Preparing teachers to use technology effectively is a major area of concern for teacher education. Effective technology use includes such activities as linking curriculum outcomes with various technologies, establishing a learning context of discovery and process in the use of technology, collaborating with others both face-to-face and virtually to achieve learning outcomes, simulating real-world environments, and assessing outcomes.

Thus there is a need felt that every teacher education institutions gives enough training about theoretical and practical know how of ICT and to integrate the same in their teaching. The authors feel that certain point needs to be taken care while providing pre-service training to student teacher. Some of them are:

- Student-teachers need to be trained to find and use appropriate stored information, with the help of ICT based models, create sequences of instructions, plan and control devices and achieve specific outcomes, generate, develop and organize their work and evaluate.
- Student-teachers should be enabled to identify appropriate and inappropriate media from curricular and technical perspectives and the advantages of media combination. "When teachers are not given a say in how the technology might reshape schools, computers are merely souped-up typewriters and classrooms continue to run much as they did a generation ago". (Cuban, 2003).
- Student-teachers should be trained to select appropriate information sources and ICT tools to prepare educational kit for dealing with specific tasks taking into account ease of use and suitability in relation to the content area of subject matter.

2. VARIOUS WAYS TO INTEGRATE ICT

The UNESCO planning guide for ICT in teacher education (Resta, 2002) quotes three key principles for effective ICT development that were put forward by society for information technology and teacher education (SITE)

- The first principle is that technology should be infused into the entire teacher education programme meaning that ICT should not be restricted to a single course but needs to permeate all courses in the programme.
- The second principle is that technology should be introduced in the context according to this principle, particular ICT applications like word processing, databases, spreadsheets and telecommunication should not be taught as separate topics but rather encountered as the need arises in all courses of the teacher education programme.
- The third principle is that students should experience innovative technology supported learning environments in their teacher education programme. This requires that students should see their lecturer engaging in technology to present their subjects for example utilizing power-point or simulations in lectures and demonstrations. Students should have the opportunity to use such applications in practical classes, seminars and assignments.

The million dollar questions which rise over here are

- When we talk of integrating ICT in teacher education, the teacher educator needs to be oriented in the areas of ICT. But the question here is with a huge backlog of ICT untrained teacher manpower how to accomplish this task? Can we use ICT to overcome this?
- What mechanisms should be adopted to make ICT adaptable?
- How can one keep pace with growth of ICT?
- How can one handle the problem of obsolescence?
- How can one tune the instrument (education) to adequately respond to such requirement?
- If teachers are using ICT only to some extent then to what extent students must be using ICT for their educational purpose?

In order to overcome above mentioned problems, here authors have suggested some of e- resource which might be solution for it.

2.1 Readymade power-Point Presentations and Web Pages

Being teachers and teacher educators, we need to link our lessons with latest knowledge in our fields. Content from the web is doing wonders for us. Readymade power point slides gives us opportunity for action research. These power point slides and special web pages are helpful in providing updated matter to the students and in a better understandable in a time saving form. Also, students can be encouraged to go for searching power - point presentations for the technology based lesson plans they need to transact and also for their future professional life.

Most reliable site for this is slideshare.com, you just have to become a member of this site, which is free of cost, than you can download as many power point presentation as you wish.
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2.2 Podcasts

A podcast is a series of digital media files (either audio or video) that are released episodically and often downloaded through web syndication. The word usurped webcast in common vernacular, due to rising popularity of the iPod and the innovation of web feeds. The mode of delivery differentiates podcasting from other means of accessing media files over the internet, such as direct download, or streamed webcasting. A list of all the audio or video files currently associated with a given series is maintained centrally on the distributor's server as a web feed, and the listener or viewer employs special client application software known as a pod catcher that can access this web feed, check it for updates, and download any new files in the series. This process can be automated so that new files are downloaded automatically. Files are stored locally on the user's computer or other/device ready for offline use, giving simple and convenient access to episodic content. Podcast provides video and audio continuing education materials to teachers participating in staff development activities and courses.

2.3 Skype

Skype is a software application that allows users to make voice calls over the Internet. Calls to other users within the Skype service are free, while calls to both traditional landline telephones and mobile phones can be made for a fee using a debit-based user account system. Skype has also become popular for its additional features which include instant messaging, file transfer, and video conferencing. It provides teachers with opportunities to talk to other teachers and facilitators to share and reflect on staff development activities using the Internet. Even with the help of skype, teachers can communicate with students and parents and try to infer the student's backgrounds and solve the problems of students. Skype can also be used to get the expertise knowledge of a teacher staying abroad and there can be two way audio and video communication possible, thus it can be helpful in enriching student's at any part of the world. Even teachers can communicate with other personnel, who do not belongs to the field of education, but might be helpful in teaching learning process. e.g. a psychologist, a counselor, a administrator and so on.

2.4 Web Blogs

A blog is a user-generated website where entries are made in journal style and displayed in a reverse chronological order. The term "blog" is a mingling of the words web and log. Blogs provide comments or news on a particular subject, some function as more personal online diaries. The modern blog evolved from the online diary, where people would keep a running account of their personal lives. Most writers called themselves diarists or journalist. Blogs can be hosted by dedicated blog hosting services or they can be hosted using blog software, such as Word Press, Movable Type, Blogger or Live Journal, or on regular web hosting services, such as Dream Host. Many blogs provide commentary or news on a particular subject: others function as more personal online diaries. A typical blog combines text, images, and links to other blogs, web pages, and other media related to its topic. The ability for readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art (art log), photographs (photoblog), sketchblog, videos blog, music (MP3 blog), audio (pod casting) etc. and have become wider network of social media.

2.5 Moodle

Moodle (abbreviation for Modular Object-Oriented Dynamic Learning Environment) is a free and open-source e-learning software platform, also known as a Course Management System, Learning Management System, or Virtual Learning Environment (VLE). Moodle was originally developed by Martin Dougiamas to help educators create online courses with a focus on interaction and collaborative construction of content, and is in continual evolution. It

provides a virtual learning environment that allows facilitators and certified trainers to develop and conduct staff development for teachers. Even Moodle can be useful for : Discussion forum, Assignment submission, Files download, Grading, Moodle instant messages, Moodle instant messages, Online calendar, Online news and announcement (College and course level), Online quiz, Wiki Developers can extend Moodle's modular construction by creating plugins for specific new functionality. Moodle's infrastructure supports many types of plug-ins:- activities (including word and math games), resource types, question types (multiple choice, true and false, fill in the blank, etc.), data field types (for the database activity), graphical themes, authentication methods (can require username and password accessibility), enrollment methods, content filters. Many freely available third-party, Moodle plugins make use of this infrastructure.

2.6 wikis

It allows teachers to participate in continuing education staff development opportunities offered by certified trainers within or outside the school district, along with classroom applications for Wikis. Wikis are websites which can be edited by anyone the owner allows. In this case, teachers allow their students to edit class Wikis. Wikis are more versatile than a class blog, because blogs are typically one way communication and Wikis are updated by teachers and students. Wikis are a free teaching and learning technology tool for teachers to use in education settings. Wikis have become very popular in education since 2006. There are currently over 100,000 registered education Wikis. Education Wikis come with an upgraded membership, worth $50 annually, for teachers. The upgraded membership also eliminates advertisements and allows the ability to restrict public viewing. To support the demand for Wikis in education, Wiki spaces (the developer) is now offering 250,000 education Wikis with the upgraded membership to teachers. Services include the ability to upload documents, pictures, videos, and more by teachers and students.

2.7 Text Chat

Internet Relay Chat (IRC) and other online chat technologies allow Users to join chat rooms and communicate with many people at once, publicly. User may join a pre-existing chat room or create a chat room about any topic. Whether you are in another person's chat room, or one you've created yourself you are generally free to invite others online to join you. This facilitates both one-to-one communication and many-to-many interaction.

2.8 Readymade Programs / Software

Specially made software could be downloaded from Internet to work. These software's work on the policy of self-learning. They guide and instruct the users in order to work in right direction and motivate to work for the concept of 'mastery learning'. Teachers and teacher educators need to guide the students in using such software as Geo-Gebra, a free and multi platform dynamic mathematics software for schools that joins geometry, algebra and calculus. http://www.geogebra.org), (Teach2000 is a vocabulary trainer that helps to memorize words in foreign languages, using multiple-choice questions and flashcards: http://teach2000.memtrain.com/).

4. CONCLUSIONS

All teachers need to refresh themselves and improve their skills by attending or participating in professional development opportunities designed to invigorate learning Professional development represents a vital on-going activity that all teachers should address in order to remain current in their academic disciplines and up to date on education. Though there is tremendous technological evolution, but technology, pedagogy content are yet to be integrated. Techno-pedagogic divides need to be removed and the integrated technology pedagogy content needs to be universalized.

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