

# EFFICACY OF ICT IN TEACHER EMPOWERMENT

Paper submitted  
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## EFFICACY OF ICT IN TEACHER EMPOWERMENT

### 1.1 Relevance of ICT for Developing Nations

India being a developing nation aims at improving social infrastructure, government's initiative in the form of programs like "Sarv Shiksha Abhiyan" and education for all agenda to achieve functional literacy points out to the role of education played in any nation and India is no exception. Nevertheless education has always remained a challenge and there is a big gap which has to be filled up. With reference to India poor teacher-taught ratio, poor infrastructure, paucity of adequate resources, poor literacy rates, and prevailing socio-economic conditions points out to the need for governments interface so as to achieve the education goal and at the same time provide quality education to bring about social development. The scene which persists in rural areas is evident of the fact that literacy levels among marginalized and vulnerable sections of the society are alarming.

There is an urgent need to develop a model that can work for developing nations. In the recent past there is a rise in digital resources and ICT tools that can support learning and teaching. The basic questions with use of technology to enhance learning are:

- Technical, managerial and infrastructural requirements to deliver learning and provide effective learning environments
- What pedagogical models are possible with use of ICT in education and learning
- How to ensure accessibility, deal with protocols and standards

### 1.2 ICT and Teachers Empowerment

In an attempt to improve education, teachers are central. Teachers empowerment becomes an integral part of restructuring paradigm of school functioning. Empowering teachers needs to be focused. Empowerment consists of two issues:

1. Enabling experiences, provided within an organization that fosters autonomy, choice, control and responsibility which

2. Allows the individual to display existing competencies as well as learn new competencies that support and strengthen functioning

Teachers role is not restricted to first role rather focused on the second role, teachers also act as instructor and facilitator to educate and train apart from the conventional role that teachers play in school education. Teachers' empowerment is a complex construct it is associated with involvement in decision making, status, autonomy and most importantly teachers' empowerment can be viewed as opportunity for self-professional development and self-efficacy to successfully deliver content. Schools can integrate the use of ICT in teaching and learning across the school curriculum. This strategy can be adopted by schools to bring about variation in pedagogical practices using ICT in instituting change.

ICT can be defined as "those technologies that are used for accessing, gathering, manipulating and presenting or communicating information. The technologies could include hardware (e.g. computers and other devices); software applications; and connectivity (e.g. access to the internet, local networking infrastructure, video conferencing)". Addition of communication to information technology (IT) emphasizes the growing importance attributed to the communication aspects of new technologies. ICT includes blended learning solutions which can be defined as the "combination of printed text materials, radio, video and face-to-face practical experiences along with the use of computers and the internet to enable to learn effectively. Reach of new cybernetic technology that can provide new and potent opportunity to revolutionize both access to, and the quality of learning. ICT can act as a revolution in the dissemination of knowledge and in the enhancement of instruction. Technology can strengthen and reinforce established educational goals, curriculum contents, teaching and learning methods.

Teachers' empowerment is related to teachers' professional development that includes training in teachers' professional development. Teachers' professional development focuses on the use of ICT to guide students through complex problems and manage dynamic learning environment. ICT can act as an add-on to the traditional curricula and standardized test systems, digital literacy and use of

ICT for professional improvement. Professional improvement can lead to teachers' empowerment. Teachers should not be equipped just with basic ICT skills, but should encourage the evolution towards integrating technologies into teaching subjects and practices. Teachers' empowerment is not simply about how to use technologies but also about why and when to use them in transforming teaching practices. ICT integration denotes a change in pedagogical practices that make ICT less peripheral in classroom teaching. The role of ICT in teachers' empowerment involves two sets of activities or roles:

1. Training teachers to learn about ICT and its use in teaching as computers are introduced to schools
2. As a means of providing teacher education, either as a core or main component of a program, or playing a supplementary role within it

The role of ICT can be viewed as a core and complementary technology for professional learning and education. A core technology role refers to the "principle way of organizing the learning experience".

ICT use in the classroom as a content focus of the teacher training	ICT use as a core technology for participation
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In contrast a complementary technology role is optional serving a valuable function.

ICT use in the classroom as part of method, curriculum and lesson planning	ICT used to facilitate some (non-essential) aspect of participation
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While ICT has found its way into the formal curriculum in most educational practices their existence is embryonic mainly due to lack of computers, technology expertise, and inadequate resources. The inclusion of ICT as a separate or cross curricular phenomenon has implications for subsequent integration and take-up of technology in the school curriculum. Features of ICT can be integrated in and across the curricula through online, virtual communities of practice, web portals of resources and E-learning.

### 1.3 Paradigm Shift in Education and Learning

Probably the most fundamental change in the field of education and learning has been a shift from pedagogical approach to an andragogical approach.<sup>1</sup> Under the pedagogical approach, learners are seen to have a dependant personality, relying heavily on an instructor's knowledge. This knowledge is disseminated in a unilateral method from the teacher to the student. Learners, in turn, "are expected to except the information as disseminated, "learning" the material and delivering it to the instructor in the same manner it was presented to them." <sup>2</sup>From the pedagogical perspective, learning is subject centred and a learner's past experience is to be built upon rather than used as a resource.

In contrast, andragogy is based on self-directed learning theory and is seen as the art and science of facilitating leaning for adults from the andragogical perspective, learning is task or problem centered and is based on need rather than an age level or prescribed curriculum. The andragogical approach is based on an experimental model that is "learner centered rather than instructor-centered, dialogue-based rather than lecture-based,"<sup>3</sup>and sees the learner's past experience as a rich resource from which all involved can learn. Recent advances in instructional technologies are having a tremendous or profound impact on education, whereas technological innovations have transformed the role of the learner into that of a self-directed and independent learner, the role of the teacher has been equally affected. The introduction of internet and web-based technologies have resulted in changes in the way instructional design models are applied in creation of instruction delivered via the new media. The web allows using high quality instructional strategies and methods to meet a diverse set of learning needs and learning style preferences. The basic form involves text, simple graphics, and a limited amount of interaction. It can also consist of a course that includes

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<sup>1</sup> Gibbons, H.S., & Wentworth, G.P. (2001). "Andragogical and pedagogical training differences for online instructors". *Online journal of distance learning Administration*, 4(3). Retrieved June 3, 2002, from <http://www.westga.edu/~distance/ojdla>.

<sup>2</sup> *ibid*, p.2

<sup>3</sup> *ibid*

regularly scheduled lectures/instructions by video conferencing on the internet, a web page with several supplemental materials and hyperlinks to other relevant websites. Traditional instructional design models that have directed efforts to produce quality learning in face-to-face learning environments also are being applied to web-based learning.

#### 1.4 ICT and Pedagogical changes in Teaching

As teachers become competent to make use of ICT as a tool for teaching, enhancing learning experience of students and to favourably impact learning outcomes of students, teachers' become master learners and knowledge producers who are constantly engaged in educational experimentation and innovation to produce knowledge about learning and teaching practice. As teachers' become proficient in use of ICT they can apply these tools in teaching in class room hence traditional class room settings can be complemented and supplemented by use of ICT in the form of E-learning. "E- Learning is the automation of the processes of learning and training through the use of IT"<sup>4</sup>. It can be said that E-learning is a process that facilitates education or learning using a network i.e. internet, intranet or extranet. E-learning (electronic learning) is essentially learning via electronic network in which content is transferred via the Internet, intranet, extranet, audio/video tapes, satellite television, video conferencing and CD-ROMs. Hence E-Learning facilitates web-based transfer of knowledge and skills, virtual classroom and virtual clubs of similar discourse. E-learning is a combination of learning services and technology to provide high value integrated learning; anytime, any place. It is emerging as the next evolution of the training and education industry and the next phase in the digital revolution. There are four stages of E-learning programme viz, technology, tools, standards and contents. E-learning supplements the conventional delivery of instructions in the class room and helps in quality improvement of content using ICT tools i.e. computers,

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<sup>4</sup> Robson, R. (2002), "Explaining E-learning to a stranger", *E-learning magazine*. Retrieved March 1, 2002 from <http://www.elearningmag.com>

multimedia and the web. E-learning facilitates the learning and delivery process for both the teachers and students. The shift is from conventional face-to-face process to online learning which has opened up large vista and infinite opportunities for learning. There is a need to design a curriculum to ensure that students are able to learn the necessary skills and facilitate the training and functional development of the teachers at school level.

With advancements in technology a change can be witnessed in the traditional view of learning process and how new technologies can be used to facilitate new learning environments in which students are engaged to enable them to take greater responsibility for their own learning and construction of their own knowledge. Creating a paradigm shift in views of learning, coupled by applications of new information technology, can play a key role in renewing educational systems. This is more mature view of a high quality education process which incorporates a vision of technology diffusion of computer-mediated or technology-enhanced learning as a critical support within paradigm shift for broad educational reforms, renewal and social development.

Teachers' remain the gatekeepers for students' access to educational opportunities afforded by technology and as such they should not and cannot be ignored. There is reconceptualization of teacher professional learning for a digital age. Teachers' engage with technology and become co-learners in the process of learning as they work alongside their students they redefine learning itself. Teachers become empowered to contribute to the education of the new age of technology.

## 1.5 Conclusion

Teachers' empowerment focuses on integrating ICT in teaching and learning in primary and secondary education. The teachers need to be well-equipped in ICT hence first teachers should have expertise in using technology then they will be able to use it in classrooms. To infuse technology into education there is a need to integrate teachers' content, technology, and pedagogical knowledge to take advantage of technology and use computers to teach in traditional ways. The dominant culture of school system and inadequate access to equipment and

technology infrastructure often inhibits the use of technology in education. If schools continue with old practices it will not result in improvement in education. Old curricula and pedagogy should be reformed to take advantage of technological advancements.

For teachers' to integrate technology into their curricula to improve their teaching, teachers need to have access to technical support throughout their course of teaching, this can be provided in the form of regular workshops on teaching methodologies, teachers' training modules, online portal, and ongoing support. Process of ICT integration needs to address organizational, technological and pedagogical perspectives. As teachers' become competent to make use of ICT as a tool for teaching, teachers' master a range of assessment paradigms for use of ICT and how well they augur a vision for ICT innovation that catalyzes education renewal. If ICT is valued as an important educational tool, and if we want teachers' to use ICT in their teaching, then ICT should be an integral part of teachers' preparation program. Thus, if we expect teachers' to teach using ICT, we need to teach them using ICT. The incorporation and use of ICT in teachers' development will mirror to a certain degree contemporary socio-economic problems and prevailing educational conditions.

## 1.6 Implications for Policy Formulation

1. E-learning is now a global scenario. As a developing country India following the pattern of other developing nations like Bangladesh can design new courses and E-learning systems for distance learning or open learning education programs through existing facilities which can help learners acquire competences which are closely tied to work contexts and accredited. As streaming video and audio technologies become widely available, more distance learning web sites will attempt to capitalize on these dynamic forms of instructional messages which will provide education and learning to the doorsteps of learners irrespective of time and place.
2. Education authorities should develop or adopt management and governance system that is based on universally applicable principles and



adopt processes that will work most efficiently in prevailing economic and political circumstances. Relevant example to mention is Government of India's initiative in the area of education, Department of Higher Education under (MoHRD) - "Sakshat" an educational portal, which addresses learning needs of students, scholars, teachers and life long learners in the country. English is a lingua franca of the global internet, it is not appropriate for many regions. In a country like India, probably the biggest barrier to internet usage is language.

3. Issues related to localization of curriculum in specific national and local contexts as a way of ensuring greater responsiveness to local needs and realities should be taken care of through E-learning content. School Net Programs may be adopted in country like India, where information in local languages is needed to enable the efficient and desired use of PCs and the internet. As when developing curriculum materials and books, exploiting the internet for teaching at the primary, secondary and other levels requires developing content in local languages as well. Teaching basic ICT skills should start in early years. Primary schools should be able to teach pupils the basics of operating a computer and accessing the internet. Government of India's initiative "Sarv Shiksha Abhiyan" has adopted Computer Aided Learning (CAL) for off school and on school model for primary, upper primary and high school level should ensure responsiveness of local needs.
4. To empower teachers' at school level a systematic and sustainable development approach must be followed by all stakeholders in integrating ICT in teaching and learning. Teachers', administrators, policy makers and other stakeholders should collaborate and participate in the decision making process, as well as design and implementation of curriculum, and pedagogy.
5. An online portal can be developed that will serve as a mechanism for teacher continuous support. Online portal can provide teachers access to a variety of services from their site of the portal, act as a discussion forum to

exchange ideas with peers and experts, prepare lesson plan and activities, serve as a depository where teachers can post their work and receive feedback from peers, get online support, and access to websites with information relating to ICT in education.

## REFERENCES

1. Adler, C., Rae, S. (2002, January). "Personalizes learning environments", The future of e-learning is learner-centric. E-learning. Retrieved Jan 24, 2002, from <http://www.elearningmag.com/elearningarticle/article>.
2. Anderson, T. (2002, January). Is e-learning right for your organization? Learning circuits, ASTD (full form). Retrieved January 24, 2002, from <http://www.Learningcircuits.org/2002/jan2002/Anderson.html>.
3. Bagdon, Kerry and Halima Goss. 1997. "Teaching and Learning on the Internet: Developing a Resource for Academic Support." *AusWeb97 Conference Program and Papers*. [Online]. Available: <http://ausweb.scu.edu.au/proceedings/goss/index.html> [December 6, 1997].
4. Baker. G. 1992. "Instructional design of a computer-assisted work-related literacy program", *Journal of computer based instruction*.
5. Evans, J.R. (2001). The emerging role of the internet in marketing education: From traditional teaching to technology-based education. *Marketing Education Review*.
6. Gibbons, S., & Wentworth, G. P. (2001). Andragogical and pedagogical training differences for online instructors. *Online journal of Distance Learning Administration*. Retrieved June 3, 2002, from <http://www.westga.edu/~distance/ojdla>.
7. Hanna, D. (2001). "Higher education in an era of digital competition: Emerging organizational methods", *Journal of Asynchronous Learning Networks*, Volume 2, Number 1, available at [www.aln.org/alnweb/journal/vol2-issue1/hanna.htm](http://www.aln.org/alnweb/journal/vol2-issue1/hanna.htm).
8. Kaplan, Howard. 1996. "Interactive Multimedia & the World Wide Web." *Educom Review* [Online]. Available at <http://www.educause.edu/pub/er/review/reviewArticles/32148.html> (December 6, 1997).
9. Smith, S. B., Smith, S. J., & Boone, R. 2000. Increasing access to teacher preparation: The effectiveness of traditional instructional methods in an online learning environment. *Journal of Special Education Technology*.