NEED OF DIGITAL-AGE LITERACY IN TEACHER EDUCATION

By

K. NACHIMUTHU

Assistant Professor in Education, Department of Education, Periyar University, Salem, TN.

ABSTRACT

The amount of knowledge in the world has doubled in the past 10 years and is doubling every 12 months according to NCTE. Now technology increases conversation, sharing, and learning among and between students and teachers. Today's digital students think of Information and Communication Technology (ICT) as something akin to oxygen: they expect it, it's what they breathe, and it's how they live. Now-a-days the parent's role is minimized and the web page role has been maximized by the students. The dimensional shift describing students in the digital age is explained in four ways; (i) literacy, (ii) learning, (iii) reasoning and (iv) action.

Today's generation of students communicate in a language that many academics don't yet understand. Web-based modules are used as animations, voice and video clips, captions, and text, all combined in accurate, well organized, pedagogically solid productions. Learning theories for Digital age deals with three instructional environments viz., behaviorism, constructivism and cognitivism which were developed in a time when learning was not impacted through technology. The digital learning provides the learners with a platform to exchange with peers and reflect on their work and to foster learner autonomy and learning strategies (Wang 2007). This paper also discusses the skills that are needed for the teachers in the Digital age and the curriculum access in digital age as well as trends and future of digital age. Preparing teachers for this does not imply that better learning will come from finding better ways for the teacher to instruct, but from giving the learner better opportunities to create new knowledge with and without technology.

Keywords: Digital Literacy, Digital Technology, Online Teaching.

INTRODUCTION

The amount of knowledge in the world has doubled in the past 10 years and is doubling every 12 months according to National Council of Education and Training (NCTE). To combat the shrinking half-life of knowledge, organizations have been forced to develop new methods of deploying instruction. A network is defined as connections between entities. Computer networks function on the simple principle that people, groups, systems, nodes, entities can be connected to create an integrated society. In this society, teachers are the key to whether technology can be used appropriately and effectively. Now technology increases conversation, sharing, and learning among and between students and teachers.

The relationship between information, learning and knowledge proposes a simple model, which makes this relationship explicit. Information is accepted into the organization from different sources. The organization or an individual conceptualizes that information in a way that is consistent with its norms, cognitive frameworks, context and cultures. This conceptualization process can be described as learning. Learning leads to knowledge, which may be either embedded in minds (tacit) or as in verbal (explicit). Knowledge is available to support and inform decisions, behaviour and actions. The last stage of learning is the feedback from the actions.

Many of the current and next generation of students who reach certain age are remarkably immersed in technology. Today's digital students think of information and communication technology (ICT) as something akin to oxygen: they expect it, it's what they breathe, and it's how they live. They use ICT to meet, dial, play, date, and learn. It's an integral part of their social life; it's how they acknowledge each other and form their personal identities.

Digital Age dimensions

Now-a-days the parents role is minimized and the web

page role has been maximized by the students. The dimensional shift describing students in the digital age is explained in four ways; (i) literacy, (ii) learning, (iii) reasoning and (iv) action. They are as follows;

Literacy

The first shift encompasses the evolving nature of literacy, which today involves not only text but also image and screen literacy. The ability to communicate and express oneself with images (still and moving), sound, and other media is a crucial aspect of the new literacy (eg. cat as a pet animal).

Learning

The next shift - learning from an authority-based lecture model to discovery-based learning. Young learners are constantly discovering new things as they browse through emergent digital libraries and other Web resources.(eg. collect different pet animals from web).

Reasoning

The third shift, pertaining to reasoning, connects to discovery-based learning in an extremely important way. Classically, reasoning is linked with the deductive and abstract (eg. separate the pet animals as per classification).

Action

The final dimensional shift has to do with a bias to action- to try new things without reading the manual. This tendency shifts the focus to learning with and from each other. Learning becomes situated in action; it becomes as much social as cognitive. It's concrete rather than abstract, and it becomes interrelated with judgment and exploration. (eg. choose a correct one).

Preparing teachers for the digital age

The Internet and other technologies honour multiple forms of intelligence; like abstract, textual, visual, musical, social and therein present tremendous opportunities to design new learning environments that enhance the natural ways that humans learn. Today's generation of students communicate in a language that many academics don't yet understand. It's an ever-evolving language of interpretation and expression, an interactive approach to learning, creating, and responding to information through a complex of images, sound, and communication. So, students can take advantage of the enormous resources of the Web, transforming what they find there by using digital technologies to create something new and expressive.

A change in the basic vehicle used for learning today, from variety of courses, lectures, and textbooks to various interactive, electronically portable media could be a mode for enhancing our education system. Web-based modules are used as animations, voice and video clips, captions, and text, all combined in accurate, well organized, pedagogically solid productions. There was a competition for a highly produced new media version covering the same conventional class teaching material. Even though, more courses could also be converted, although some level of face-to-face contact is certainly necessary to master such material (Vijayakumari, 2009). In foreign countries, students wear virtual reality glasses, and environments are beginning to acknowledge the interactive and social basis of learning and are finding ways to achieve a balance between discovery and reflection in situ.

Learning theory for digital age

Though the Internet itself has existed since 1969, it was with the invention of the World Wide Web in 1989 by British scientist Tim Berners-Lee and its implementation in 1991 that the Internet truly became a global network. Today the Internet has become the ultimate platform for accelerating the flow of information in the digital age. The learning theory like connectivism has developed as a means to account for educational technologies and their impact on how we communicate and learn in the digital age. Learning needs and theories that describe learning principles and processes must be reflective of underlying social environments. The life of knowledge was measured in decades. In many fields the life of knowledge is now measured in months and years. (Gonzalez 2004). Learning theories for Digital age deals with three instructional environments viz., behaviorism, constructivism and cognitivism which were developed in a time when learning was not impacted through technology. Over the last twenty years, technology has reorganized how we live, how we

communicate, and how we learn.

Digital age literature and learning

Many learners will move into a variety of different, possibly unrelated fields over the course of their lifetime. Learning and work related activities are no longer separate. In many situations, they are the same. Technology is rewiring our brains. The tools we use define and shape our thinking. In the context of language education this translates into a focus on interaction and meaning (Murphy 2005), and acknowledgement that the online context requires the consideration of the mediating effects of digital and multi modal tools (Hampel and Hauck 2006; Lamy and Hampel 2007).

Meskill et al.'s (2006) found that the effective integration of technology into everyday teaching and learning in ways are supportive of learning after all is a complex, situated activity. As White (2006) points out, the boundaries of conventional education are fading as more and more teachers move parts of their curriculum and learning tasks to the Web.

Blake (2007) analyzed that the teachers are increasingly relying on tools such as audio and video conferencing, virtual worlds, wikis or blogs for interaction with and amongst their students and for creating collaborative learning environments. The digital learning provides the learners with a platform to exchange with peers and reflect on their work and to foster learner autonomy and learning strategies (Wang 2007).

Hampel and Stickler (2005) identified a number of skills, which is based on the idea that online language teachers need a range of skills that build on one another, skills that comprise both technical expertise and the pedagogical expertise of using this technology. They followed the following skills needed for the teachers in the Digital age. (i) own style; (ii) creativity and choice; (iii) facilitating communicative competence; (iv) online socialization; (v) dealing with constraints and possibilities of the medium; (vi) specific technical competence for the software; (vii) basic ICT competence and (viii) prepare teaching learning material using the familiar technology.

Each technology has particular affordances, that is, specific constraints and possibilities that impact on its use. The teachers must practice the oral language rehearsal and know how to deal with challenges such as the lack of body language in synchronous audio conferencing and to a certain extent in videoconferencing (Weininger, M. J. and Shield, L. (2003).

Online teachers with time develop their own personal teaching style, thus realizing the potential of the technologies and materials used, encouraging their students to form learning communities and using the resources creatively to promote student-centered communicative language learning.

Curriculum access in digital age

Books, lectures, chalkboards, paper and pencils are curriculum delivery in traditional way and now teachers are less interested in books and more attuned to the tools of games, visual and audio entertainment and computer keyboards. Most text books now have a supplementary disc in the back flap and their web address as additional materials. Online education providers have portals and web sites where students enter a virtual learning environment to engage the curriculum.

The adoption of digital curriculum has two major problems. (i) Most students have computer interfaces at home but very little access during school hours. Computers are typically accessible a couple of hours a week in a computer lab. (ii) If teachers are educated and trained in the effective use of digital curriculum there is little information and knowledge available to support selection of the most effective digital curriculum. (Nachimuthu, 2009). Digital literacy means, Literacy skills should be learned in traditional fashion and then applied to digital texts; and that we freely choose and between page and screen to represent our communicated ideas.

Trends of Digital age

Digital literacy could then be seen as the study of written or symbolic representation that is mediated by new technology. Its prime concern would be the production and consumption of the verbal and symbolic aspect of screen–based texts and this would be its initial point of departure with print literacy. Hence, it is also important to acknowledge the fact that one of the key characteristics of digital literacy is the way in which it readily combines with

other modes of communication.

Assistive technologies have come as a boon to the differently-abled population.. It has enabled them to participate more widely in public life. This assistive technology, if properly promoted and used, could bring about revolutionary changes and facilitate the creation of a truly inclusive society (Ravi gupta, 2010).

The increased speed and availability of broadband connectivity have led to a proliferation of synchronous communication, most of which is transacted through writing, rather than through the spoken word. Children and young people also need to be critically aware of how meaning is constructed in digital text. Now, there is an opportunity to use the digital media in the zones between home and school, work and play or study and leisure. The digital literacy – an entitlement predicated on some basic rights. These could include:

- the right to access and use up-to-date new technologies building on everyday (or out of school) practices;
- the right to an education that supports and develops the skills, knowledge and dispositions needed for the effective use of digital media, and also provides opportunities for critical digital literacy practice;
- the right to explore and experiment with one's own digital space;
- the right to critique and resist dominant discourses in digital domains

Nothing could be more obvious than the ways in which writing is changing. The future of writing is closely interwoven with the future of digital technology. In fact, when at current trends, four tendencies seem to be emerging. These could be characterized as convergence, portability, pervasiveness and transparency.

Convergence refers to the capacity to integrate technological functions in a single device. Hence, the mobile phone doubles up as camera, MP3 player and so on – or the home media system deals with music, TV, telephonic and email. The general direction of convergence is to allow for access to multiple media from a single source. Convergence pairs up with portability, because as devices become more compact and wireless connection becomes more affordable and more ubiquitous, the possibilities of being able to use all media, more or less at any time or place, increase. Pervasiveness suggests that digital technologies will feature in more and more areas of everyday life, becoming even more closely interwoven with the way we get things done. As this pervasiveness increases, it is also likely that technological innovation will focus on making devices and their interfaces more transparent – in ways that screens and desktop icons begin to suggest.

Future of Digital age for improvement

The author recommends that the following strategies be incorporated into teacher training programs;

- Focus institutional technology planning on the integration of technology in teaching and learning, not only on facilities.
- Provide student teachers with more opportunities to apply technology during field experience.
- Give school of education faculty the tools, incentives, and professional development they need to integrate technology into the teacher training curriculum.
- Institutions of teacher education accountable for preparing teachers who are highly qualified not only in academic content areas but also in the effective use of technology in the classroom.
- Every teacher and administrator should have access to information technology.

Teacher preparation is to be aimed at reaching this goal. This is going beyond computer literacy skills. Training courses for teachers are indeed strategies to discover the relation between technology resources, curriculum, pedagogy and learning. The efforts required to implement such courses are enormous, while training opportunities are limited. But teachers have started demanding these opportunities. (Ncte-india.org)

Meanwhile, some in-service programmes designed and implemented with the corporate lead are based on the premise that thinking with technology is the immediate

goal of technology use in the classroom. State bodies like SCERTs and DIETs do provide occasional training to in-service teachers, but it is a question of how far it was utilized in the school? Teachers of some 1.8 lakh secondary schools will expect ICT training during the 11th Plan period. (ugc.ac.in)

Today's students live in a global, knowledge-based age. They deserve teachers whose practice embraces the best that technology can bring to learning. Professional and popular literatures refer to 'critical thinking, problem solving and decision-making' as the 21st century cognitive skills that children should be adept at. Preparing teachers for this does not imply that better learning will come from finding better ways for the teacher to instruct, but from giving the learner better opportunities to create new knowledge with the new digital technology.

Conclusion

Learning technologies are not a panacea that will resolve the many issues that higher education faces today. Instead, new technologies lead directly to institutional issues, starkly highlighting them in contrast to the widespread need for education and the possibilities technology presents to fill that need. Higher education today has the opportunity to reshape itself and play an important role in the future of our society. Whether that role is ultimately fulfilled will depend on fresh, creative thinking and a firm commitment to move teaching, learning, and the university into the digital age. People are more intellectually engaged than ever before, because of the digital age.

The "Information Age" is often applied in relation to the use of cell phones, digital music, high definition television, digital cameras, the Internet, cable TV, and other items that have come into common use in the past five years. Our ability to learn through digital media, what we need for tomorrow is more important than what we know today. A real challenge for any digital learning material is to actuate known digital knowledge at the point of application. When digital knowledge, however, is needed, but not known, the ability to plug into sources to meet the requirements becomes a vital skill. As digital knowledge continues to grow and evolve, access to what is needed is more important than what the learner currently possesses.

We need innovative work in digital literacy in educational settings particularly to investigate the implications of new forms of social networking, knowledge sharing and knowledge building. And finally, because of the pervasive nature of digital technology, the commercial interest that is invested in it and the largely unregulated content of Internet based sources; we also need to begin to sketch out what a critical digital literacy might look like. There is, in short, plenty to be done if we are to prepare children and young people to play an active and critical part in the digital future.

References

[1]. Blake, R (2007). New trends in using technology in the language curriculum, *Annual Review of Applied Linguistics,* Vol. 27 , pp. 76-97.

[2]. Gonzalez, C (2004). *The Role of Blended Learning in the World of Technology,* Retrieved August 26, 2010 from http:// www.unt.edu /benchmarks /archives /2004

[3]. Hampel, R. and Hauck, M (2006). Computer-mediated language learning: Making meaning in multimodal virtual learning spaces, *The JALT CALL Journal,* Vol. 2, No.2 , pp. 3-18.

[4]. Hampel, R. and Stickler, U (2005). New skills for new classrooms: Training tutors to teach languages online, *Computer Assisted Language Learning,* Vol.18, No.4, pp. 311-326.

[5]. Lamy, M-N. and Hampel, R (2007). *Online communication for language learning and teaching,* Pal grave , Hound mills, UK.

[6]. Meskill, C. , Anthony, N. , Hilliker-VanStrander, S. , Tseng, C.H and Levy, M (2006). Expert-novice teacher mentoring in language learning technology, *Teacher education in CALL,* pp. 283-298.

[7]. Murphy, L (2005). Attending to form and meaning: The experience of adult distance learners of French, German and Spanish, *Language Teaching Research,* Vol.9, No.3., pp. 295-317.

[8]. Nachimuthu, K and Vijayakumari, G (2009). Virtual Reality Enhanced Instructional Learning, *i-manager's Journal of Educational Technology,* 6.(2), pp 8-11.

[9]. **Ravi Gupta (2010).** Technology is for Education, Editorial Page, *Digital Learning, Learning through ICTs,* CSDMS pub, UP, November 2010.

[10]. **Wang, Y (2007).** Task design in videoconferencing-supported distance language learning, *CAILCO Journal*, Vol. 24, No.3, pp. 591-630.

[11]. **White, C (2006).** Distance learning of foreign languages, *Language Teaching: The International research resource for language professional,* Vol.39, No.4, p. 247.

[12]. **Weininger, M. J. and Shield, L (2003).** Promoting oral production in a written channel: An investigation of learner language, *Computer Assisted Language Learning,* Vol.16, No.4, pp. 329-349.

[13]. www.ncte-india.org

[14]. www.ugc.ac.in

ABOUT THE AUTHOR

Dr.K.Nachimuthu is currently working as an Assistant Professor in Education, Dept.of Education, Periyar University, Salem. He has his PG Degree in Botany, Journalism and Mass Communication and Information Technology from Madras University. He received his B.Ed and M.Ed from Bharathiyar University; M.Phil and Ph.D from Maduari Kamaraj University. He has 23 years of experience in the field of Teaching. He has published few books on Innovations in Education, School management and Aids in Education and 150 papers in various national and International conferences. He is also a member of various organizing committees and has a life membership in several professional societies in national level. He received a paper award in International e-Asia 2009 of Colombo, Srilanka.