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IMPACT OF ICT IN CONTINUING LIFE-LONG LEARNING AND TEACHING

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Abstract: One of the many challenges facing developing countries today is preparing their societies and governments for the information and communication (ICT) revolution. Ordinary citizens are increasingly concerned with the need to make their societies competitive in the emergent information economy. With ICTs, they can elevate to higher levels of social, economic and political development. Schools cannot remain mere venues for the transmission of a prescribed set of information from teacher to student over a fixed period of time. Rather, schools must promote “learning to learn,” i.e., the acquisition of knowledge and skills that make possible continuous learning over the lifetime. Regular education seems to evolve from a transfer into a developmental paradigm. Life-long learning tends to migrate from ‘incidental-’ and ‘continuous learning’ into ‘course-based-’, ‘institutionalized-’ and ‘certificate-driven’ learning. Its mutual comparison is like estimating the speed of two opposing trains without seeing the landscape.

Keywords: ICT, Information and Communication Technology, life-long learning; school-based education; ICT for education

1 Introduction

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Information and communication technologies (ICTs)—which include radio and television, as well as newer digital technologies such as computers and the Internet—have been touted as potentially powerful enabling tools for educational change and reform. When used appropriately, different ICTs are said to help expand access to education, strengthen the relevance of education to the increasingly digital workplace and raise educational quality by helping make teaching and learning into an engaging, active process connected to real life.

If regular education covers around 40% of our life span and if the largest part of national budgets is spent to education, why then focus on the learning after that period? Is it because we expect ICT not to penetrate regular education? (Sánchez, 2008) The most likely explanation is that we believe in its combination: ‘Great that ICT penetrated school education, but now, will it affect life-long learning as well?’ (Thorpe, 2005).

The effective integration of ICTs into the educational system is a complex, multifaceted process that involves not just technology—indeed, given enough initial capital, getting the technology is the easiest part!—but also curriculum and pedagogy, institutional readiness, teacher competencies and long-term financing, among others. So why not prelude on the new collaborative skills in educational settings as well? (Salomon, 1993) The task of this report is to find an answer to the question ‘if and how ICT influenced teaching and learning?’ Even more important: to make more transparent that the mere added value of ICT so far only penetrated in a particular part of life-long learning so far. In other words: there are potential added values of ICT that are only used for a minor part. We can explore about the learning through ICT such as:

- How ICTs been used for teaching and learning?
- What does learning through ICTs mean?

2 Definition of ICTs and Types of learning paradigms

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ICTs stand for information and communication technologies and are defined as a “diverse set of technological tools and resources used to communicate and to create, disseminate, store, and manage information.” These technologies include computers, the Internet, broadcasting technologies (radio and television) and telephony.

Where ICT has provoked education to focus on informational resources, we may meet biochemical and sleep technologies the coming years. The nature and culture of learning will work together more closely than we did in classrooms before (Agina, A., 2008). In the case of life-long learning, we need to distinguish two contrasting learning paradigms:

i. Regular ‘school-based education’ implicitly targets convergence between learners. It also rests upon predefined goals, methods and prior assessment criteria. One could say that the essential learning momentum emerges in its curricular conception; the roll-out of a course is just a matter of transfer from those who know to those who don’t know yet.

ii. Life-long learning: the continuous day-to-day learning in the manifold situations during work and leisure time. Life-long learning is mainly driven by its situational and existential motivation. Quite often it has been labelled as ‘just-in-time’ learning: the learner decides when prior knowledge fails and additional expertise is needed.

In the last twenty years, we saw that ICT has not failed to innovate formal education. The traditional approach is to see education as a process that transfers knowledge and experience from the elder to the younger generation. ICT in combination with emerging needs of knowledge economies has promoted learning that exceeds this transfer process; it relies on education that innovates existing disciplines and in fact develops new understanding.

Most striking is ICT as a vital factor in the evolution of life-long learning that exactly Japan with its highly saturated and highly advanced infrastructure has the least penetration of ICT throughout education.

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3 Applications of ICT in life-long learning

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies—scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities and the elderly as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

- **Anytime, anywhere.** One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g. educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e. synchronous learning).

- **Access to remote learning resources.** Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at anytime of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries like India and even some in developed countries that have limited and outdated library resources. ICTs also facilitate access to resource persons—mentors, experts, researchers, professionals, business leaders and peers—all over the world.

4 Impact of ICT

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It is seen as an undisputed fact that mass media had an enormous impact on the emancipation and self efficacy of citizens in the sixties and seventies (Garnham, 2002). It is now the question if ICT is instigating a new trend in education with a similar direction as the mass media before? The introduction of ICT in western society has affected the role and practices of learning dramatically. Kearsly, G. (2008)

1. As ICT has been the quickest developing technological strand in the last two decades, it has been the field of learning and education that was called upon for making citizens 'aware', 'literate' and 'skilled' in this field.

2. As in the preceding half century the underlying paradigm of learning focused on instruction (the systematic and the guided transfer of information from the expert to the novice), there has been an excessively high ambition on the role of ICT in enabling learning as a dissemination rather than a developmental process. In its more rigorous shape, learning may cause sectors to diminish like the travel agent or the job secretary. The typical mechanism here is that ICT suggests workers to incorporate earlier specialized skills in other professions. This migration is often seen as learning. It could better be called 'supplanting' existing expertise domains, inevitably leading to erode specialized craftsmanship and later to reinstall this craftsmanship in full recognition again.

3. The cybernetic role of ICT has been quite a welcome metaphor for learning as process that relies on external rather than on internal control. Rather than empowering the learner as an autonomous learner it have been ICT advocates who recognized the merits of channeling learning into one of 'process control'.

In conclusion: ICT has been adopted as a welcome tool for sustaining instructional procedures in the second half of the twentieth century.

As an example, we may observe how travellers may learn from GPS technologies rather than memorising maps and switching the lanes on the high ways. Indeed, it is the case that after having learned how to use the GPS device the traveller can expand his/her manifested

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skills at a local scale to a world-wide one. So that we might conclude that learning to use ICT tools is a generic one that bypasses citizens to learn by heart the huge factual instantiations. At the same time it is the same technological commodities that encourage institutional learning to ignore the real impact of ICT. For example, we see how educational publishers nowadays integrate GPS methods in school books now very quickly as instrumental skill for learning the traditional geographical goals even more stringent. Rather than admitting that topography is now a matter of opening Google Earth they claim that topographical knowledge is now even more important than before as learner might get lost as soon as the GPS dies from batteries.

5 Use of ICTs to help improve the quality of education

ICTs can enhance the quality of education in several ways: by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training. Regular education seems to evolve from a transfer into a developmental paradigm. Life-long learning tends to migrate from 'incidental-' and 'continuous learning' into 'course-based-', 'institutionalized-' and 'certificate-driven' learning. Its mutual comparison is like estimating the speed of two opposing trains without seeing the landscape. It can be increased by following tactics via ICT:

i. Learning through motivation. ICTs such as videos, television and multimedia computer software that combine text, sound and colorful, moving images can be used to provide challenging and authentic content that will engage the student in the learning process. Interactive radio likewise makes use of sound effects, songs, dramatizations, comic skits and other performance conventions to compel the students to listen and become involved in the lessons being delivered. More so than any other type of ICT, networked computers with Internet connectivity can increase learner motivation as it combines the media richness and interactivity of other ICTs with the opportunity to connect with real people and to participate in real world events.

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ii. Acquisition of basic skills. The transmission of basic skills and concepts that are the foundation of higher order thinking skills and creativity can be facilitated by ICTs through drill and practice. Educational television programs such as Sesame Street use repetition and reinforcement to teach the alphabet, numbers, colors, shapes and other basic concepts. Most of the early uses of computers were for computer-based learning (also called computer-assisted instruction) that focused on mastery of skills and content through repetition and reinforcement.

iii. Enhancing teacher training. ICTs have also been used to improve access to and the quality of teacher training. For example, so many institutions/Universities all over World including India are taking advantage of the Internet to provide better teacher professional development opportunities to in-service teachers. Many private schools offers self-directed, self-paced Web-based courses for primary and secondary school teachers. Courses include “Computers in the Information Society,” “Education Reform,” and “Future Society and Education.” Online tutorials are also offered, with some courses requiring occasional face-to-face meetings. At Indira Gandhi National Open University(IGNOU), satellite-based one-way video- and two-way audio-conferencing was held in 1996, supplemented by print-materials and recorded video, to train 910 primary school teachers and facilitators from 20 district training institutes in Karnataka State. The teachers interacted with remote lecturers by telephone and fax.

6 Discussions

ICTs—especially computers and Internet technologies— enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. These new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centered pedagogy—in its worst form characterized by memorization and rote learning—to one that is learner-centered.

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In Asia, the 44 radio and TV universities in China (including the China Central Radio and Television University), Universitas Terbuka in Indonesia, and Indira Gandhi National Open University have made extensive use of radio and television, both for direct class teaching and for school broadcasting, to reach more of their respective large populations. For these institutions, broadcasts are often accompanied by printed materials and audio cassettes

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