



Upcoming challenges and issues related to Technology and E-learning in Teacher Education

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Abstract

While e-learning (electronic learning) technologies are continuously developing, there are number of emerging issues and challenges that have significant impact on e-learning teacher education. E-learning technologies comprise all forms of electronically supported learning and teaching. The information and communication systems, whether network learning or not, serve as specific media to implement the learning process. The term will still most likely be utilized to reference out-of-classroom and in-classroom educational experiences via technology, even as advances continue in regard to devices and curriculum. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio. This paper reports on challenges and issues which have been facing in technology and e-learning in teacher education. It includes the facts that by making presentation of outlining of technology and e-learning issues are important in teacher education.

Keywords: ICT, e-learning, teacher education

Introduction

Knowledge, education and learning are strongly linked with society and its evolution. One cannot teach or learn nowadays the same way as a century ago. More particularly, the quick and deep changes brought by ICT (Information and Communication Technologies) have a strong influence on knowledge, teaching, learning. But pupils themselves are changing and evolving decade after decade. And education must permanently adapt to the new generations of pupils. In terms of information, communication, computers, and technology, youngsters have new abilities, new approaches, new concepts. Certainly education has to take this into account, particularly at a time when pupils seem to be more competent than teachers in technological abilities! But the new generation of today and tomorrow cannot be described only through technology. We have to take into account other parameters.

There were many evolutions in the past generations. Everyone was intended to find a place in society. Of course, all expectations and hopes did not fulfill! Then 'generation X' came into existence in 1960–1989, which lived between the decline of the

colonial Empires. This generation was confronted to the economical crisis and the increase in unemployment. The generation of today is often called the 'generation Y'.

It is the generation of digital natives. Digital activity is like a mother tongue for them. This generation is the generation of 'Web 2.0': interactivity, community, communication, collaboration. This gives them a new vision of time and space: Multi tasking makes it difficult for them to concentrate on one activity for a long time.

Challenges and issues

The teacher education is mainly affected by Digital natives. They are facing three major challenges: new knowledge, networks, collective intelligence.

1) New knowledge

Basic knowledge of the 'generation Y' cannot be reduced to 'read, write, count'. Knowledge cannot be reduced to the addition of traditional school subjects. There is a tremendous accumulation of knowledge, and knowledge is getting more complex. E-Learning can include a lot of different types of learning.

- **Components of e-Learning** : e-Learning components include: learning management system (LMS) or learning content management system (LCMS), content, collaboration, testing and assessment, skills and competency, e-commerce, and Internet video-based learning. A complete e-learning portal represents the total integration of multimedia, instructor-led, and real-time training - in a human, collaborative environment.
- **e-Learning Industry:** The e-learning industry is comprised of three vendor segments: technology, content and services.
- **Defining the e-Learning Portal** : There are basically two types of e-learning portals: external and internal. The first focuses on providing access to external learning services. The second focuses on providing access to all learning within the organization. Of course the internal portal may also include use and management of external learning and providers.
- **Intelligent Portals:** The e-learning portal is an intelligent portal. The portal advises users on what skills and experience they need to advance to other levels in the organization, provide competency maps and assessment, and discussion forums related to essential learning themes - online learning communities. It recognizes what the user knows, certifications earned, experiences, and his ideal learning style.
- **Full-Service e-Learning Portal:** The complete or full-service e-learning portal supports the learning cycle with different components of e-learning. Many of these components are foundational to the learning process and are critical in creating a full-service e-learning portal.
- **Portal Technology:** Portal technologies supporting open standards can be easily integrated into an organization's existing infrastructure. The portal needs to be operating system - and web server-neutral so that enterprises can host it on the platform of choice.
- **Next-Generation Portals:** The ability to provide mobile, distributed workers organized access to the applications, knowledge, and information they need for

sound decision-making has become vitally important for businesses striving to be productive, agile and profitable. The attractiveness of Web-based computing, combined with the need to expedite information access and learning, has fueled adoption of e-learning portals.

- **Other Forms of E-learning:** E-learning can mean a lot more than just a self-study online course. The definition has been broadened to include any form of learning which uses technology to help people learn, this can include:
 1. Virtual classrooms, where an online tutor can interact in real time with learners, give presentations, ask questions (like WebEx)
 2. Audio conferencing
 3. Chat rooms
 4. Discussion forums
 5. Instant messaging
 6. Online games

In addition to this more transverse and complex approach of knowledge, the new generation has to face the fact that school knowledge is no longer the only one, that school is not the only place to access knowledge. And knowledge is linked with competences. Four pillars for education:

Learning to know

Learning to do

Learning to live together

Learning to be

One often speaks about the Information society or the digital society. Actually, UNESCO proposes to speak about knowledge societies, in order to take into account the human dimension of the new trends and context. And in a knowledge society, knowledge has become an economical good that one can buy, sell, store, exchange, etc. For digital natives, knowledge is not exactly what it was for the previous generations!

2) Networks

We were traditionally used to hierarchical and pyramidal structures in our organizations and in our way of behaving. Societies, companies, and institutions have hierarchical organizational charts; information can be traditionally found through catalogues, directories, tables of content, alphabetical lists, etc. In such organizations, there is usually only one way to access a person or to access information. But ICT, and particularly the Internet, bring a totally different organization, which leads to new ways of processing and thinking. Networks are everywhere! A network can be defined as a set of points (pieces of information, persons, web pages, etc.) linked by edges or segments (direct access, click of the mouse, connection, etc.). In a network, we find totally different hierarchies. One can access a point through different ways, one can access directly people one could access before only according to the traditional hierarchy; one can permanently enrich the network by new points and new connections. Network thinking is now common and this is a new challenge for digital natives. Networks are constantly enriching (for instance, moving from the Web 1.0 to the Web 2.0, and so

on). Thinking in terms of networks changes profoundly the vision of the world, the vision of human relationships. Almost everyone is now a member of many networks. 'Cloud computing', one of the recent developments in informatics, has clearly been made possible by networks.

3) Collective intelligence

We were mainly thinking in terms of individual competences, individual intelligence, individual memory, individual achievement, etc. Networking and collaboration by the means of ICT now make new ways of co-operating possible and develop new concepts at a collective level. Collective intelligence is the major one. Collective intelligence is not only gathering of individual intelligences in a group. Each of them, through pheromone exchanges with the environment, enters a kind of communication which makes such complex activities possible. One can imagine that networking may enable human beings to such collective abilities, going much further than the traditional task sharing. The networked society needs and reinforces the collective intelligence. The 'generation Y', the digital natives are invited to take part in this collective intelligence. ICT make it possible to move towards a global network of collective intelligence. This is a great challenge! Under such challenges, learning in the digital society takes new forms and opens new ways. Learning in the global network of collective intelligence is not learning traditional knowledge by the means of traditional pedagogy. Teachers have new roles, teaching is becoming a new profession! Digital native pupils will change schools! Digital natives bring new challenges for teachers. Let us quote eight of those new challenges for teachers:



ICT in education are not only new tools bringing evolution and changes. They raise new fundamental paradigms, new fundamental concepts, which change profoundly our societies, which change knowledge and access to knowledge. Digital natives are not only new pupils, a kind of new step in the humankind; they are the main actors of the new digital society, the new citizens of the knowledge society.

Methodology

This study intended to examine the challenges, opportunities and directives in National Council for teacher education (NCTE). For a particular unit of Computer Science and Mathematics module from the syllabus in teacher education; we attempt to use technology and e-learning. In addition to classical chalk-board method, the power point presentations and internet were made use of for effective teaching-learning.

Conclusion

In order to utilize an e-learning system effectively the mentioned challenging issues needs to be considered. An e-learning integration into an teacher educational institution is not a simple operation as they need to have required infrastructure and support system. Education policy should be altered and blended learning should be implemented. Teachers have to be lifelong learners(LL-L-teachers).

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