Paradigm Shift from eLearning-1 to eLearning-2
Problems & Prospects for Higher Education in Developing Countries like Pakistan

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Abstract: New technologies offer opportunities for the developing countries to resolve their long-standing problems of national/international isolation and mass-education. However, it is neither automatic nor devoid of challenges and problems rather there are both development and use problems for the developers, users and institution. The effective use of information and communication technologies (ICTs) in higher education is a global issue for individual researchers, institutions, governments and societies as a whole. All three eLearning systems: traditional, blended, and virtual can be used depending on the availability of technologies and trained workforce. Most of the developing countries are experimenting with traditional and blended systems while developed world is practicing virtual systems. This paper portrays the evolution of eLearning from traditional to modern eLearning in the higher education of developing states like Pakistan.
[Basar S, Rahat, Asad K, A., Adnan A. **Paradigm Shift from eLearning-1 to eLearning-2.** *Life Sci J* 2013;10(12s):564-571]. (ISSN:1097-8135). http://www.lifesciencesite.com. 92

Keywords: ICTs; Traditional, Blended; Virtual eLearning; eTeachers; eStudents; eAdministrators;

1. Introduction

New information technologies are creating a new global environment, which gets its power from technology, fuel from information and knowledge performs in the driving seat. These technologies provide the electricity of information-age to construct an information-society or knowledge-economy (Hameed, 2007). However, technological innovations and applications are founded on the education system of a country. For example, any digital initiative is fueled by a batch of ICT-professionals to develop and users to apply technologies for organizational objectives (VanFossen & Berson, 2008). Given that, it is the education system, which helps nations in harnessing ICTs for government, business, agriculture, banking and education by generating a skilled workforce (Nawaz & Kundi, 2010a). However, this requires the education system itself to be computerized first and then educate the masses in adopting computers into their informal and formal lives (Nawaz, 2012c; Nawaz, 2013).

Within education, ICTs have started emerging, for example, in the western European context, it is now common to integrate ICT into logistical, organizational and educational functions of HEIs (Valcke, 2004; Baumeister, 2006) showing that ICTs are changing the nature of work and the workplace for all the university constituents (Ezziane, 2007). ICTs are changing the organization and delivery of higher education because they are adopting alternatives to the traditional classroom pedagogy and developing a variety of eLearning courses (VanFossen & Berson, 2008). Research also suggests that ICTs offer new learning opportunities for students (eLearning), develop teacher's professional capabilities (ePedagogy) and strengthen institutional capacity (eEducation) and most universities today offer some form of eLearning (El-Hussein & Cronje, 2010).

2. From eLearning 1 to eLearning 2: The Evolution

eLearning ranges from a supplemental use of computers to entirely depending on ICTs for teaching, learning and education management. However, modern sophisticated uses of eLearning in some parts of the world has not reached this level instantly rather along the development trajectory of the ICTs themselves (VanFossen & Berson, 2008). As the computers and communication technologies became more and more advanced and increasingly supportive in the education environment, the eLearning models grew into more sophisticated tools for the university teachers, students and administrators (Nawaz, 2012a).

The computer based education has crossed the following stages so far:
1. eLearning was called computer-assisted learning, computer-based training or technology-based training, in 1970s and 1980s. Pedagogically, early programs mostly involved electronic page turning and were didactic in approach with transmitted knowledge as the purpose. The teachers used to transmit the

knowledge rather than facilitating the learner and learning process (Nawaz & Kundi, 2010c).

2. Other forms of educational-media came into market by the 1990s to supplement old eLearning and brought eLearning at the public level offering discussions and debates through communication technologies – a kind of "negotiated-knowledge (Gray et al., 2003)." Email and discussion groups are playing key role in this kind of eLearning (Valcke, 2004). In the late 1990s, innovations in computer hardware, computer software, and Internet technologies introduced a line of education products that established the eLearning industry (Nawaz et al., 2011a).

3. Around the end of 1990s, virtual learning environments (VLEs) have emerged with tools and techniques for the course-management and interactivity of teachers and learners through a long line of opportunities particularly, the web-baed applications, which enable not to simply deliver knowledge rather empower learners to develop research skills and capitalize on web to "harvest knowledge (El-Hussein & Cronje, 2010)." In contrast to instrumental education, 'Liberal' theory advises to harvest the intellect and develop analytical and critical thinking because liberal education views the search for knowledge as an active and interconnected social activity and not merely a recollection of facts (Nawaz, 2013).

2.1 Traditional Computer-based Learning

Conventional teaching emphasizes content where course is written around textbooks and teachers teach through lectures and presentations and so design the learning activities that the contents could be rehearsed (Dinevski & Kokol, 2005). Traditional computer-mediated instruction is based on a certain level of technical rationality and objectivist and behaviorist ideas, which emphasize that knowledge and reality exists out there therefore the pedagogy takes a the learner from basic to applied knowledge and ultimately into practice (Groth et al., 2009). In traditional learning there is low collaboration with teacher-centered learning contexts where there is one-way communication from the teacher to the learner and learning materials are disseminated in print format however, eLearning is now moving away from the traditional computer based learning (Kundi & Nawaz, 2010).

2.2 Blended Learning

It is the combination of face to face and computer based teaching and learning or a combination of traditional classroom practice with eLearning solutions. It is a shift from computer-based instruction where students learn from technology, to enabling students to learn with the technology (Young, 2003). Blended learning is also called multi-modal learning. It is a learning facilitation that incorporates different modes of delivery, models of teaching, and learning styles, introduces multiple media to the dialog between the learner and the facilitator (VanFossen & Berson, 2008). Furthermore, blended eLearning applications within the higher education sector are mushrooming (Nawaz, 2012d).

Since blending refers to the mix of traditional and digital methods of teaching, learning and administration, therefore all the institutes, which are beginning to computerize, come under the general umbrella of blended learning. The research shows that eLearning is enjoying a growing maturity, blending the technology with other forms of delivery such as face-to-face teaching (Gray et al., 2003). However, blended learning is not simply a matter of the combination of face-to-face and online instruction rather it depends on social interaction. Community building and maintenance is an integral part of Blended Learning, but all that can fail if there is mismatch between the facilities and individuality of students and lecturers (Nawaz et al., 2011a).

2.3 Virtual Learning

Virtual learning (VL) dates back to 1840, when Sir Isaac Pitman, the English inventor of shorthand, came up with the idea of delivering instruction via correspondence courses by mail. But only with the advances of modern technology has distance education grown to a multibillion dollar market (Dinevski & Kokol, 2005). Virtual university (VU) at vu.edu.pak is the best example of virtual learning with zero-physical contact but virtually 100percent connected with the students. The VU is a 'university without walls', an un-packed virtual institution thus 'The University' as an institution, seizes to exist. Where content and instructions are delivered through Internet, intranet, extranet, satellite TV, and CD-ROM with multimedia capabilities (Goddard & Cornford, 2007). The university, then, becomes far more externally oriented; an intermediary on the global stage, acting as collaborator, client, contractor and broker of higher education services (Nawaz, 2012b)

2.4 eLearning 2.0

The shift from Web 1.0 to Web 2.0 has also lifted eLearning to eLearning 2.0. From this perspective, traditional eLearning systems used instructional packets to deliver to the students through Internet. The traditional learning consisted of readings and preparing assignments, evaluated by the teachers. In eLearning 2.0, the new eLearning places increased emphasis on social learning, collaboration and use of social software such as blogs, wikis,

podcasts and virtual worlds like, 'Second Life' 'WebTrain' etc. The first 10 years of eLearning (eLearning 1.0) was focused on using the internet to reproduce the instructor-led knowledge where content was designed to lead a learner through the content. eLearning 2.0, on the other hand, is built around collaboration because it assumes that knowledge is socially constructed (Wikipedia, 2012).

3. Problems & Prospects

Research tells that more than half of all IT-projects become runways by overshooting their budgets and calendars thereby failing to deliver (McManus & Wood-Harper, 2004:3). Similarly, networked learning is appearing in the universities however, its overall impact is still very limited (Overbay et al., 2009). Several researchers have identified the problems for the development, use and integration of ICTs into teaching, learning and educational management (Qureshi et al., 2009; Nawaz et al., 2011c).

3.1 Development and Implementation Issues

eLearning is not merely another medium for the transmission of knowledge rather it changes the relationship between the teacher and learner (Gray et al., 2003). It requires new skills, competencies and attitudes amongst those planners, managers, teachers and trainers who are going to design and develop materials and support learners online. Thus, the development of innovative practices and the generation of new competencies in eLearning are fast becoming key issues (Memon, 2007). The focus is frequently placed on design and developing ICT-based environments and insufficient attention is given to the delivery process (VanFossen & Berson, 2008).

University constituents hold differing perceptions and attitudes about the role of technology in the classroom and at the same time power structures in higher education, and insufficient communication among the various groups' present obstacles to real technological and educational development (Juniu, 2005). There is evidence on the fact that during the eLearning project development very little communication occurs between users and ICT professionals or developers. In the development practices, people feel that they are increasingly controlled by machines and that the human factors of their work are disappearing. They find losing their privacy and unsure about the security of data and information (Nawaz et al., 2011a).

a)   Absence of the Native eLearning Models

The countries like Pakistan commonly try to follow the developments in the developed world. Walsham (2000:105) argues that "the approaches taken from the industrialized countries may not transfer effectively to the different environments of the developing countries." The research confirms that an eLearning model in US can be implemented in some Asian country with the expectations of same results (Mokhtar et al., 2007; Koo, 2008). There are several differences in the context of both the countries. The developing countries are borrowing foreign models which are also foreign to their environment therefore; the wanted results are emerging neither in volume nor in quality unless a contextual rethinking is accelerated (Nawaz et al., 2011b).

b)   No or Poor Local Research

The main reason for the gap between theory and practice is the lack of local research to record the local context, user views and requirements and thereby plan accordingly. This issue is frequently discussed in academic institutions with lack of funding and facilities as the major cause for the problem. Whatever the reason, it is not possible to harness new ICTs without first measuring the pulse of local perceptions and mindset (Hameed, 2007). The researchers report over and over that technology integration in any context depends on how the technology fits into the existing social purposes and practices of a community (Overbay et al., 2009). Similarly, HEC's website asserts that the ICT to support higher education reform and the development of a research culture in Pakistani universities is essential (HEC, 2011).

c)   User-Participation in the Development Process

The biggest hurdle in contextualizing the eLearning environments is the lack of participation in the development trajectory of digital projects. The projects mismatch the context because the users are not contacted thoroughly to explain different aspects of their context before the developers who can then embed these user requirements into the new digital systems (Groth et al., 2009). Users complain about their deprivation from having a say in the eLearning systems. The problem is more sensitive and touchy in developing countries where demographic differences are far more tense and implicative. There are many problems for this lack of user participation including demographic differences and diversities in perceptions and attitudes about ICTs, their development and uses (Nawaz, 2013).

3.2 Use and User Concerns

Following issues are constantly reported by the researchers as the leading barriers from the user perspectives:

1.   System Compatibility: The greatest challenge in learning environments is to adapt the computer-based system to differently skilled learners. If the environment is too complex the user will be lost, confused or frustrated (Sirkemaa, 2001).

Technology is by nature disruptive, and so, demands new investments of time, money, space, and skills and changes in the way people do things (Aaron et al., 2004). Furthermore, face-to-face communication is critical for classroom social relationships and interpersonal processes while, online technologies have reduced support for social interaction. Although emotions can be conveyed through e-mail or chatting, it does not replace the fundamentals of our socio-emotional well-being (Overbay et al., 2009). Thus, the barriers can make technology use frustrating for even the technological experts (Nawaz et al., 2011a).

2. Dependence on Technical Department and Professionals: Nawaz & Qureshi (2010a) note that a very critical problem in the use of eLearning is the dependence of teachers, students and administrators on the ICT-department or technical support needed by the users across the using process. Similarly, users do not only depend on ICT staff for technological support but also face pressures from the pedagogues to demonstrate the role of technology in supporting constructive, authentic, and cooperative learning (Nawaz et al., 2011c). Research suggests that only the technology training cannot ensure better use of new tools, users also need continuous technical and human resource support for technology integration (Nawaz & Zubair, 2012b).

3. Change Management: Within universities, the implementation of ICT is not an easy task for instance, decision makers and academics are sometimes reluctant to change curricula and pedagogic approaches; teaching staff and instructors lack incentive and rewards in a system where professional status and career trajectories are based on research results rather than pedagogic innovation (Groth et al., 2009). There are many obstacles for implementation of the ICT in universities. Some of them are classical, as are e.g. inertia of behavior of people, their resistance to changes, etc. If the ICT should serve properly, it should enforce an order in all folds of the university life. People who lose their advantage of the better access to information have a fear from order (Nawaz et al., 2011c).

4. Political Sustainability: Political sustainability refers to the acceptance of new system by the administrators handling the policy and leadership matters in the universities, particularly, in a bottom up approach, the grass-roots may be better placed to understand and implement innovation, but there can be a lack of physical and political support (Overbay et al., 2009).

There is a lack of feedback towards higher levels of decision and general policy, and little impact on strategy definition and implementation thereby creating resistance on the part of administrators to help and cooperate (Nawaz & Qureshi, 2010b).

3.3 Current Conditions in Pakistan
a) Multiplicity of Digital-Divides
     The digital divide in higher education refers to the 'division of knowledge, expectations, and needs that influences the access to information, what technology is needed, and how it should be integrated in the classroom (Juniu, 2005). A commonsense approach to overcoming this gap is to create partnerships among students, faculty, computing staff, and administrators (Kopyc, 2007). The multiplicity of perceptions, theories, and attitudes of users towards ICTs creates digital divides within the environment of higher education (Nawaz & Kundi, 2011). Those who support technology, they seek for it and therefore reduce the impacts of digital divide for them. But users who don't the support technology; they adopt it passively thereby widening the digital divide for themselves. The digital divide categorizes individuals, groups, communities, and nations according to their access to ICTs including Internet (Nawaz, 2012a).

b) Distance between Theory & Practice
     There are several gaps between whatever is presented in theory and what happens in reality and this is evident at all levels of governments, institutions, groups and individuals in the eLearning environments of developed and developing countries including the HEIs of NWFP, Pakistan (Sahay, 2004). For example, when formulating policy, administrators tend to favor the reformist approach, but practically they are generally technocratic (Groth et al., 2009). There is a phenomenal gap between the rhetoric about information society and the practical implementation of ICT at the institutional levels (Nawaz. 2013).

c) Lagging behind on the Paradigm-Shifts
     Furthermore, we are still stuck with the old methods of teaching, learning and educational management. The traditional institutions are cannot cope with the growing demand systematically (Baumeister, 2006), our teaching is still teacher-centered and student-centric pedagogy is yet in the documents and theory or at the most in discussions (Overbay et al., 2009). The market is changing fast but our education system, particularly higher education is not catching up with the emerging demands of information society. In Pakistan, the gap between the technological skills needed for the new economy and the traditional education institutions are increasing fast (Nawaz et al., 2011a).

4. Opportunities

Education determines, more than anything else, a country's prospects for human development and competitiveness. Fortunately, the information revolution offers some extraordinary opportunities in education. Common sense tells us that we should teach different learners differently. Parents demonstrate this intuitive wisdom when they communicate differently to their children according to their specific ages (Dinevski & Kokol, 2005). Universities and even smaller departments within organizations are becoming capable to afford sophisticated digital systems (Ezziane, 2007). Electronically supported processes in the teaching and administrative spheres do not seem to be displacing traditional ways of doing things. Rather, the outcomes are often a matter of the new 'virtual' and the old 'traditional' notions of the university co-existing in a tense relationship (Nawaz, 2012a).

4.1 Availability of Digital Technologies

The developing countries are not supposed to produce hardware because firstly, hardware is becoming inexpensive as well as a huge number of 'Branded Computers' are transported to the developing and poor countries, which are hi-tech but very cheap in comparison to the new computers of same model and specifications (Juniu, 2005). So availability of hardware is not a big deal in the developing world. Similarly, software is also available not through standard channels rather piracy but with the inception of Web 2.0 and FOSS, it is gradually becoming very cheaper for the developing countries to capitalize on the free of cost software that is available online and which is also coming in a variety to serve different purposes of applications in the teaching, learning and administrative functions in the HEIs (Kundi & Nawaz, 2010).

4.2 FOSS: Free and Open Sources Systems

It has been found that the FOSS are becoming a culture in higher education, for example, in the February 2006 survey of U.S. higher education chief information officers (CIOs), it was found that two-third of the CIOs have either adopted or seriously planning in the favor of FOSS. The history of social software is as long as the history of computers itself, for example, it took the Web less than four years to attract 50 million users while radio needed almost 40 years to gain the same number of users (Nawaz & Kundi, 2010c). Libraries are putting more and more material on the Web and thus becoming virtual libraries. For example, the University of Texas made a move toward a bookless library system by posting 60,000 volumes online and trying to bring all their collections online (Nawaz, 2012d).

4.3 Mushrooming Local Digital Industry & Professionalism

The biggest opportunity available to them is the growth of local ICT professionals who are basic to the successful use of new technologies. Pakistan can capitalize on its 'local ICT resources' to bring digital revolution. During the last decade Pakistan is taking visible steps in this regard. A huge amount of money has been invested in computerizing the HEIs to produce local ICT professionals, which are indispensable like infrastructure (Overbay et al., 2009). Given the benefits of using ICTs in educational business, all the nations are trying hard to digitize thereby casting mounting pressure on the HEIs to play active role by making local availability of knowledge and skills and, as a result, regionally engaged universities can become a key local and national powerhouse for development, especially in less developed regions of the globe (Nawaz & Zubair, 2012b).

4.4 Local/ National/ and International/ Partnerships

The use of new collaborative technologies requires team work more than we are used to. Networking and social software helps users in working collaboratively while still preserving their personal preferences and styles (Juniu, 2005). The collaboration requires partnerships between the university constituents (teachers, students and administrators) as well as at the national (partnerships between the universities and public and private sector) and international partnerships between world organizations and states (Kopyc, 2007). For example, the emergence of a strong Indian IT industry happened due to concerted efforts on the part of the Government, and host of other factors like private initiatives, emergence of software technology parks, and public private partnerships (Nawaz et al., 2011c; Nawaz, 2013).

5. Conclusions

The researchers of eLearning have identified 'top-management-support' as a critical factor in the making or breaking of an eProject for HEIs anywhere on the globe. The government support and facilitation is on the top but once the government takes the initiative then the commitment and involvement of the top management within every institution makes the difference (Ezziane, 2007). The role of top management is central in educational technology integration because many teacher or student-initiated projects have failed due to the absence of support from above. Thus, the successful implementation of an eProject for educational technology is the support from senior administrators (Nawaz, 2013).

The provision of a robust ICT-based infrastructure is challenging in the sense that it is not a one-shot activity (Loing, 2005). It is not like that, the technical resources are purchased once for all. Computer-technologies are rapidly changing, which require 'Updates' by the institutions otherwise they will lag behind fellow and competitive institutes in technological sophistication (Koo, 2008). So creation, maintenance and updating of technical infrastructure is a process which continues for ever. Furthermore, while developing and/or updating, most of the HEIs opt for cutting-edge technologies however, experience shows that mostly these 'leading-edge technologies turn into bleeding-edge technologies' by eating up budgets and delivering nothing special (Nawaz, 2012c).

The importance of user participation in the development and use of eLearning is the main route to contextualizing the new technologies. When users are not heard, the developers mostly embed their self-conceived user-perceptions into the system, which then appear incompatible with the real user-demands (Overbay et al., 2009). Thus, in the context of eLearning projects, "user empowerment is the granting of unprecedented decision-making powers to the primary agents in education: teachers and students (El-Hussein & Cronje, 2010). The appointment of 'Role Models from the User-groups' will work as a disciplinary insiders or faculty peers in their home departments and motivate their colleagues through discourse on the advantages of ICTs for users (Nawaz, 2012d).

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14/11/2013