

Integrating Educational Technologies In Higher Education of the Developing Countries

Allah Nawaz

Department of Public Administration, Gomal University, Pakistan
profallahnawaz@gmail.com

Zahid Awan

Department of Business Administration, Gomal University, Pakistan
Zahidawan1967@gmail.com

Bashir Ahmad

IC &IT, Gomal University, Pakistan
bashahmad@gmail.com

Abstract

Successful eLearning projects are reportedly dependent on the quality of 'integration' between new technologies and the existing organizational and managerial levels. This integration is not simply connecting the cables and devices rather it has to happen at the planning, development and use levels of eProjects when creating eLearning environments. Besides considering different levels of integration, the management has to handle several issues which work as bottlenecks to successful integration practices. This paper is an effort to first unearth and then juxtapose major factors of integrating eLearning with the practices of higher education institutions (HEIs) in the developing countries like Pakistan with a view to synthesizing the results into a theoretical model.

Keywords: HEIs, ICTs, eLearning, eProjects, Integration

1. Introduction

Information communication and technologies (ICTs) are increasingly becoming accepted as important tools for supporting educational and organizational learning and teaching (Sirkemaa, 2001; Drinkwater et al., 2004). Attempts to integrate these technologies into teaching and learning have a history as long as the technologies themselves (Aaron et al, 2004). ICTs are viewed as a powerful tool for social change and these are also attributed powers far beyond any other technology (Sasseville, 2004). Thus, every country is struggling to manage this change, for example, given the technology driven nature of our global, information-based society, lack of technology integration among teachers in American classrooms is a major concern in education today (Zhao & LeAnna-Bryant, 2006; Nawaz & Kundi, 2006; Nawaz et al., 2007).

Our global culture is no more just literary or artistic, it is now more technologic and scientific (Sasseville, 2004). Technology has become integrated into our consciousness so quickly that we cannot fully absorb the full range of changes that have happened (Drucker, 2006; Nawaz & Kundi, 2007). There is a need to equip teachers with not only the technology skills, but also the knowledge and command to integrate the technology into the classroom otherwise they will 'teach people how to use the technology, not how to solve educational problems' (Chan & Lee, 2007). For example, online learning environments have been

centered more on technological aspects than applications of pedagogy (Phillips et al., 2008; Kundi & Nawaz, 2010).

In the digital age technology is changing fast thereby creating compatibility and flexibility to adapt to different devices and platforms are important issues in infrastructure (Sirkemaa, 2001). Technology integration in higher education is not unanimously accepted by scholars and teachers and even some identify its dangers for education, for example, computerizing education could limit the diversity of pedagogical approaches to the only model of technology-based performance (Sasseville, 2004). Furthermore, technology training alone cannot ensure that teachers would infuse technology into their routine instruction and a radical change in their instructional practices would occur. They need technical and human resource support for continuous technology integration (Zhao & LeAnna-Bryant, 2006; Cagiltay et al., 2006).

2. ICTS in Higher Education

ICTs help in the effective use of equipment and programs to access, retrieve, convert, store, organize, manipulate and present data and information. E-learning is described as the use of ICT to enhance or support learning and teaching in education (Gay et al., 2006). Most universities today offer some form of eLearning (Kanuka, 2007). So computers are already changing the organization and delivery of higher education. The pedagogical and socio-economic forces that drive higher learning institutions to adopt ICTs in teaching and learning are: increased access to information; greater communication; synchronous and asynchronous learning; increased collaboration; cost-effectiveness; and pedagogical improvement (Sife et al., 2007; Nawaz & Kundi, 2010a).

The exponential development of increasingly sophisticated communication technologies has prompted universities, companies and educational institutions to experiment with alternatives to the traditional classroom teaching methods, thereby leading to the evolution of a wide range of online courses (Favretto et al., 2003). eLearning covers a continuum of educational technologies. On one end are the applications like PowerPoint with no or little impact on learning/teaching strategies or institution while on the other end are virtual learning environments (VLEs), which have significant impacts upon the strategies and educational organization. The educational technology is playing supplemental, blended or hybrid (comprising a mix of face-to-face and fully online instruction), to fully virtual roles in education (Sife et al., 2007; Nawaz & Qamar, 2010; Nawaz & Kundi, 2010).

Over the years, educational technology has been providing both teachers and students with more options and flexibility in their teaching and learning practices. With the availability of Internet, educational technology becomes increasingly indispensable in the field of education (Oh & Russell, 2004). Internet-based educational technology with digital contents can contribute to substantial improvements in education. The email and video-conferencing are facilitating organizational learning by enabling improved forms of communication and sharing (Laffey & Musser, 2006). Over the past couple of years, approaches and models of digital literacy have started to merge thereby bringing paradigm shifts not only in the way of computing but also the perceptions of technology (Ezziane, 2007; Kundi & Nawaz, 2010).

E-Learning has progressed through a number of stages and transformations over the past thirty years. In the 1970s and 1980s, it was called Computer Assisted Learning, Computer Based Training or Technology Based Training. By the 1990s this learning was being supplemented by other media, particularly the e-mail and discussion groups. Today virtual learning environments (VLEs) provide facilities for both the course-management and interaction via a range of communication tools (Gray et al., 2003). Thus, the expanded use of computers in education continues despite research having failed to show definite benefits for learners (Cagiltay et al., 2006; Nawaz et al., 2007). However, there are a number of challenges that face universities in developing countries while implementing their eLearning systems for example, African universities, which should be in the forefront of ensuring Africa's participation in the ICT revolution, are themselves ill-prepared to play this leading role because the information infrastructure of these universities is poorly developed and inequitably distributed (Sife et al., 2007).

3. Integrating ICTS in HEIS

Designing and delivering e-learning is not simply a matter of selecting a tutoring team with expertise in subject matter and technical skills, but is also finding educationalists with pedagogical, information and communication skills required to manage online learning (McPherson & Nunes, 2004). Currently there is no system or platform that has been widely adopted by either the educational or corporate sector. There is no technology platform that suits every organization, discipline or program (Drinkwater et al., 2004; Nawaz & Kundi, 2006). Thus, even despite the best of intentions, many of these projects ultimately fail. There are many reasons for this including: inappropriate technology, poor-implementation, lack of follow-up, inadequate support for the program, difficulties in creating and sustaining a project within the changing social and political environment (Wells, 2007).

Technology is by nature disruptive therefore demands new investments of time, money, space, changes in the way people do things, new skills and so on (Aaron et al, 2004). ICT not only brings changes in the way that we deal with information, it also changes the way we think and how we view our world. This type of cultural change also creates a form of stress, fuelled by the inability of the individual to catch-up with the speed of cultural transformation (Sasseville, 2004). ICT is changing the face of education, nature of work and the workplace, for example, the knowledge revolution has assisted countries to develop knowledge-based industries and thereby earn significant rewards. But this requires a digitally literate workforce who command and can harness ICT (Ezziane, 2007; Nawaz & Kundi, 2010c).

A number of communities have an interest in and perspectives on the relationship between people and ICTs including industry, academia, designers, policy makers and other institutions (COST Action 298, 2007). However, ICTs have not penetrated substantially in many higher learning institutions in most developing countries due to many socio-economic and technological barriers (Sife et al., 2007). For example, in India, despite research and testimony that technology is being used by more faculty, the diffusion of technological innovations for teaching and learning has not been widespread, nor has IT become deeply integrated into the curriculum (Mehra & Mital, 2007). Low collaborative activities and the significant preference of print over virtual forms of presentation prove the prevalence of traditional dynamics of teacher-centered learning where there is one-way communication flowing from teacher to learner and printed materials are distributed among the students (Allan, 2007; Kundi & Nawaz, 2010).

There is also great uncertainty among decision-makers and managers as well as among developers, trainers and learners: instructors find themselves confronted with a new role in which they are tutors and facilitators for learning processes (Ehlers, 2005). The availability of the technology itself will not instigate the aspired goals. Cultural and pedagogic change should occur for the technology to be implemented to its full effectiveness and achieve the goals it was designed to fulfill (Allan, 2007). In some cases, integrating technology into the teaching-learning transaction has been found to transform the teacher's role from being the traditional "sage on the stage" to also being a "guide on the side", and student roles also change from being passive receivers of content to being more active participants and partners in the learning process (Mehra & Mital, 2007; Nawaz & Kundi, 2010c).

3.1 Levels of Integration

It is experienced that educational cultures can pass through different phases of maturity regarding change, improvement, decline or no change at all (Aaron et al, 2004). According to Dinevski & Kokol (2005) the contemporary eLearning environments are attributed with the shifts from:

1. linear to hypermedia learning,
2. instruction to construction and discovery,
3. teacher-centered to learner-centered education,
4. absorbing material to learning how to navigate and how to learn,
5. school to lifelong learning,
6. one-size-fits-all to customized learning,

7. learning as torture to learning as fun, and,
8. the teacher as transmitter to the teacher as facilitator.

eLearning is a multi-dimensional phenomenon which needs to be understood not only in intrinsic terms but as it relates to the societal environment within which it is applied (Aviram & Eshet-Alkalai, 2006). For example, teachers are advocated and pushed to use technology by various agencies including media, educational government, professional associations, and parents (Zhao & LeAnna-Bryant, 2006). Usually, administration provides the original momentum by providing support for faculty through adequately funding the IT-professionals to their maximum possible satisfaction (Ezziane, 2007).

Whatever the quantity and quality of ICT related facilities, there is need to integrate technologies at the planning, development and use levels of an eLearning system. IT-planning must be in tune with the organizational planning (Aaron et al, 2004; Stockley, 2004; Ezziane, 2007). eLearning development practices must be aligned with the developer and user requirements (Carey & Gleason, 2006; Ehlers, 2005; Buzhardt & Linda, 2005) and user-training must be anchored on an analysis of user-needs (Graff et al., 2001; Sasseville, 2004; Arulchelvan & Viswanathan, 2006; Zhao & LeAnna-Bryant, 2006).

3.1.1. Integration at the Planning Levels

Successfully integrating them hinges on clearly identifying pedagogical goals and then planning for the many decisions that technological change demands (Aaron et al, 2004). Developing and implementing a strategic plan that includes educational technology is often a difficult and complex process. A strategic plan for educational technology refers to both the technological infrastructure and the manner that educational technology will be adopted in the teaching and learning environment (Stockley, 2004). Teachers need to identify needs, plan, implement, and assess classroom instruction through the collaborative use of technology and other resources (Willis, 2006).

In educational technology planning the strategic plan should be connected to both the institutional mission and vision, and it should fit into the overall institutional information strategy, culture, values, as well as history (Stockley, 2004). The planning for the integration of teaching technologies can become systematic through a variety of tools and techniques. Since eLearning development is an intensely interdisciplinary activity therefore it involves many players and processes acting simultaneously, interdependently. Any attempt to model it must envision a dynamic, even cyclical process of planning, implementation, evaluation and revision. This should not surprise us, because it mirrors education itself (Aaron et al, 2004).

To ensure that the plan does not become a static document, it is important to identify who is responsible for the plan and for updating it. It takes five to ten years to realistically make changes to both the culture and climate of an institution (Stockley, 2004). Teachers are under pressure to use ICTs but they face several barriers when attempting to use new digital gadgets. Barriers can make technology use frustrating for the technologically sensitive, let alone the many teachers who are somewhat techno-phobic. HEIs must strategically develop IT integration plans that help overcome these obstacles thereby addressing the needs of diverse pedagogical agendas and multiple levels of comfort with technology (Ezziane, 2007).

3.1.2. Integration at the Development Levels

Despite the theoretical benefits that e-learning systems can offer, difficulties can often occur when systems are not designed with consideration to learner characteristics. Such differences between learners may be defined in terms of nationality, gender, and cognitive learning style (Graff et al., 2001). Although technology developers are responsible for optimizing the usability of their products, the education community (e.g., teachers, administrators, district superintendents, legislators, etc.) must be responsible purchasers and consumers of educational technology (Buzhardt & Linda, 2005). One of the biggest challenges facing application developers is the integration and interoperability - getting applications to talk to each other (Carey & Gleason, 2006; Nawaz & Kundi, 2010b).

Teachers' acceptance plays a critical role in the successful use of computers in the classroom. However, other players like school boards, university administrators, and government agencies control goal-setting,

working conditions, performance evaluation, and the resource allocation (Aaron et al, 2004). Researchers suggest that the universities in developing countries should adopt eLearning to improve teaching and learning processes where pedagogical, technical and cost issues should be taken into account for each specific technology when integrating ICTs in teaching and learning practices (Sife et al., 2007). The question is whether to use a ready made solution from an external supplier or to develop a domestic solution. We have to share capabilities and resources with the external suppliers because it is just an understanding of the reality and changing role of the university computing services (Vrana, 2007).

Software developers have to go beyond the paradigms of their own discipline and seek interdisciplinary exchange with teachers, authors and learners (Ehlers, 2005). It is expected that as the institute builds up its infrastructure over the years and the faculty gains experience, the pedagogy shifts from pure lecture method to instructional technology. This implies that there is a statistically significant relationship between numbers of years the institute has been in existence with preference for more advanced mode of teaching (Mehra & Mital, 2007; Nawaz & Kundi, 2010c).

3.1.3. Integration at the Use Levels

A literature survey reveals that following uses of ICTs can be identified in higher education:

1. As an Object: Learning about ICT itself through a formal course designed for a particular level of education and students. This digital course prepares the students for the use of ICT in education, future occupation and social life.
2. ICT as an 'assisting tool': Computers are used as a tool for making assignments, data collection, documentation, communication and conducting research in any subject. This is the 'enabling-role' of ICTs in education.
3. ICT as a medium for teaching and learning: This refers to ICT as a tool for teaching and learning itself, the medium through which teachers can teach and learners can learn. It is applied in different forms including drill and practice exercises, educational networks and simulations.
4. ICT as a tool for organization and management in schools: It is the administrative use of ICTs as to tool for education management. In technical jargon, it is referred to as eAdministration (Jager & Lokman, 1999).

Despite the theoretical benefits that e-learning systems can offer, difficulties can often occur when systems are not designed with consideration to learner characteristics. Such differences between learners may be defined in terms of nationality, gender, and cognitive learning style (Graff et al., 2001). Teachers are still in the process of evaluating the proper way of using information technology for teaching and learning and that this technology has not yet been completely integrated into their craft as other more traditional tools (Sasseville, 2004). There have been huge investments by the educational sector on the establishment and maintenance of educational media for students but there has been very little and sporadic knowledge about the usage of such media in education (Arulchelvan & Viswanathan, 2006).

Technology integration training is effective at a basic level, but it alone cannot lead to higher levels of technology integration (Zhao & LeAnna-Bryant, 2006). There is need to consider several other aspects of eLearning beyond technical training. It is precisely because of the multifaceted character of the term that meanings need to be established at the outset. The sense varies depending on the context to which it is applied. The political meaning covers more or less the idea of modernizing the whole range of education. The economic meaning defines e-learning as a sector of e-business. The educational meaning, which places e-learning in an environment of teaching and learning as a particular approach for designing new instructional environments or new areas for research. The relationship between eLearning, academic environments and academic teaching is of a complex nature because of the ambiguous meaning of the term as well as the variability of its consequences (Aviram & Eshet-Alkalai, 2006).

3.2 Problems of Integration

Many teacher educators and teacher education programs have been experimenting with the use of

technology over the years. Despite their efforts, there are still challenges and concerns regarding teacher's ability to integrate technology into teaching and learning activities and their comfort in doing so (Oh & Russell, 2004). Integrating technology into the classroom is not unanimously accepted among scholars and teachers and, according to some, it entails many dangers. For instance, computerizing education could limit the diversity of pedagogical approaches to the only model of academic efficiency and performance implicitly promoted by technology (Sasseville, 2004). There are both 'comfortable and uncomfortable zones' for the developers and users of eLearning in HEIs (Valcke, 2004; Loing, 2005; Qureshi et al., 2009).

However, many universities have been experimenting with the use of technology over the years. Despite their efforts, there are still challenges and concerns regarding teacher's ability to integrate technology into teaching and learning activities and their comfort in doing so (Oh & Russell, 2004). It is noted somewhere that the marriage between education and technology has often been rocky (Buzhardt & Linda, 2005). The universities still face a lot of challenges in undertaking such a process like lack of systemic approach to ICT implementation, awareness and attitude towards ICTs, administrative support, technical support, transforming higher education, self development (Sife et al., 2007).

3.2.1. Borrowed Models

Most of the development models in the developing states are borrowed from the west. Given that they hold different resources and work in varied environments therefore, integration of new technologies with the existing set up becomes troublesome. This has been identified as a problem even in the Chinese environment. In china, most current scholarship on technology in education tends to use American settings as a model while over there resources abound, it is therefore necessary to address other factors that demand greater attention in the development and implementation of eLearning (Crichton & Kopp, 2006).

It widely reported that the organizational context into which ICT is integrated is a major factor to determine the future of eLearning practices (Tinio, 2002; Oliver, 2002; Nyvang, 2003; Sasseville, 2004; Loing, 2005). Furthermore, there are documented differences between the success and failure factors in the developed and developing countries with regard to the development and use of eLearning in HEIs. Unless these differences are skillfully identified and accommodated as such into a domestically developed implementation model, eLearning efforts are reported to be caught in problems in the construction, use and progress of the eLearning environments in the institutions for teaching, learning and administrative purposes (Nawaz & Kundi, 2010a, 2010b).

3.2.2. Perceptual Diversities

Understanding teachers' perceptions of technology integration training and its impact on their instructional practice will help both the technology training programs and social studies (Zhao & LeAnna-Bryant, 2006). Decisions made by the teacher about the use of ICTs in the classroom is likely to be influenced by multiple factors including: demographic factors; accessibility of hardware; experience in use of instructional technology, perceptions about usefulness like encouraging interaction, teaching more systematic, creativity in the faculty and the students, intellectual enhancement of the faculty, and ease of use (Mehra & Mital, 2007). Thus, there is a continuum of perceptions and attitudes of eLearning-users, with those who dislike new technologies on one extreme and those who are their promoters on the other end, while many groups can be located at different points between the two extremes (Nawaz & Kundi, 2010b).

Technological change is not perceived as a collective experience - or an experiment in social change - but more of a personal challenge. Solutions to the problem of integrating technological innovations into the classroom are more related to the individual teaching practice (Sasseville, 2004). While most educators appear to acknowledge the importance and relevance of ICTs within teaching, difficulties nevertheless continue to be experienced within the processes of adopting these technologies. Significantly, there is a gap between the valuing and relevance of 'new skills' and the extent to which they are practiced (Knight et al., 2006). Contextual and demographic impacts on user perceptions and attitudes have widely been investigated and reported as critical points for the decision makers to consider when planning and implementing eLearning solutions in the HEIs. Researchers are constantly identifying the incompatibility of eLearning models with contextual requirements of specific countries, particularly in the developing

world (Nawaz & Kundi, 2010a).

Research has repeatedly shown that social studies teachers are less likely to use technology in the classroom than teachers of other disciplines (Zhao & LeAnna-Bryant, 2006). Similarly, teachers of the humanities subjects did not use computers while a high proportion of teachers of the Mathematics and Science subjects did use computers (Wims & Lawler, 2007). There is both difference of kind as well as difference of degree between the conceptions and behavior of users about the nature and role of ICTs in higher education. The research reveals that these differences of attitudes stem from the contextual factors relating to individual, group and organizational characteristics (Mehra & Mital, 2007).

3.2.3. Instrumental Role of Educational Technologies

The global diffusion of ICTs should not be guided by a technologically deterministic approach but situated in the context of an appropriate development and critical theory of technology approach, which takes into account a broad range of social, cultural, political and economic enabling factors (Macleod, 2005). The approaches used for development mostly take the process purely technically and ignore or underplay the social dimensions of the eLearning development processes (Radosevich & Kahn, 2006). Debate about whether education should be focused on the current job market (instrumental) or intellectual attainment (liberal) is ongoing. Most IT education is ineffective because it is too technical and not at all concerned with local contexts and real world problems (Ezer, 2006).

Instrumental theory: It is the most commonly held belief, which views technology as a 'tool' without any inherent value (neutral) and its value lies in how it is used so a one-size-fits-all policy of universal employment of ICTs (Aviram & Tami, 2004; Macleod, 2005). Instrumental education is based on the premise that education serves society. An emphasis is placed on the relevance and utility of education, where students are expected to apply their knowledge vocationally, contributing to the economy. The risk of such a system is that students are encouraged to simply meet some identified need, rather than think critically with the purpose of achieving some sort of personal or communal advancement (Ezer, 2006; Kundi & Nawaz, 2010).

3.2.4. Inadequate User Training

A large body of literature supports the idea that technology training is the major factor that could help teachers develop positive attitudes toward technology and integrating technology into curriculum (Zhao & LeAnna-Bryant, 2006). Teachers need training in environments that support technology integration in curriculum areas that can be replicated in their own classrooms not training that focuses on software applications and skill development. Teachers need to identify needs, plan, implement, and assess classroom instruction through the collaborative use of technology and other resources. Teachers are moving beyond administrative uses of technology to instructional uses that enhance teaching and student learning (Willis, 2006).

3.2.5. Implementation Problems of eLearning Projects

Implementation of ICT in higher education is not a trivial process. It is however a process leading to a number of challenges and problems. The implementation activity is composed of three processes: Selection of ICT; Adaptation of ICT and Change of practice with ICT (Nyvang, 2006). There are many obstacles for implementing ICTs in HEIs including resistance to change users' digital literacy etc. If the ICT is expected to serve properly, it should serve all the university constituents simultaneously (Vrana, 2007; Qureshi et al., 2009).

Practicalities are still confronted with the so-called 'go-live' problems such as user dissatisfaction with newly introduced systems, mismatches between a new technology and the existing work practices, underestimating the technological complexity for employees, and inefficient end-user support (Bondarouk, 2006). Implementation of networked learning in higher education is a complex task. It affects the way students learn, teachers teach and often the way administrators administrate as well as the way leaders lead the university by challenging existing organizational, pedagogical and technological practices (Nyvang, 2006). However, this implementation process is autonomous and what has been achieved is relatively

unknown. Researchers have found that many Asia-Pacific countries including Malaysia lack the proper framework to assess ICT implementation in higher education (Mokhtar et al., 2007).

Bearing in mind the continuous development of ICT it seems important to recognize that implementation isn't going to be a one time event. One of the very first steps needed in order to qualify the facilitation of the change processes is to actually understand what implementation of ICT in learning environments is and how it affects practice. In addition implementation is understood firstly as a social process and secondly a process in which competent individuals decides to start to use ICT (Nyvang, 2006).

3.3 Managing Technological Integration

Universities are now expected to contribute to society by widening access to higher education, continuing professional development, applied research, contributing to local economic impact, and improving social inclusion (Beebe, 2004). The burden of bridging this gap between technology and teachers is placed squarely in the laps of teachers. They face the daunting task of not only using the technology, but also showing the expected benefits of its use. Another barrier often cited is the contextual restraints of school settings which tend to hinder the implementation of any significant change. However, we rarely look to the specific technology itself and its usability as contributing to the lack of technology integration in classroom practices and instruction (Buzhardt & Linda, 2005).

Individuals can achieve far more by working collaboratively in groups rather than on their own. The learning process is not merely an active process but rather a reflective one; the practical experiences combined with exchange of ideas and collective reflection creates deeper understanding and generates new knowledge (Drinkwater et al., 2004). Many exciting applications of IT in classrooms validate that new technology-based models of teaching and learning have the power to dramatically improve educational outcomes. But, these technologies can fail unless other simultaneous innovations in pedagogy, curriculum, and school organization are coupled to the usage of instructional technology (Mehra & Mital, 2007; Phillips et al., 2008).

In the Western European context, ICTs are now integrated into major logistical, organizational and educational processes of higher education (Valcke, 2004). ICT is generally welcomed by teachers because it is quickly becoming a common way of acquiring knowledge, but technology is always subservient to the learning goals set by the teacher (Sasseville, 2004). While the introduction of ICT can contribute to learning, on its own it cannot deliver learning. There is need to integrate pedagogy and learning models within the appropriate technology to make a VLE successful. Each institution should employ its own model of learning to ensure that the technology adopted can enhance their learning process (Drinkwater et al., 2004). The social grounds for an IS development cannot be neglected in an eProject for eLearning (Ågerfalk et al., 2006).

It is important to create an environment which helps students to learn according to their own learning styles, for example, some learn fast and advance rapidly while others prefer to learn at a slower pace and repeat. Likewise, some like working alone whereas others prefer to working in groups. Information technology allows customizing ICTs so as to accommodate different learning styles (Sirkemaa, 2001). ICT can be seen as a means to define oneself professionally. Teachers are seeing themselves, whether they like it or not, at the forefront of a new wave of teaching. The use of ICT, even minimally, is helping them build a positive self-image as professionals (Sasseville, 2004). e-learning will widen our picture of education (Aviram & Eshet-Alkalai, 2006). People acquire their technology literacy in two ways: formally through school programs or in the workplace, and informally, whether at home, from friends, or by themselves (Ezziane, 2007).

4. DISCUSSION

The increasing speed and dissemination of ICT is already showing that our local universities and learning and research communities are no longer strictly local. They have gone global (Beebe, 2004). The use and effect of ICT in education has been the source of some research over the past years (Drinkwater et al.,

2004). Thus, our higher education has been on the rollercoaster for the last several years when first personal computer in 1980s and then Internet in late 1990s changed everything not only explicitly in terms of using innovative digital devices, but also implicitly in terms of perceptions and approaches to e-Learning elevating from behaviorism through cognitive to social constructivism or from transmitted knowledge to negotiated and today harvested knowledge (Kundi & Nawaz, 2010).

In education, many factors complicate the process of innovation. Technological, social and pressures from the work world encourage educational institutions to evolve. Not a domain that readily accepts change, education reacts gradually to these external pressures (Aaron et al, 2004). However, the decision about 'how to integrate?' should be based on an understanding of best practice plus an awareness of costs and benefits (Drucker, 2006). The research shows that that eLearning is more complex than lecture method; it is intimidating and teachers feel that due to eLearning practices they have lost the personal touch to connect with the students in a better way and that the instructional technology requires high administrative support than lecture method (Mehra & Mital, 2007).

Teachers believe that what really defines them is the ability to establish a bond between teacher and student; teaching is, first and foremost, the ability to use that bond to create a positive and productive way of learning. Human relations still remain at the core of their craft (Sasseville, 2004). There is no doubt that teachers play a crucial role in the adoption and implementation of ICT in education, however, studies show that teachers lack the necessary ICT knowledge and skills (Allan, 2007).

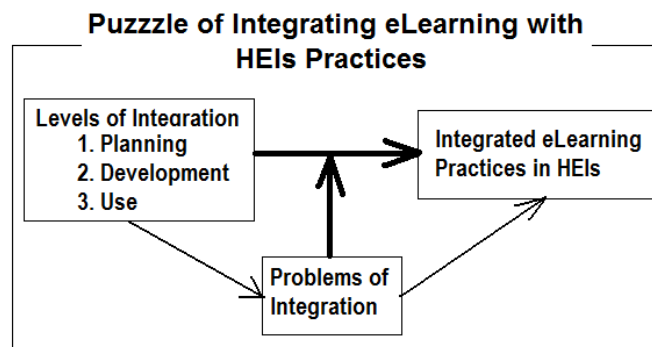


Figure 5.1 Integration Model of eLearning in HEIs

Figure 5.1 portrays a schematic diagram of the variables and their interrelationships in the integration process. Efforts made at different levels of integration (independent variable) lead to the integrated eLearning practices (dependent variable) however, this relationship is interrupted by the problems of integration (intervening variable). These problems can further be aggravated by inadequate integration practices at different levels thereby negatively affecting the targeted integration.

5. Conclusions

The rapid growth of e-learning is occurring without our understanding the differences between how students learn in an online environment and in the more traditional setting (Luck & Norton, 2005). Even though they will never replace teachers but they can enhance classroom instruction and promote visual, verbal and kinesthetic learning, higher-level thinking, and problem solving but also to offer immediate feedback, hands-on learning, and collaborative instruction (Bataineh et al., 2006). ICT can facilitate a pedagogical shift by encouraging a meaningful two-way, informational flow between teachers and learners, moving away from the old 'banking' method of teaching where knowledge is simply transferred from teacher to student without any space for critical analysis on the part of the learner (Wims & Lawler, 2007; Nawaz & Kundi, 2010c; Kundi & Nawaz, 2010).

Teachers are adopting ICTs but only to a certain extent because they are not willing to throw away years of precious experience simply to adopt a tool that is generally perceived as ill-fitted to the framework of their craft. Teachers also do not want their competence as educational professionals evaluated merely by their ability to use the technology in the classroom (Sasseville, 2004). The research shows that huge investments in infrastructure and increased access to technology did not lead to increased integration, instead, most teachers remain occasional or non-users of classroom technology (Cagiltay et al., 2006). Furthermore, technology integration training is effective at a basic level, but it alone cannot lead to higher levels of technology integration (Zhao & LeAnna-Bryant, 2006).

However, teachers also believe that they can control recent changes in education with knowledge accumulated over the years from their professional experiences. They perceive professional knowledge as a way to steer technological change in a direction they can understand and which they feel is beneficial to their students. So cost-effectiveness may be imperative, but the student and not technology should be the center of any change in teaching and learning practices (Sasseville, 2004; Ehlers, 2005). Therefore, the developers of eLearning have to consider a variety of factors: development approaches and attitudes, project management techniques, user participation, user training, change management and the context within which all is going on (Nawaz & Kundi, 2010b).

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