International Journal of Law, Education, Social and Sports Studies (IJLESS)
Volume: 12, Issue S1, 2025 (Special issue-1),
ISSN: 2455-0418 (Print), 2394-9724 (online),[Impact Factor: 6.0176 (ICI)]

Integrating Information and Communication Technology in Higher Education - Issues and Concerns

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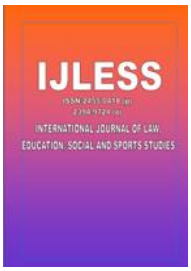
DOI: 10.33329/ijless.12.S1.546



ABSTRACT

Higher education is bound to go for the unavoidable shift from the culture of print to a culture of digital technology, which affect not only teaching, learning and research, but the whole of university life. ICT has become a common place entity in all aspects of life. The emergence of both ICT and technological tools of multiple capabilities has increased the possibilities of uses of technology as a powerful medium of delivery, instruction and communication. ICT has influenced every sector of the society and can be used as a tool to improve the quality of education.
Key Words: Higher Education, ICT and Digital Technology etc.

Introduction:

Present era is the era of technology, our day to day life is much associated with technology. Due to technological development the role of teacher is changed from instructor to facilitator. The role of ICT is now becoming a brainstorming issue for any field may it be administration, commerce, industry or education.

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Impact of ICT on learning and competency and performance based Curricula

The moves to competency are well supported and encouraged by emerging instructional technologies Such curricula tend to require:

- Access to a variety of information sources.
- Access to a variety of information forms and types.
- Student-centered learning settings based on information access and inquiry.
- Learning environments centered on problem-centered and inquiry-based activities.
- Authentic settings and examples.

- Teachers as coaches and mentors rather than content experts.

Contemporary ICTs are able to provide strong support for all these requirements and there are now many outstanding examples of world class settings for competency and performance-based curricula that make sound use of the affordances of these technologies. For many years, teachers vishing to adopt such curricula have been limited by their resources and tools but with the proliferation and widespread vailability of contemporary ICTs, many restrictions and impediments of the past have been removed. And new technologies will continue to drive these forms of learning further. As students and teachers gain access to higher bandwidths, more direct forms of communication and access to sharable resources, the capability to support these quality fearning settings will continue to grow.

Information Literacy:

Another way in which emerging ICTs are impacting on the content of education curricula stems from the ways in which ICTs are dominating so much of contemporary life and work. Already there has emerged a need for educational institutions to ensure that graduates are able to display appropriate levels of information literacy, "the capacity to identify and issue and then to identify, locate and evaluate relevant information in order to engage with it or to solve a problem arising from it". The drive to promote such developments stems from general moves among institutions to ensure their graduates demonstrate not only skills and knowledge in their subject domains but also general attributes and generic skills. Traditionally generic skills have involved such capabilities as an ability to reason formally, to solve problems, to communicate effectively, to be able to negotiate outcomes, to manage time, project management, and collaboration and teamwork skills. The growing use of ICTs as tools of everyday life have seen the pool of generic skills expanded in recent years to include information literacy and it is highly probable that future, developments and technology applications will see this set of skills growing even more.

The impact of ICT on students and teachers community:

Just as technology is influencing and supporting what is being learned in schools and universities, so too is it supporting changes to the way students are learning. Moves from content-centered curricula to competency-based curricula are associated with moves away from teacher-centered forms of delivery to student-centered forms. Through technology-facilitated approaches, contemporary learning settings now encourage students to take responsibility for their own learning In the past students have become very comfortable to learning through transmissive modes. Students have been trained to let others present to them the information that forms the curriculum. The growing use of ICT as an instructional medium is changing and will likely continue to change many of the strategies employed by both teachers and students in the learning process. The following sections describe particular forms of learning that are gaining prominence in universities and schools worldwide.

- Increased use of the Web as an information source, Internet users are able to choose the experts from whom they will learn.

The use of ICT in educational settings, by itself acts as a catalyst for change in this domain. ICTs by their very nature are tools that encourage and support independent learning. Students using ICTs for learning purposes become immersed in the process of learning and as more and more students use computers as information sources and cognitive tools, the influence of the technology on supporting how students learn will continue to increase.

In the past educational institutions have provided little choice for students in terms of the method and manner in which programs have been delivered. Students have typically been forced to accept what has been delivered and institutions have tended to be quite staid and traditional in terms of the delivery of their programs. ICT applications provide many options and choices and many

institutions are now creating competitive edges for themselves through the choices they are offering students. These choices extend from when students can choose to learn to where they learn.

Learning any place

The concept of flexibility in the delivery place of educational programs is not new. Educational institutions have been offering programs at a distance for many years and there has been a vast amount of research and development associated with establishing effective practices and procedures in off-campus teaching and learning. Use of the technology, however, has extended the scope of this activity and whereas previously off- campus delivery was an option for students who were unable to attend campuses, today, many more students are able to make this choice through technology-facilitated learning settings. The scope and extent of this activity is demonstrated in some of the examples below.

In many instances traditional classroom learning has given way to learning in work-based settings with students able to access courses and programs from their workplace. The advantages of education and training at the point of need relate not only to convenience but include cost savings associated with travel and time away from work, and also situation and application of the learning activities within relevant and meaningful contexts.

Learning any time:

In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs. Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other commitments.

Through online technologies learning has become an activity that is no longer set within programmed schedules and slots. Learners are free to participate in learning activities when time permits and these freedoms have greatly increased the opportunities for many students to participate in formal programs.

The wide variety of technologies that support learning are able to provide asynchronous supports for learning so that the need for real-time participation can be avoided while the advantages of communication and collaboration with other learners is retained.

As well as learning at any time, teachers are also finding the capabilities of teaching at any time to be opportunistic and able to be used to advantage. Mobile technologies and seamless communications technologies support 24x7 teaching and learning. Choosing how much time will be used within the 24x7 envelope and what periods of time are challenges that will face the educators of the future.

The continued and increased use of ICTs in education in years to come, will serve to increase the temporal and geographical opportunities that are currently experienced. Advancements in learning opportunities tend to be held back by the ICT capabilities of the lowest common denominator, namely the students with the least access to ICT. As ICT access increases among students so too will these opportunities.

Major Issues:

Teacher Related Issues:

ET to be successful throughout the educational system requires five important competencies on part of the teachers namely (1) skills with particular applications, (2) integration into existing curricula, (3) curricular changes related to the use of ET the including changes in instructional design), (4) changes in teacher role and (5) underpinning educational theories, Ideally, these should be

addressed in pre service teacher training and enhanced in-service. Researches on the use of ICTs in different educational settings over the years invariably identify, as a barrier to success, the inability of teachers to understand why they should use and how exactly they can use to help them teach better. Unfortunately, most teachers' professional development in ICTs is heavy on "teaching the tools" and light on "using the tools to teach". A worldwide survey conducted by Pelgrum (2001) of nationally representative samples of schools from 26 countries, found that teachers' lack of knowledge and skills is a serious obstacle to using ICT in primary and secondary schools. Further teachers attitude, motivation, anxiety over being replaced by technology and inherited resistance to use technologies are the significant causes of non utilization of technologies for teaching and learning process. (Phutela, 1994. Rout 2007). At a broader level, Becta (2004) argued that resistance to change is an important barrier to teachers' use of new technologies in education. This can be alleviated only if teachers have a keen understanding and appreciation of their changing role.

Technical Support Related Issues:

Without both good technical supports in the classroom and whole-school resources, teachers cannot be expected to overcome the barriers preventing them from using ICT. Pelgrum (2001) found that in the view of primary and secondary teachers, one of the top barriers to ICT use in education was lack of technical assistance. Technical support requirements of an institution depend ultimately on what and how technology is deployed and used, general competencies that are required would be in the installation, operation, and maintenance of technical equipment (including software), network administration, and network security. Without on-site technical support, much time and money may be lost due to technical breakdowns. The Becta (2004) report stated, "if there is a lack of technical support available in a school, them it is likely that technical maintenance will not be carried out regularly, resulting in a higher risk of technical breakdowns". Many of the respondents to Becta's survey (2004) indicated that technical faults might discourage them from using ICT in their teaching because of the far of equipment breaking down during a lesson.

Some other Emerging Issues:

A number of other issues have emerged from the uptake of technology whose impacts have yet to be fully explored. These include changes to the makeup of the teacher pool, changes to the profile of who are the learners in our courses and paramount in all of this, changes in the costing and economics of course delivery.

Related to Teachers:

In the past, the role of teacher in an educational institution was a role given to only highly qualified people. With technology- facilitated learning, there are now opportunities to extend the teaching pool beyond this specialist set to include many more people. The changing role of the teacher has seen increased opportunities for others to participate in the process including workplace trainers, mentors, specialists from the workplace and others. Through the affordances and capabilities of technology. today we have a much expanded pool of teachers with varying roles able to provide support for learners in a variety of flexible settings. This trend seems set to continue and to grow with new ICT developments and applications. And within this changed pool of teachers will come changed responsibilities and skill sets for future teaching involving high levels of ICT and the need for more facilitative than didactic teaching roles.

Related to Students:

In the past, education has been a privilege and an opportunity that often was unavailable to many students whose situation did not fit the mainstream. Through the flexibilities provided by technology, many students who previously were unable to participate in educational activities are now opportunities to do so. The pool of students is changing and will finding continue to change as more

and more people who have a need for education and training are able to take advantage of the increased opportunities. Interesting opportunities are now being observed among, for example, school students studying university courses to overcome limitations in their school programs and workers undertaking courses from their desktops.

Major Concerns:

Equity of access, cost-effectiveness, quality, and sustainability are four broad intertwined. A teaching concerns which must be addressed while considering the overall impact of the use of ICTs in education. These are presented here briefly.

Sustainability of Educational Technology Projects:

One aspect of development programs that is often neglected is sustainability. The long history of development aid has shown that too many projects and programs start with a bang but all too soon fade out with a whimper, to be quickly forgotten. This is true for many ICT based educational projects as well. In many instances, these projects are initiated by third party donors such as international aid agencies or corporations. Not enough attention is paid to establishing a mechanism by which the educational institution or community involved can pursue the project on its own or in partnership with other stakeholders after the initiating donor exits. But cost and financing are not the only barriers to sustainability. According to Cisler, the sustainability of ICT enabled programs has four components: social, political, technological, and economic.

- Economic sustainability refers to the ability of a school and community to finance an ICT enabled programme over the long term. The need to develop multiple channels of financing through community participation.
- Social sustainability is a function of community involvement. The school does not exist in a vacuum, and for an ICT enabled project to succeed the buy in of parents, political leaders, business leaders and other stake holders is essential. In short, a sense of ownership for the project must be developed among all stakeholders for sustainability to be achieved.
- Political sustainability refers to issues of policy and leadership, the innovative nature of ICT-enabled projects, leaders must have a keen understanding of the innovation process, identify the corresponding requirements for successful adoption and harmonize plans and actions accordingly.

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