



## THE ROLE OF INFORMATION COMMUNICATION TECHNOLOGY IN HIGHER EDUCATION

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### ABSTRACT

Alternative methods such as the use of technologies that will facilitate research and extension are on the rise. An example is the application of electronic tools focused on information technology, mainly in quantitative delineation research, since these have the objective of analyzing facts or phenomena through numerical data, using collection instruments such as questionnaires and forms. Thus, this research aims to report the experience of undergraduates of the scientific initiation of the Nursing and Electrical Engineering courses regarding the integration of these different areas of knowledge in the construction and use of online questionnaires and specific software for the analysis and data collection in a scientific research carried out with elderly people diagnosed with Diabetes Mellitus. The study was carried out with five questionnaires: Socio-demographic and economic; Health conditions; Beck Anxiety Inventory, Geriatric Depression Scale, and WHOQOL-OLD. The first step was the development of questionnaires on the platform. After all the development, the questionnaires were ready to go to the field. Where each researcher completed the questions and sent the answers to the database, and Google system already stores them, making it possible to generate spreadsheets and tables for later analysis. The analysis was done using known statistical software, SPSS and Microsoft Excel, using the available descriptive and correlation statistics. According to the researchers' reports, using the Google Forms platform made it possible to make the application of the questionnaires less expensive and more dynamic in the research. In addition to the statistical tools greatly increasing the efficiency of the research due to the short time spent in the data analysis.

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### INTRODUCTION

Now a days the role of Information Communication Technology (ICT), especially internet in education plays an important role, especially in the process of empowering the technology into the educational activities ICTs especially internet is the most effective way to increase the student's knowledge. ICTs are the power that has changed many aspects of the lives. Today ICTs including laptops wirelessly connected to the Internet, personal digital assistants, low cost video cameras and cell phones have become affordable, accessible and integrated in large sections of the society throughout the world. It is only through education and the integration of ICT in education that one teaches students to be participants in the growth process in this era of rapid change.

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ICT also allows for the creation of digital resources like digital libraries where students, teachers and professionals can access research material and course material from any place at any time. Such facilities allow the net working of academics and resources and hence sharing of scholarly material. ICTs provide both students and teachers with more opportunities in adopting learning and teaching to individual needs in response to technical innovation. ICT is an umbrella term that includes all technologies for the manipulation and communication of information. ICT considers all the uses of digital technology that already exist to help individuals, business and organization. It is difficult to define ICT because it is difficult to keep up the changes they happen so fast. Worldwide research has shown that ICT can lead to improved student learning and better teaching methods. A report made by the National Institute of Multimedia Education in Japan, proved that an increase in student exposure to educational ICT through curriculum integration has a significant and positive

impact on student achievement, especially in terms of "Knowledge", "Comprehension", "Practical Skill" and "Presentation Skill" in subject areas.

### Role of ICT in Higher Education

The role of ICTs in higher education is recurring and unavoidable. Swift growth of ICTs is taking place all over the world. They have emerged as powerful tools for diffusion of knowledge and information. Their introduction and unprecedented use in the higher education has generated varied response. The opportunities can be categorized as the aspects relating to role of ICT for access and equity in education, their role for quality learning and teaching at higher education level and inducing innovations in approaches and programmes. Rapid changes in the technologies are indicating that the role of ICT in the future will grow tremendously in the education. The use of ICT will enhance the learning experience of students. It helps them to think independently and communicate creatively. It also helps students for building successful careers and lives, in an increasingly technological world. Being aware of the significant role of ICT (internet) in our life, especially in the educational activities, education authorities should be wise enough in implementing the strategies to empower ICT in supporting the teaching and learning process in the classroom. ICT is not just the bloom of educational activities but also it will be the secondary option to improve the effective and meaningful educational process. The main purpose of the strategy for Information and Communication Technology implementation in Education is to provide the prospects and trends of integrating information and communication technology (ICT) into the general educational activities.

### ICT in Education can be classified as

**E-Learning:** Electronic learning or E-learning is a general term used to refer to computer – enhanced learning. It is commonly associated with the field of Advanced Learning Technology (ALT), which deals with both the technologies and associated methodologies in learning using networked and multimedia technology. It is also known as online leaning. Distance education provided the base for e-learning's development. E-learning can be 'on demand'. It overcomes timing, attendance and travel difficulties, E-learning allows delivery, dialogue and feedback over the internet. It allows mass customization in terms of content and exam. E-education can provide access to the best gurus and the best practices or knowledge available (UNESCO, 2002). It is possible to leverage the online environment to facilitate teaching techniques like role-play across time and distance. It can also facilitate the development of scenarios, which can be rarely witnessed in practice. ICT can play a valuable role to monitor and log the progress of the students across time, place and varied activities. E-learning allows higher participation and greater interaction. It challenges the concept that face-to-face traditional education is superior to it. The web and the internet is the core ICTs to spread education through e-learning. The components include e-portfolios, cyber infrastructures, digital libraries and online learning object repositories. All the above components create a digital identity of the student and connect all in the education.

**Blended Learning:** It is the combination of multiple approaches to leaning. It is usually used to define a situation

where different delivery methods are combined together to deliver a particular course. These methods may include a mixture of face to face learning, self-paced learning and online classrooms.

**Face-to-face Learning:** It refers to learning that occurs in a traditional classroom setting where a faculty member delivers instruction to a group of learners. This could include lectures, workshops, presentation, tutoring, conference and much more.

**Self Paced Learning:** It provides the flexibility to learn according to the availability of learner's own time and pace, it occurs in a variety of ways such as : reading specific chapters from text book, studying course materials presented through web-based or CD-based course, attending pre-recorded classes or sessions, reading articles referred by faculty member, working an assignments & projects and searching & browsing the internet.

**Online Collaborative Learning:** It involves interaction between learning and faculty members through the web, this interaction can occur in one of the following modes:

- Synchronous interaction
- Asynchronous interaction

Synchronous means 'at the same time', it involves interacting with a faculty member and other learners via the web in real time using technologies such as virtual classrooms and or chat rooms. A synchronous means 'not at the same time', it enables learners to interact with their colleagues and faculty member at their own convenience such as interacting through email.

**Distance Learning:** It is a type of education, where students work on their own at home or at the office and communicate with faculty and other students via e-mail, electronic forums, videoconferencing, chat rooms, instant messaging and other forms of computer based communication. it is also known as open learning. Most distance learning programs include a Computer Based Training (CBT) system and communications tools to produce a vital classroom. Because the Internet and World Wide Web are accessible from virtually all computer platforms, they serve as the foundation for many distance learning systems. ICTs also allow for the creation of digital resources like digital libraries where the students, teachers and professionals can access research material and course material from any place at any time. Such facilities allow the networking of academics and researches and hence sharing of scholarly material and leads to quality enhancement in teaching and learning. ICT play vital role as a strong agent for change among many educational practices, i.e., conducting on-line exam, pay-on-line fees, accessing on line books and journals. Thus the developments of ICTs in education have a strong impact on. Thus ICT in education improves teaching learning process, provides the facility of online learning to thousands of learners who can not avail the benefits of higher education due to several checks such as, time, cost, geographical location etc. once again ICTs serve to provide the means for much of this activity to realize the potential it holds.

### Conclusion

As the world in moving rapidly towards digital information, the role of ICTs in education is becoming more and more important and this importance will continue to grow and

develop in 21<sup>st</sup> Century. "ICTs are the computing and communication facilities and features that variously support teaching learning and a range of activities in education."

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