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# Use of Various Information Communication Tools (ICT) in Online Teaching-Learning in Higher Education

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## Abstract

The COVID-19, an ongoing global pandemic was first identified in an outbreak in December 2019. It spread globally so fast that all most all the countries faced a complete lockdown. All the universities, colleges and schools were closed which affected teaching-learning all over the world. It affected all common and essential human services and needs. Even employees of multi-national companies continued their work from home during lockdown and still some companies have decided to continue it even now. Imparting education is one of the most important services and is the basic right of mankind. Information Communication Tools (ICT) provided by science and technology played a pivotal role in keeping education alive during that hard time.

This paper mainly focuses on some of the important software which were used by teachers to teach students. Some of the important Information and Communication Tools are Computers, Laptops, Smart phones, LCD Projectors, Internet and emails etc. There was not much use of these tools in traditional classes, but now-a-days they have become part of life of the students from primary to the students of higher studies. Teachers are using E-learning apps and educational technologies like; Gliffy, Google Charts, Google Classroom, Google Form, Edpuzzle, Ted-Ed, Padlet, Socrative, MOOC and many more in Higher Education. These tools and software have made life not only easier but also opened dimensions to learn from all walks of life.

**Key words**: ICT Tools, E-learning apps, Edpuzzle, Google Form, Socrative, MOOC.

## Introduction

The art of teaching not only involves a simple transfer of knowledge from one to other but it is a process that facilitates and influences the process of learning also in all levels of education. The quality of a teacher and the tools used by him are estimated on how much the students understand from his/her teaching. Only a classroom cannot be used as a learning platform for acquiring primary teaching skills. The educational skill for teaching can also be acquired by using E-learning apps and by more structured and cheaper faculty training techniques. Scientifically proven or effective methods used in teacher training programs introduced about five decades ago. But to face the current challenges of the world we have to change in ourselves. In words of Mahatma Gandhi, "You must be the change you wish to see in the world."

**What ICT Stands For?** Information and Communication Technology (ICT) is an extensional term for advanced Information Technology that stresses the role of integrated communications and the incorporation of telecommunications and computers, as well as necessary enterprise software like Zoom, Google Classroom, middleware, storage and audio-visual systems, that enable students/learners to access, store, transmit, and manipulate information provided by educationists.

**Skills that can be Acquired Through ICT Tools**: Teachers and students of higher education can get the skills like, Blogging, Bookmarking, Crowd sourcing, Commenting, Designing, Downloading, Editing, Experimenting, Linking, Programing, Podcasting, Searching, Subscribing, Tagging, Twittering, Uploading, etc.

**Advantages of Technology in Classrooms:** ICT Tools and E-educational apps promote individual learning as student, bridge the gap between teachers and students, encourage group learning, and simplify teacher's work.

**Disadvantages of Technology in Classrooms**: Students are usually distracted in the traditional classroom. This system is expensive and schools with small budgets cannot afford. It requires training for both teachers and students. Students need extra training on how to use various educational technologies.

**Traditional v/s Internet based ICT Educational Approach**

| | **Traditional Classroom** | **ICT in Education** |
|---|---|---|
| **Lecture in the Classroom** | Physical – limited in size average 60 students | Unlimited |
| | Synchronous | Syn. and Asyn. |
| | Coming to college and back to home | Can be done from home |
| **Syllabus/Content** | Power point | Multimedia/simulation |
| | Textbooks/library | Digital library |
| | Videos | Books study material available on internet |
| | Notes in hard copy | Notes available in soft |
| **Personalization** | One learning path | Learning path and pace determined by learner |
| | Physical distraction | May face failure of internet connection |

**Benefits of using ICT:** The educational softwares improves engagement of teacher and taught, improves knowledge retention, encourages individual as well as group learning and collaboration. Moreover, students can learn useful life skills/soft skills through these tools. It is beneficial for teachers also.

**Free Online Technology Enabled Learning (TEL) Tools:** There are many tools that help students in their higher studies like, Google Classrooms, Pixlr, Ted-Ed, Jeo Pardy Labs, Class Marker, Mind Meister, Google Form, Padlet, Edupzzle, Poll Everywhere, Recapp etc. Given below are the details of some of these helpful tools.

**Gliffy**: *It* is one of the original apps on the Atlassian Marketplace and continues to offer the deepest integrations with Atlassian's tools today. Gliffy combines intuitive diagramming with real-time collaboration. Make diagrams with easy tools. It can also create a UML diagram in minutes with a drag-and-drop interface.

**Google Charts:** This tool is very powerful, simple to use for students and provides free online servises. It can be used to rich gallery of interactive charts and data tools. It is useful to draw Pie Chart, Annotation Chart, Line Charts, Table, Column Chart, etc.

**Socrative:** It is a useful tool for teachers to visualize the student's level of understanding. Its website is www.socrative.com. It allows students to use their smart phones to answer questions based on the activity taught by instructor. It is usually used as a competition in 'Space Race'. It automatically generates detailed reports of all individuals and as well as overall class performance. Teacher can prepare, launch and manage a quiz for the students. Students access the quiz and answer questions.

**Massive Open Online Course (MOOC) Through ICT in Higher Education:** It is highly used technique of offering a course of higher education on an online platform that extensively uses ICT infrastructure for its implementation. It is generally offered in Asynchronous mode of e-learning. Now-a-days, many IITs and other national fame institutions are offering courses FDPs for Faculty members and students through it. It uses 4 quadrant approaches for implementation of learning process.

1. Video lectures PPTs and transcriptions of lecture.
2. PPT presentation and supportive materials.
3. Face-to-face communication with an instructor or a teacher.
4. Teacher gives assignments and final assessments in various ways.

**Format for MOOC Courses:** These courses are designed with normally from 10 to 40 hrs of learning and activities spread over 4, 8 and 12 weeks for higher education. This means a learner on an average spends 3-4 hrs time a week for completion of course. It provides video lectures which can be listen at the time of convenience for better understanding of a participant, supportive and additional materials as well completion of various learning activities which include assignments, group work, presentations and assessments. Finally, a learner is required to sit for summative evaluation to obtain a certificate for the undergoing course.

**Benefits of Using Educational Technologies:** Scientific studies reveal that after 2 weeks, student tend to remember only 10% of what he reads, 20% of what he listens, 30% of what he sees, 50% of what he sees and listen—watching a movie, a video tape, looking at an exhibition, watching a demonstration by expert, and 90% of what he sees, listens and does.

**Virtual Classroom Environment**: VCE is a method of e-learning where a teacher is connected to any number of students at the same time from his college or home with no place boundation. Students can be present from various remotely geographical location using some form of communication technology i.e. internet. The teacher and students can use some video conferencing tool such as Google Meet, Microsoft Teams, Webex, AVIEW, Zoom or any other similar applications.

**Issues and Challenges**: In order to accept E-learning or ICT tool in Higher Education in the main stream of teaching and learning system, we need to have a standard or measures. Standardization of E-learning at all levels of education is related to many aspects, like standardization of subject content, educative assignments and evaluation etc. For example, if it is asked to develop a module for in-service teachers of technical institute in a particular subject domain, the following questions must be in mind; what will be the standard of teaching content? What will be the evaluation or assessment model? We have to find the answer for the questions, we normally come across.

**Conclusion:-** ICT tools, E-learning apps, educational technologies like; Gliffy, Google Charts, Google Classroom, Google Form, Edpuzzle, Ted-Ed, Padlet, Socrative, MOOC have become an essential part of Higher Education. The entire world has become a classroom for the students sitting in the country or abroad. Students of higher studies can get valuable knowledge or information, by accessing educational platforms without going abroad. But still in the words of Bill Gates, "Technology is just a tool. In terms of getting the kids working together and motivate them, the teacher is the most important."

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