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Effective Usage of ICT Tools in Education System

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ABSTRACT: Information Communication Technology (ICT) has great potential in changing the way the teachers teaching and the students learning. ICT helped to expand educational opportunities, enhance the quality of teaching and learning, sustain life-long learning, and improve efficiency and effectiveness in management. Among the countries in the Asia-Pacific region, there is such a diversity and disparity in ICT use. How each country utilizes ICT depends largely on the countries' ICT readiness in the area such as infrastructure, policy in ICT in education, teachers' competency, and pedagogical use when integrating ICT into the classroom. These innovative practices demonstrate innovative approaches, challenging issues, and key success factors in integrating ICT into education. From these examples, mistakes and waste of funds and investment can be avoid. The Covid-19 pandemic is huge challenge to education systems. ICT tools are helping students to continue their studies and getting all the resources through the ICT tools even in this pandemic situation.

KEYWORDS: Communication technology, Covid-19, ICT Tools, Mobile Apps, Online Education

I. INTRODUCTION

ICT Information and Communication Technology. It uses technologies that afford access to information through telecommunications. It is alike to Information Technology (IT), but concentrates typically on communication technologies. This comprises the Internet, wireless networks, cell phones, and other communication mediums. Parts of this are, **Information** is the knowledge gained through study, communication or data. **Communication** is an exchange of information and knowledge by speaking, writing or using other medium and **Technology** is an art or a skill which is used to communicate with the world. So, ICT is the technology essential for processing and spreading of information by using communication technologies like internet, cell phones, video conferencing, computers, softwares, social networks etc. In simple words, ICT is a tool used by people to interact with their colleagues around the world, exchange their ideas, information, communications and coordinate each other through variety of technological resources. [1,2]

II. COMPONENTS OF ICT SYSTEM

ICT involves skills, software, applications and system. In ICT system input is data, process will be like calculation, a sort/ search and formatting, the output is information which will be sent to other people or another ICT system. There are six components of any ICT system: **People** This component is very essential and needed to supply the data to the ICT system. The data is entered by human and output is read by humans. The input is given by using keyboards, barcode scanners and touch screen interface also they will use. **Data** is the raw material of any information technology system and this is any raw facts or figures, set of values or measurements, records of transactions. Examples include dates, addresses, four-digit PIN numbers and debit card details. **Procedures** This component talks about what needs to be done and when. It also includes the passing of data or information between different people. For example, in case of system failure data can be restored and system should run smoothly. **Hardware** This component includes the physical components (printer, MP3 player, hard disk drive etc), parts of computers like communication devices needed to send data across networks, processor, input devices (keyboards, mouse, scanner, etc.), output devices (screen, printer, plotter, etc.) which make up the ICT system. In simple words a hardware is component which we can touch it. **Software** This component is computer program which provides thousands of instructions that make the computer do the required job or a task. **Information** This is the data been processed or converted to give it meaning to people. Examples include names, passwords, credit card numbers etc. The output of ICT system is information.

III. USE OF ICT TOOLS IN EDUCATION SYSTEM

Introducing this technology into education, the institutions are outreaching the large number of students technically and wirelessly. The today's trend is where education is grown outside the physical constraints of classrooms. Students

access the information whenever and wherever they want. These kinds of trends are increasing in today's educational systems because of ICT.

IV. USE OF ICT TOOLS IN CLASSROOMS

The effective and efficient use of ICT in classroom need:

- Teachers need knowledge about ICT tools and technologies.
- ICT hardware and software should be used effectively for teaching and learning activities.
- ICT requires online support, networking and management.

A. Various ICT tools used in Classroom

Some of the technological tools used in ICT based teaching –learning process are, LCD projector, PowerPoint Presentation, Smart board, E-mail, Discussion forum, Social Media, YouTube, CCTV, Video conferencing, Mobile learning etc.

a. LCD Projector

As newer technologies are increasing the classrooms also have changed intensely. All the new technology ICT equipment is used to improve the teaching and learning process. LCD or multimedia projector is the centrepiece in the classroom now and it is advance enhancement to take classes. Here students no longer need to stand around the around the Laptop or desktop computer monitor to see any multimedia presentations. Just one projector is needed for multimedia presentation to involve students dynamically. The advantage is easier to take notes, learning experience is very interactive, learn the subject in new way, class time is managed efficiently

b. PowerPoint Presentation

Slide presentation software such as power point has become an essential part of many institution's classrooms. These will enhance teaching sessions by allowing teachers to use graphics and other multimedia to clarify the student's understanding.

c. Smart board

The smart technology is interactive whiteboard replacing the overhead projectors in many classrooms. Smartboards are enhancing student's learning experience by projecting visual effects and elements. It makes learning very easier to students.

d. Social Media

This provides more smooth and direct communication tool between students, teachers and parents, where teachers, parents and students can check in and ask or responds to the questions. Facebook is the perfect platform to incorporate in classrooms. Facebook pages are used to post class updates, share homework assignments and encourage the discussions. Students need to follow class's Facebook page. Even if student is inactive these pages are accessible and these pages are public. Other social medias are Twitter, Instagram etc.

e. YouTube

A free web-based service contains short contents about specific concepts. Teachers can easily search and review videos related to a specific concept or knowledge, and then share the video links to students.

f. Video conferencing

This is an efficient and effective method of distance education enables training and learning to be delivered in more economical way. This brings new dimension to the classrooms. Teachers can connect to students lively; they can introduce guest lectures and bring live events to students. Some applications used are Zoom Skype, Google Meet Cisco Webex etc.

g. Mobile learning

It is also called as M learning where the educational data can be developed or consumed on mobile devices like smartphones, tablets. Using the M learning students can learn wherever and whenever they want. Students have flexibility to use any kind of mobile devices such as Mobile Phone, Laptop and other portable devices M learning includes videos, animated videos, interactive videos etc.

V. ICT IN TEACHING AND LEARNING

Teacher can use ICT tools to teach the students and they also have to learn how to use those in effective way to achieve their learning and teaching objectives.[3]

1. Information communication technology is very helpful tool in the professional and personal development of the teachers. A teacher can improve his/her skills and he/she can undergo various certification programs. This kind of programs help in enhancing their knowledge to teach their subject content easily and in more understandable way.
2. A teachers can contribute their part in discussions and conferences with the professionals of his subject. By doing this they can improve teaching skills and knowledge through audio and video conferencing.
3. Teacher can guide his/her students about the learning materials available on internet, e-books, e-journals, e-magazines. These are very helpful in better learning of subject skills.

For a student also ICT tools are helpful in the following ways: [3]

1. Students can use online resources for studying and improve their knowledge. They learn from their place at any time.
2. Students can meet teachers online by using video conferencing tools and get required knowledge.
3. Students can have no limit of time and place while using ICT tools.

VI. USE OF ICT TOOLS IN EDUCATION SYSTEM IN COVID- 19

The Covid-19 made schools and colleges to shut all across the world. Education has changed dramatically and adopted e-learning. Information communication technology became very helpful in this pandemic situation.

A. *Online education:*

Due to Covid-19, there is a critical situation to use online education. Because of lockdowns all educational institutions like schools, colleges are closed. Online education is the best and better option for the educators and the Institutions to continue with their training.

B. *Apps Usage:*

Many softwares or applications are used nowadays for online education. These softwares and applications are helping for students and teachers to reach each other. These apps are also used for meetings, online teaching learning process like Zoom meetings, Google meet, Webex etc.

C. *Online education platforms:*

These helps teachers to take online classes, uploading videos, recorded videos can be sent through messaging applications like WhatsApp.

D. *Use of different e-content:*

In online education all kind of contents are created and delivered through electronic media like E-mail, WhatsApp. In e-contents so many subjects are available for students. These are helpful for them to develop their knowledge.

In the education sector due to this Covid-19, online learning platforms like BYJU's offering free of cost access to their services. With the help of ICT tools online learning provides safe and effective alternative to the classroom.[4]

VII. CONCLUSION

This paper demonstrates the innovative practices of ICT in Education from this presentation can serve as a mean to inform policy makers, educators, and teachers about the potential use of ICT in education and offer ideas and values of ICT to improve the quality of education. ICT is absolutely the path to take for institutions, especially in countries like India, as our growth is directly associated with technology and promising higher quality education for students even in pandemic situation.

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