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Review Article

The Role of ICT in Higher Education for the 21st Century: ICT as A Change Agent for Education

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Abstract

Information and Communication Technology (ICT) can be utilized for the education sector. Education includes online, distance and part time education. There are unlimited applications of ICT in the real world. In his paper emphasis is on the online education field. Traditional Non-formal education system process includes activities like admission, Personal Contact Programmes, Exam for any course in a University or Institution. In this process ICT can play a great role in all the activities by providing a lot of benefits to students, teachers, parents and Universities itself. ICT can be used for providing education to the people who are not able to come to school due to various constraints. ICT can play great role in formal and non formal forms of education. The paper examines certain important issues related with the effective implementation of ICTs in all levels of education and provides suggestions to address certain challenges that would help in the implementation of ICTs in education and simultaneously increasing Quality of education.

Keyword: *Communication Technology, education, University or, Institution, increasing Quality*

Introduction

IT has become a buzzword while talking about technology and its applications. IT is used in various business and management functions but not in the improving the quality of education. Quality of education has been issue of concern in the absence of standard parameters of to measure the quality. The hardware, software, the methods and know how required or used in acquiring, storing, processing and displaying data and information is collectively known as Information Technology (IT). Also on other hand, many developments and achievements took place in communication technology sector after and Second World War. (1)

Hardware, know how, programs and the methods used in ensuring that message is transmitted correctly, efficiently and cost effectively are collectively known as Communication Technology (CT). Both of these technologies became complementary to each other means progress in one alone is not much beneficial. Hence IT and CT started moving together and a new term was coined named as Information and communication Technology (ICT).

Convergence of these two technologies gave birth to ICT. Education system includes formal and Non-formal forms of education at various levels of education. Teaching is imparting knowledge or skill whereas learning is skill acquisition and in creased fluency. Usage of ICT is one of the way by which India‘s large population base can be effectively reached. (2)

Moreover in enhancing the quality and delivery of services through ICT- especially in case of developing relations with citizen- Government will be better positioned .Passive learning occurs when students use their senses to take in information from a lecture, reading assignment, or audiovisual. Traditional lecture is not an effective learning environment for many of our students because so many students do not participate actively during a traditional lecture. This is the mode of learning most commonly present in classrooms whereas active learning involves the student through participation and investment of energy in all three phases of the learning process (input, operations, and feedback). This type of learning is more apt to stimulate higher cognitive processes and critical thinking. In the past few years there has been a paradigm shift in curriculum where teacher acts as a facilitator in a student centered learning.(3)

In Student centered learning focus is on the student's needs, abilities, interests, and learning styles with the teacher as a facilitator of learning. Here students have to be active responsible participants in learning process. Teacher has key role in the whole process whereas in case of ICT based education, various ICT tools are supplemented to make the teaching-learning process effective. With the help of blended learning, total time devoted to teaching can be decreased. A survey says that there was a sense of pride created and interest generated among the teachers and students for gaining ICT and its privileges. ICT has the potential to remove the barriers that are causing the problems of low rate of education in any country. ICT as a tool can overcome the issues of cost, less number of teachers, and poor quality of education as well as to overcome time and distance barriers.

ICT tools:

Many ICT tools are available in the modern world that can be used to create and disseminate knowledge. Tools include radio, TV, internet, mobile phones, computers, laptops, tablets and many other hardware and software applications. Certain ICT tools, such as laptops, PCs, mobile phones and PDAs, have implications for education. These devices can be used to provide education and training for teachers and students. Most ICT tools are exaggerated, but until now they did not go well. The use of radio for educational practices has been very popular in the past and is still used by IGNOU in India.

However, one-to-one broadcasting technologies such as radio and television are considered less revolutionary 'ICT' in education because they are used to reinforce traditional teachers-oriented learning models, in contrast to computers that are considered to be an important tool for training pupils, Cantered education model. Successful ICT initiatives meet three objectives: availability, access and demand. Educational ICT tools are not intended for teachers to acquire ICT skills directly, but for teachers to create a more effective learning environment through ICT.

Teachers can use ICT tools to take advantage of the use of these tools in content, curriculum, training and assessment. ICTs must be accessible to the rural population at their request, such as landline telephones, mobile phones, newspapers, radio, television, radio ports,

miniatures (VSAT), computers and the internet.

ICT Applications For Quality Improvement Of Formal And Informal Education:

ICT applications have become an indispensable part of modern culture that is spreading throughout the world through traditional and vocational education. In India there are mainly three levels of educational systems (including day care and pre-school education), high school or secondary education (upper and secondary secondary education) and university and higher (including university and university level). At all levels of education ICT can be used to improve the curriculum and improve the quality of education. The use of multimedia in education increases productivity and retention. 20% of what people see, 40% of what they see and hear, and about 75% of what they see and hear at the same time. Interactive whiteboards help teachers build lessons, support collaborative learning, develop cognitive skills of students and enable more integrated use of ICT in the classroom. (4)

The Government of India has announced 2010-2020 as a decade of innovation. Inference and critical thinking are needed for innovation. The basis of this technology can only be achieved at the primary level. Students who enter the school are very curious, creative and can learn a lot. At this level, the statement 'photos are worth more than a thousand words' is very true in the course of the course.

By getting acquainted with ICT at an early stage of education, young people can share their thoughts about the future. Students who study at this stage have a lot of interest in cartoons. They understand more via animated photos. For example, the use of ICT to create the same environment for the education of children in primary school can significantly change the educational scenarios. Nursery students can teach by showing pictures, animals, fruit, etc.

Students at this level can use ICT tools to listen to voices, sounds and movements of different animals and to learn many things. Language learning is also at this level. To know a new language at this age is easier than other levels. Multimedia projectors and computers can be used to learn pronunciation and pronunciation. (5)

Classes, poetry and lectures by leading scientists who are stored on computers or other ICT tools can easily be presented to students at anytime and anywhere. Such types of teaching and learning have long remained in the memories of children. At secondary school level, subjects such as history, geography, political science, physics, chemistry, biology and physical education are taught. The lesson on this subject is easy to understand by showing a video about the subject.

This type of films and related multimedia material is easily available on the internet through academic archives and various related sites. The internet is a basic tool for teachers and students to find information about each subject. This type of lecture makes the environment very interactive and students like it.

Educational and practical CDs that are sold on the market make this task easier. At university level you can easily use various functions, such as computers, electronic boards, Edusat facilities of various state governments, MM projectors and other

peripherals related to the learning and learning process.

The "Aakash" tablet is easy to use, so you can provide more education and deliver it to both teachers and students. The repository is the library in which these digital sources are stored and provides information to teachers, students and parents, so that they can easily find and use learning materials, regardless of their source location. Various EDUSAT programs are also very useful for students. Soft skills programs can help you with the implementation of reputable multinational companies (MNCs). Country-level quizzes and seminars can be performed using the EDUSAT infrastructure and can be transferred from any institution. EDUSAT can be used to train teachers in the latest topics and skills and can save a lot of government time and money. In Haryana the EDUSAT project is implemented at school and university level and is used to give lectures in accordance with the lesson plan. With informal learning, pupils have access to information and learning material anytime and anywhere. This includes distance learning and other open learning systems.(6)

There are various functions that can be performed when registering students in distance learning courses at all universities or research institutes. Features include assigning a unique number (reference number / role number), providing books, providing information on rate issues and entering data. Some of these activities can be properly executed using ICT tools.

In distance learning, ICT can be used to improve records management by creating a complete database of all students in different courses. When a student is registered, a unique number with the name a reference number is generated and provided to the specific student. For this purpose, SMS (Short Message Service) of mobile phone can be used. Mobile phones are one of the most important ICT tools and can be used for purposes. Other information regarding the PCP, test data can easily be sent by SMS to students of the university / institution concerned. Enrolled students can also be provided with user names and passwords to use various online services and resources in the form of institutional academic repositories.

All this material can be uploaded to the university portal and the CD of this course can be provided to the student instead of printed or printed material. The online payment system can also be implemented on the portals of the relevant universities or research institutes. Students will be saved from many difficulties, including paying, attending PCP, taking exams, and so on. In these cases, the results of the online and entrance exams can be provided online on the same day.

This will help you to solve the delays in announcing the results of various examinations at different universities. But everything has to be in the case of a non-formal education system. The use of these tools saves a lot of paperwork and makes the environment free of pollution. This will also bring the transparency of the complete functional system.(7)

ICT for the Development And Management Of Content:

ICT is not sufficient in the education sector, so there is a growing need to develop relevant, high-quality content. ICT can be used in essential areas of content

and administration. Specific initiatives have been taken at the level of the state and the centre in this area. Specific initiatives have been taken to create digital repositories and learning objects for the development of Indian content. These companies include the Saks hat portal of Govt. (GOI), the National Technology Improvement Program (NPTEL) and Multimedia Education Resources (MERLOT) for learning and online education.

We have also taken a step forward to ensure transparency in the education system through ICT. it also took a step further from behind by offering a specific machine that marked the presence of the teacher at the school. The biometric attendance system really helps teachers to go to school, where attending is always a hot issue.

The government of Delhi was a pioneer in the use of ICT to better manage the education system. Ministry of Delhi government has many schools, teachers and apprentices under the administrative authority has developed a comprehensive, functional and effective web-based GIS Based Management Information System (MIS).

Employee Attendance Report also facilitates objective inspections, because the attendance at all schools is shown for the suitability of departmental staff.

To all people through a transparent system, including citizens, schools and various branches of branches, offices, regional offices and headquarters are using the web-enabled software allows you to share information. All those involved - students, teachers and administrators - Information about can be obtained online via the website of witnesses (edudel.gov.in).

This includes information about admission, signing, attendance of teachers, transfers and payment receipts. Can be implemented in all communication initiatives, the electronic, attendance of the employees can be written to the administration online, information about the execution of large announcements, different government institutions can easily be applied and can be shared with other departments. . This type of initiative offers transparency, an important requirement for people in today's society.

While there may be more examples of such initiatives, there is a need for time to duplicate relevant interoperable projects that have a significant impact on society.

United Nations for Education, Science and Culture (UNESCO) is a summary of a case study conducted in nine countries around the world known, most of these studies reflects the need to improve the professionalism of necessity and versatile strategies for teacher training.

Traditional open and distance learning systems use a variety of technological options such as EDUSAT and other TV and radio channels. All these options use ICT. On LAN at school level you can automate a variety of processes.

The library automation, the local cache stored for offline access, office automation, records management, student tracking, resource planning, including the existing ICT infrastructure of the Internet resources and improve efficiency. At the same time you can benefit from savings in costs, time and effort.(8)

ICT and teacher training:

There is decentralization of knowledge in the modern ICT world. Technology is only a tool and should only be used to remove obstacles and problems existing in existing systems. ICT offers possibilities to supplement vocational education and lifelong learning of teachers in a convenient and flexible way. To use ICT for training, the way in which content is designed and delivered must be significantly changed.

Unless teachers and students can understand these fundamental changes, new technologies cannot be applied. Instructors from institutions and organizations involved in the design of the curriculum, teaching materials and the ICT-based education offer must be continuously trained. ICT not only offers this training, but also applies to educational practices. In order to implement an ICT-based distance learning program, the teacher first has to understand the technology and feel comfortable with it. They must be given the opportunity to gain new knowledge. This can be started by promoting a computer training program for teachers.

The use of ICT for teacher training has been recognized by most South Asian governments and teacher training programs such as Intel Teach in India, Pakistan and Sri Lanka. Microsoft Shiksha of India; Several other initiatives in Nepal and Bhutan focus on the use of ICT to train teachers.

The ISTE has created the most comprehensive ICT standard for teachers, students and administrators. The SSA looked at the benefits of ICT in education to achieve the goals of the SSA and then worked with many private organizations to take initiatives to strengthen computer-assisted learning (CAL). Under SSA, provisions for providing computer education at local level are provided for each state under the CAL of the PPP model. ICT can be applied to pre-service and teacher training.

Haryana has several BRC offices (Block Resource Center) through SSA and RMSA. With these centers and infrastructure you can effectively provide service training in these centres.

Instead of inviting teachers to school, you can ask every day to collect a teacher from each school to get a basic knowledge of ICT and its application in the school curriculum.

The training batch period can be done every week or every two weeks by ICT and training implementation specialists. Teacher training colleges and universities can later gain access to material available in the classroom via computers and the Internet to raise the level of basic skills and acquire relevant knowledge.

Visualise is easy to use and easy to use by teachers who are cost-effective, easy-to-use and time-saving tools for teaching at school and at college.

The preparation time of the teacher is reduced and the interaction between student and student increases in complex problems. It can be used without a computer and it fits within your budget. For interested teachers you can prepare a small training on the use of the new tools in school education.

Challenges and solutions for the application of ICT for learning

There are specific challenges for ICT-based education and learning. One of the major challenges to quality control in education is the lack of standards for parameters that measure the quality of education. To address this, all certification bodies, such as NAAC, NBA, AICTE, CBSE and other organizations, must jointly distribute a list of standard parameters to determine the quality of education. The development of ICT has changed the epic knowledge centre and in many cases the student gets more information than the teacher. Teachers have insufficient qualifications and education and curricula are often outdated or inadequate. Installing an ICT device can be cumbersome.

It is economically significant that teachers cannot use ICT tools because of their lack of experience. For this reason, the available quality of education is destroyed. Distance learning through ICT can largely solve this problem. One of the main obstacles is the lack of skilled teachers who can use IT skill fully.

Most teachers do not first want to introduce new technology to themselves, and then students. In principle, I refuse to apply ICT to teachers in comparison with older teachers and younger teachers. Teachers need to update their knowledge and skills as a curriculum and technological change. ICT is currently limited to a handful of elite schools. In addition, it is a computer lab that distinguishes itself from the existing curriculum.

Although computers came to the classrooms of India in 1984-85, the level of adoption of modern technology in education and learning was limited and uneven. Different ICT tools must be available and accessible when needed. Many schools have limited resources to buy books, stationery, furniture and other textbooks. The role of the private sector in providing services in such areas can be considered. The rural population may not be able to pay large sums to use such ICT resources for education. One of the biggest challenges in the implementation of ICT in education is early technological thinking.

ICT hardware and software are designed for general purposes, not designed for training purposes. We first try to think about the available technologies and then apply them to education, but when we look back, the results are more useful and the results are good.

According to the latest tradition, only special topics such as IT and ICT are possible and optional, so a basic knowledge of computers and IT is required to use different ICT tools to learn learning. Only a computer teacher cannot fulfil the mission of agent of change.

Schools can split the screen vertically into two parts to classify infrastructure problems to provide ICT training, and two sets of applications can be displayed and used simultaneously by two users (students). Because a student can use the keyboard and another student can use the mouse, each student can work independently of the other student.

A 2007 study of two ICT-enabled provinces in Gujarat and Karnataka showed that pupils from public schools and access to ICT tools outside the school are generally low. Access to these devices by private school students is relatively good. One of the challenges we have to

meet is the digital divide between private and public schools, as well as the digital divide between rural and urban schools.

A major challenge for teachers and instructors is to develop learning materials that are offered to the available ICT tools, including mobile devices.

Learning materials must be a manageable learning bin and use multimedia. The use of learning objects for mobile delivery has the added advantage that you can reuse and change learning objects without influencing other learning objects and save them at a distance from anywhere.

Barriers include expensive support infrastructures, and online resource development can be costly and time-consuming.

Lack of flexibility in the quality, validity and already prepared learning materials of online materials. Much of the information available online may disrupt students' learning. Students can feel isolated if there is no class like the environment.

Computer programs use rigorous discipline on the campus to manage, manage and manage the campus through the use of computer applications for curriculum development, training and learning, research and expansion, governance and leadership, infrastructure facilities and expert systems with quality parameters at various levels.

Conclusion:

The quality of education through awareness among ICT and stakeholders will positively influence society. ICT can help with the quality and standards of education by implementing it at different stages of education. ICT can be hired for both formal and informal forms of education and will ultimately make the pupil a viable and socially useful part of society. The use of ICT for teacher training can save a lot of government money. In addition, many qualitative improvements can be made, since the resources for training can be at the highest level in the world.

The acceptance of ICT by the administration can help solve problems in the absence of students and teachers. Good quality content is one of the most important issues and has a direct impact on training and quality standards. Overcoming specific problems related to the curriculum can help you a lot.

In short, many quality improvements are possible after careful and conscious implementation of ICT by the various stakeholders in education.

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