Equitable Use of ICT: Issues and Concerns

Abstract

ICT at present are impelling every aspect of human life. They are playing pivot roles in work places, business, education and entertainment. Moreover, many people recognize ICTs as facilitator for change, in working conditions, handling and exchanging information, teaching methods, learning approaches, scientific research and in accessing information communication technologies. In this digital era, the equitable use of ICT plays a pivotal role for providing teachers and students opportunities to learn and apply the latest techniques required in 21st century skills. Pre-service and in-service teachers as well as students need to know to a reasonable extent about the issues and concerns in the use of ICT for education. As teachers or potential teachers and students, they need to be above reproach. Teachers and students should understand the basic issues i.e. effectiveness, cost, equity and sustainability as well as the challenges i.e. infrastructure related challenges, capacity building challenges, challenges related to financing the cost of ICT use surroundings the use of ICT in education and then apply those issues as principle in practice. It was observed that equity has to do with the fact that quality education is provided to students through adequate provisions and equitable distribution of ICT facilities and resources to teachers and students, provisions of training services, equitable provision of electricity, internet and web services in schools in urban and rural areas through accessible roads. ICT improves teaching and learning and its importance for teachers in performing their role of creators of pedagogical environments. ICT makes a teacher efficient to present his teaching interestingly and able to learn the learners at any level of educational programmes. Today in India, teaching training programmes making useful and interesting by the term ICT. Infact, ICTs exemplified by the internet and interactive multimedia are obviously an important focus for future education and needs to be effectively integrated into formal teaching and learning especially in teacher education institutions.

Keywords: Equity, ICT, Issues and Concerns in Education

Introduction

Recent years have resulted in significant deviations in the ways the world operates and communicates due to rapid developments in information and communication technologies (ICTs). This in turn has had an impact on training and educational needs, both in terms of the content and the delivery of training and educational services, but also there has been increasing pressure on decision makers to acquire new technologies. Simultaneously, different forms of ICT are multiplying with an increasing array of ICT options for decision makers to choose from when integrating ICT into education and training.

We can say a radical change in the education system for the better is not possible by simply providing access to equitable use of ICT. A clear picture of what education should be seeking to achieve is the need for ICT to be utilized to their full potential within education systems. In order to make equitable use of ICT in enhancing the reach and quality of teaching and learning, policy makers need to be aware of how ICT can be best value in their country's education system and need to develop a supportive policy environment and framework at the national level for the integration of ICT into their educational systems

Equitable use of ICT in Education

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According to National Digital Inclusion Alliance (2019) digital equity is defined as "a condition in which all individuals and communities have the information technology capacity needed for full participation in the society, democracy and economy". Digital equity is necessary for civic and cultural participation, employment, life-long learning and access to essential services. Resta, Laferriere, McLaughlin and Kouraogo (2018) observe five proportions of digital equity and these encompass access to:

A. Access to hardware, software and connectivity to the internet

B. Access to creating, sharing and exchanging digital content

C. Access to meaningful, high quality, culturally relevant content in the local language.

D. Access to high quality research on the application of digital technologies to enhance learning.

E. Access to educators who know how to use digital tools and resources

The importance of the utilization of ICT in ensuring equitable and quality education among learners represents the above five proportions of equity. In other words, learners must have:-

i) equivalent distribution of ICT materials;

ii) the goals and objectives of education must be culturally appropriate;

iii) learners must have access to the internet so as to share and exchange digital content;

iv) Teachers must be trained on how to use digital tools and resources through professional development seminars and conferences and research on the application of digital technologies must continually be conducted to enhance quality education.

Information and Communication Technology (ICT)

Eminence education system is supported by equity, that is to say, the distribution of resources is the application of appropriate processes so that the results essentially tend to reduce inequality.

UNESCO (2009) defines ICT as the system of technologies, tools and devices that are used to transmit, process, store, create, display, share or exchange information by electronic means. The broad definition encompasses a wide range of technologies such as computers, and its peripherals, video, radio, television, compact disc (CD), digital video disk (DVD), telephone, personal digital assistants (PDA), digital cameras, satellite systems, network hardware and software as well as equipment associated with these technologies such as video conferencing, emails, web logs (blogs), and social network (such as facebook friendsters, my space and twitters). Okai (2019) states that information and communication technologies are computer based tools, they are electronic technologies used for information processing, storage and retrieval. These include computers, word processing, payroll software, separate system software, satellite and internet communication, CD-ROM, projectors, scanners etc. They are

those devices, equipment, machines, tools and instruments used to promote teaching and learning, research and administrative functions.

According to Akubuilo, etal., (2021) utilization of ICT facilities in teaching refers to the method of using ICT strategies in improving the value and practice of teaching in secondary schools. Utilization of ICT facilities involves various methods which include systematized feedback, computer-based operation/network, video conferencing and audio conferencing, internet and computer assisted instruction. It has to do with the arrangement and circulation of instructional content and materials through electronic teaching in order to improve learning and communication at all levels. Hence, the utilization of computers and internal service must be available for students at all levels of secondary school education.

Issues and Concerns in the Equitable Use of ICT in Education

According to FME (2019: 23-24) current initiatives and strategies targeted at integrating ICT in education include the following:

i) The use of the national policy on ICT in education to drive the development and deployment of ICT in education in the country.

ii) Provision of requisite ICT infrastructure and service such as:

- Campus networks in educational institutions especially at the tertiary level;
- Functional websites and email facilities and portals for the ministry of education;
- Computers and other multimedia facilities;
- Internet connectivity through VSAT and fiber optic in all centralized institutions;
- Alternative power supply should be available such as solar panels, generators, inventors and so on and
- CCTV for security and safety of the education community

iii) The introduction of schemes which are targeted at the provision of computers to educational staff at all levels of the education system at a preferential level.

iv) Establishment of ICT laboratories in educational institutions of excellence in the tertiary institutions.

v) Introduction of e-learning and application of ICT to Distance Education and open learning at all levels.

vi) ICT capacity-building for teachers and educational administrators through nationally and internationally recognized certifications.

vii) The use of ICT to streamline the education delivery management.

Factors Influencing Quality of Education through ICT

When implementing measures to promote quality of education through ICT, there are certain aspects, which need to be taken into account. These have been stated as follows:

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- ***Objectives related to Defining Learning*** –There are certain learning goals and objectives which the educational organizations at all levels aspire to accomplish. In regard to this, one of the key learning objectives of educational organizations is to ensure that teaching and learning processes are planned in such a manner that they may lead to effective growth and development of students. The students are able to enhance their knowledge and understanding in such a manner that they are able to fruitfully achieve personal as well as professional goals.

- ***Managerial Functions*** – Within the educational organizations, the individuals need to possess adequate knowledge, skills and abilities regarding the managerial functions. The important managerial functions, which are implemented include, planning, organizing, directing, staffing, coordinating and controlling. When ICT needs to be integrated to make improvements in the quality of education, then the individuals need to plan a number of methods and approaches. Organizing stimulates organizing tasks and activities in accordance to the requirements. Directing is in terms of directing the activities and functions that are in accordance to the educational goals and objectives. Staffing refers to selection and recruitment of trained, qualified and experienced individuals. These individuals should be able to acquire an efficient understanding regarding performance of job duties. Coordinating is referred to co-ordination of various tasks, approaches and programs. Controlling is a term that is used regarding controlling of resources and maintenance of amiable working environmental conditions.

- ***Leadership Skills*** – When ICT is being assimilated within the curriculum and instructional methods, then the teachers and principals are required to work in collaboration and integration with each other. Meetings are organized, in which they discuss the matters and give each other ideas and suggestions. The principals and directors act as leaders to ensure that teachers as well as the administrative staff members are well-equipped and make use of technology in a well-organized manner. In this regard, they even organize workshops and training programs for the teachers and staff, so they are able to augment their knowledge and understanding. After the teachers have assimilated adequate knowledge, they are required to implement it within the teaching-learning methods and instructional strategies. They need to ensure that technologies can be made use of in an operative manner to enhance student learning and help them achieve their goals and objectives.

- ***Decision Making Processes*** – Decision making processes are observed as an integral part of organizations and educational organizations. When the individuals are familiarizing with ICT and other modern, scientific and innovative methods to bring about improvements in the quality of education, then they need to ensure that productive assessments are made, which would prove to be beneficial towards all the members. The individuals need to

evaluate various alternatives available and then make the decisions, which would be beneficial to the students to a major extent. Within the educational institutions, there are different types of technologies which are made use of. Hence, when the authorities are participating in the decision making processes, they need to take into account various factors. These are, age groups of students, learning abilities, subjects, financial resources and overall environmental conditions. The use of computers and mobile phones are commonly used in educational institutions at all levels.

- ***Working Environmental Conditions*** – The working environmental conditions are considered important, particularly when any measures need to be formulated to bring about improvements. In some educational institutions, space is available to a large extent, i.e. there are a large number of classrooms, several computer centers, and library facilities. Therefore, in such educational organizations, it is vital to implement ICT. For instance, when library facilities are large, then it is vital to ensure that computers are available. This usually applies to colleges and universities. On the other hand, in nursery schools, particularly the ones, which are not large, and consist of just one or two classrooms, in such schools, the use of ICT is recognized to a limited extent. When the staff members would not be available and working environmental conditions would not make provision of enough space, in such schools, the use of ICT is recognized to a limited extent.

- ***School Resources*** – The availability of school resources are regarded to be of paramount significance. As it has been understood, when the educational organizations are likely to put into practice modern and innovative techniques and methods or make use of technology, then, financial resources and human resources are the ones, which are considered vital. Financial resources are vital in empowering the individuals to determine new practices and approaches that they would introduce in enhancing the overall system of education. The other resources are human resources which are referred to the members of the educational institutions that need to possess the necessary skills and abilities that are required to perform their job duties in a well-organized manner. When human resources are not available to carry out the necessary functions, then advertisements are given regarding openings either on the websites or in newspapers and magazines. Suitable candidates need to apply for jobs and then selections are made, taking into consideration, number of factors, such as, their educational qualifications, competencies, abilities, job duties and so forth.

- ***School Context*** – Within the school context, there are a number of factors, which are required to be taken into account, which influence the quality of education through ICT. These factors include, school location, size, number of classrooms, number of students, teachers and staff members, average pupil socio-economic status and the overall environmental conditions. When ICT is being put into operation, then the members of the educational institutions need

to ensure that these factors do not get affected in a negative manner. The teachers should possess efficient skills and abilities, so they are able to make operative use of ICT in enriching the teaching-learning methods and instructional strategies. When students are making use of technologies in their assignments and projects, then they need to get engaged in regular practice, so they are able to augment their skills and abilities and achieve academic goals.

- ***School Process*** – Within the school process, the number of factors that need to be taken into account are, facilities, procedures and teacher characteristics. For instance, in schools, where adequate library facilities are not available, where not much emphasis is put upon the usage of technology, where proper infrastructure, facilities and other equipment is not available, in such schools, use of ICT would not be worthwhile. These schools are primarily located in rural communities. On the other hand, in urban communities, schools are well-developed and are making use of ICT within the teaching-learning methods, instructional strategies, administrative and clerical job duties and so forth. It has been observed to a major extent that through the use of ICT within the school process, the individuals are able to perform their job duties in accordance to the desired expectations and incur job satisfaction.

- ***Improved Understanding of the Subject*** – Academic learning is not easy. The teachers and students need to work meticulously and creatively and put into practice the teaching and learning methods in an applicable manner. Through the use of ICT in the teaching-learning methods and instructional strategies, the students are able to acquire an enhanced understanding of the subject. Through the use of the internet, they are able to augment their understanding in terms of various concepts and even observe pictures and images. On the internet, when one searches a particular topic, one is able to obtain access to numerous articles. In some cases, students find it difficult to obtain books and other documents related to their subject. In such cases, they make use of technology and the internet to acquire information.

- ***Increase in Interaction and Teamwork*** – The individuals are able to endorse an increase in interaction and teamwork, when quality of education, as well as other tasks and activities are put into operation through the use of ICT. Before the initiation of technology, when one made use of books and articles in the preparation of an assignment, then they usually worked independently and there was a decline in interaction and teamwork. But with the initiation of technologies, individuals are bringing about improvements in their communication skills and promoting interaction and teamwork. When individuals are making use of technologies and working on projects, then they develop mutual understanding and work in collaboration and integration with each other. Research has indicated that more than six individuals make use of technology and work in collaboration with each other. Therefore, in this manner, ICT promotes increase in interaction and teamwork

Recommendation

1. Government should embark on free distribution of computers to teachers and students at all levels of education system to bridge the gap and encourage ICT based education through lowering the cost for consumers to gain access to online data needs.
2. Long term sustenance of ICT projects must be ensured by policy makers while giving policies. When taking decisions of ICTs to acquire, planners should not only consider cost factors but also availability of spare parts and technical support.
3. To generate effective student learning experiences, digital technologies essentially need to be integrated within the school curriculum.
4. Technical support specialists should frequently be competent for the installation, operation and maintenance of ICT equipment, network administration and network security.
5. Sustained investment and commitment to research and development in ICT is strongly needed. Government should engage in periodic public awareness campaigns and sensitization for effective participation of stakeholders in the execution of ICT in education policies and strategies.
6. There is the need to renovate the old buildings and ensure proper electricity and ventilation and security of ICTs in all the educational centers.

Conclusion

The equitable use of ICT in education is now seen worldwide as both a requirement and an opportunity. Issues and concerns of ICT in education deal with the equitable use of ICTs within educational technology. No doubt, both teachers and students need to be ICT competent to thrive in this technology era. The main issues and concerns of ICT in education mean implementation of ICT equipment and tools in teaching-learning process as a media and methodology. The issues and concerns of ICT in education is generally to acquaint teachers and students with the use and workings of computers and related technologies as well as the social, ethical, technological, costs and electricity challenge to mention but few of the use of ICT in education.

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