ICT LEARNING

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ABSTRACT

The abbreviation ICT is often used in the area of information and communication technology. This covers the features of digital data storage, retrieval, alteration, transmission, and receiving. Information and communications technology (ICT) is a powerful tool that affects many facets of human endeavor. None of the industries is exempt from the consequences of the digital revolution. It has something to do with schooling as well. Information and technology are starting to have a big impact on our educational system. At the moment, our educational system is a part of a knowledge- and information-based society. It has evolved into a crucial component of the teaching and learning process in the setting of our modern civilization. In order to provide students the chance to acquire and use 21st-century abilities, it is imperative that information and communication technology (ICT) be used extensively in the classroom. when the distribution of information via digital channels is increasing. ICT is starting to play a bigger role in the educational process. Over the last two decades, the integration of information and communications technology has significantly changed the practices and guidelines used in almost all business and governmental operations. Information and communication technology (ICT) is being used more often in organizations, particularly in educational institutions, to help with various organizational functions. Group projects, one-on-one instruction, training, and learning are some of these activities. Information and communication technology is used not only for lectures and material delivery, but also for managerial and administrative tasks. By using information and communication technologies, traditional libraries have become resource

hubs. The conventional methods of instruction that high school pupils were originally exposed to must be abandoned in university settings. Information and communication technology (ICT) is present in secondary schools, but its use in tertiary education differs somewhat. It is used by university teachers in a multitude of ways to help their students become mature learners and accomplish their goals.

KEYWORDS: - ICT, learning, Teaching, Knowledge .

INTRODUCTION

There has been a transformation in the world into a global village as a result of the development of information and communication technology. This phenomena occurring in the digital realm has an effect on every facet of existence. Education is one among these factors. Every culture considers education to be the foundation of its society. The capacity of every country to develop is significantly impacted by the educational system that it has. This is not an isolated incident. In India's ancient educational system, the "Gurukul System" was the primary basis upon which the system was built. On the other hand, Indian education has developed throughout the course of its history, beginning with the Vedic period and continuing from the time of independence till the present day. The classroom does not serve as the defining principle for the bounds of contemporary education.By virtue of recent technology breakthroughs, the world that exists outside the confines of the classroom has become more accessible.

From this point of view, information and communication technology, sometimes known as ICT, is very necessary. Among the innovations and improvements that are being implemented in secondary and upper secondary education at colleges and universities, it is considered to be an essential component. A significant amount of emphasis was put on the use of educational technology in order to increase educational standards in the National Policy on Education (1986), which was amended in 1992. Educational Technology (ET) and Computer Literacy and Studies in Schools and Colleges (CLASS) are two key initiatives that have received government backing.

The policy statement was the driving force behind both programs, which opened the way for a more comprehensive program program.

A program that was backed by the federal government was aimed at providing schools with information for a greater communication technology (ICT). Information and communication technologies, often known as ICTs for short, are defined as a "diverse set of technological tools and resources used to communicate, as well as to create, disseminate, store, and manage information." This definition is intended to serve the goals of this primer. Some of the technologies that are included in the category of set technologies are computers, electronic mail, the Internet, mobile phones, web-based personal computers, wireless sets, projectors, interactive boards, broadcasting technologies (radio and television), and other interactive boards. As a result, information and communication technology (ICT) refers to a system that makes use of modern technology to gather different kinds of data in order to interact across a distance. The incorporation of information and communication technology (ICT) into educational settings has been considered to be one of the technological system's potentials. The information and communications technology (ICT) is not only the basis upon which the information era is built, but it is also a crucial facilitator and tool for bringing about educational improvements that will turn our students into knowledgeable knowledge workers. It is a common belief that students are able to absorb formal material, but they have a limited capacity for knowledge acquisition of new concepts.

In the field of information and communication technology, the acronym ICT is often used. The storage, retrieval, modification, transmission, and receipt of digital data are all aspects that are covered by this.The term "information and communication technology" (ICT) refers to anything that makes use of electrical or digital equipment in order to provide people with the ability to get information, communicate with one another, or change the environment. As stated by the United Nations Development Program, "Information and Communication Technologies are essentially tools for handling information." "They are a varied set of goods, applications, and services that are used to produce store, process distribute, and exchange of information." The "new"

information and communication technologies (ICTs) include things like computers, satellites, wireless technology, and the internet. On the other hand, they include the "old" ICTs like radio, television, and the telephone. It is now possible for these instruments to work together to form our networked world, which is comprised of a massive network of linked phone services and conventional computer hardware. The ability to watch and listen to radio and television online from any location in the globe.

ICT stands for "Information and communication technology". It refers to technologies that provide access to

A conversation that took place on the telephone. Comparable to information technology (IT), it is primarily concerned with communication technologies, although it also focuses on other technologies. This includes mobile phones, wireless networks, the internet, and any other kinds of communication that may be available. It is implied that there are more opportunities than ever before to use information and communication technology (ICT) in teacher training programs and to improve the quality of teachers in order to provide more effective education. A scientific, technological, engineering, and managerial approach that is applied in the management of information, its usage, and its link with social, economic, and cultural problems is what the United Nations Educational, Scientific, and Cultural Organization (UNESCO) refers to as information and communication technology (ICT). When it comes to the educational system in today's society, the teacher is the most important component. The improvement of our civilization in all aspects is something that he continues to work for. Teachers who are good at what they do have the ability to mold their students into citizens who are capable of becoming social workers, politicians, poets, philosophers, and other members of society. The connection

between teachers and students may be one of amicable ties. The rapid development of technology has brought about enormous shifts in both the requirements of society and the modes of living that we now engage in. In order to bridge the gap between the current state of teaching and learning technology and the ideal state of affairs in the future, today's teacher education institutes are working hard to restructure their educational programs and classroom spaces. This is due to the fact that they acknowledge the impact that developing technologies have on the workplace as well as on everyday life. ICTs are causing tremendous changes in society. In every aspect of life, they have an effect on the situation. The consequences are becoming more apparent in educational institutions. As a result of the fact that information and communication technologies (ICTs) provide teachers and students more leeway to personalize education to the specific needs of each individual student, society is putting pressure on schools to effectively adapt to this technological revolution.

ADVANTAGES

It has advanced remarkably in the following domains:

1. Expanding the range of high-quality educational resources available
2. Expanding the reach of educational institutions via remote learning
3. Facilitating a student knowledge network
4. Training for Teachers
5. Combining New Technologies with Usage-Based Existing Technologies
6. Better Utilization of Mobile Devices
7. Content Creation Using Repositories and Learning Objects

LIMITATIONS

• Infrastructure to Support ICT Is Available

It is a serious problem that there is not enough infrastructure available to make it possible for schools to implement information and communication technologies. The high initial costs of

obtaining and building the essential infrastructure, in addition to the continuous costs of maintenance and upgrades, present a considerable problem at locations that are geographically remote. When it comes to the efficient use of information and communication technologies in education, the cost and labor that are necessary to maintain this sort of infrastructure also seem to be impediments. This is especially true in locations that are undeveloped and remote.

• Money Available for ICT Implementation

For developing countries like India, the availability of financing to construct and initiate the execution of these initiatives continues to be a source of concern.

• Teacher Capacity Building

For the purpose of maximizing the potential of their pupils via the use of a variety of information and communication technology platform resources, it is vital that educators become technologically savvy.

• Opposition to Change

When attempting to implement information and communication technologies (ICTs) in educational institutions, it is common to encounter opposition, often from the teachers themselves. There is a possibility that they are under the impression that they will become irrelevant as soon as new technology is implemented, or that it will be too late for them to adapt to a new environment. The usefulness of incorporating information and communication technologies (ICTs) into the curriculum of a university or classroom may begin to be questioned by the teachers themselves.

Absence of Knowledge

In education, information and communication technologies (ICTs) are often undervalued, as are their advantages and the most cost-effective methods to access and utilize them. As a result of a lack of understanding and experience regarding information and communication technologies

(ICTs) and their use in education, it is often difficult to integrate ICTs in the field of school and college education. This lack of knowledge is visible even among policymakers, administrators, and educators.

• Use of the Internet

Despite the fact that the Internet offers a wonderful amount of promise for educational purposes, it also has its own set of challenges to contend with. As an example, providing Internet connection to all of the students is a costly proposition for the majority of government institutions and universities. Internet connections in rural regions and distant places are often unreliable, if they are accessible at all. This phenomenon is particularly prevalent in these sorts of locations.

• Language Disparities

English is the language that is used on the internet the most often. According to estimates, about eighty percent of the content on the internet is written in English. The vast majority of educational software that was developed for the international market is offered in the English language.

• Observation and assessment:

The bulk of the difficulties and challenges that are associated with the use of information and communication technologies (ICTs) in educational programs are well known to policy makers, people from donor organizations, and educators. Despite this, there is still a lack of appropriate monitoring and evaluation methods and instruments inside the system, which means that data maintenance on the degree and severity of these issues is still constrained.

OBJECTIVES

1. To examine the effects of ICT by comparing educators' perspectives on how it might improve educational quality.

2. To research how male and female students perceive the usefulness of ICT in higher education.

3. To recommend the optimal course of action in terms of ICT effectiveness.

4. Information and communication technology (ICT) studies is the fourth goal.

5. To research the caliber of schooling.

RESEARCH METHODOLOGY

The Method of Qualitative Analysis

When it comes to qualitative research approaches, the normal practice is often to conduct comprehensive case studies with small groups of students. It is necessary to keep detailed records of both the activities that use information and communication technology (ICT) and the learning that takes place in order to determine the linkages that exist between the two. On the other hand, owing to the fact that these studies are not representative of the whole school population or community, it might be challenging to draw any widespread implications from them. This is because the sample size that is being evaluated is quite tiny.

The Methodical Approach

The quantitative technique often makes use of two groups: a control group and an experimental group (also known as a treatment group). The experimental group engages in learning activities that are directly tied to information and communication technology (ICT), whereas the control group learns via more traditional techniques. In order to determine the rate of learning retention, tests are given to both groups both before and after the experiment. In rare instances, a postponed test may also be utilized to determine the learning retention rate. An unintended addition of additional factors, such as a novelty effect that drives students and instructors to become more enthused, has the potential to distort the results of the experiment, which is one of the drawbacks of the quantitative approach used in the experiment.

Using a Quantitative-Qualitative Method

A greater degree of accuracy and dependability in the findings of the study is achieved via the combination of qualitative and quantitative research approaches, which in turn strengthens the conclusions and suggestions made by the researcher. This collaborative study has suggested two different approaches. The first strategy involves doing quantitative research on a wide scale, which is then followed by conducting in-depth case studies (Becta, 2001; Cox, 1993). Another method is a tried-and-true approach known as meta-analysis, which is the second methodology. Using this method, a large number of published case studies that have similar characteristics are gathered, and then comparative analysis is used to determine whether or not there is a link between the variables. Since its inception, this methodology has been used on a consistent basis by researchers in order to analyze and evaluate data. In the next section, we will discuss this method in further detail after that.

RESULT

Glass (1977) was the first person to successfully use the meta-analysis methodology, which was later utilized in a multitude of reviewers' studies (Cohen, 1981; Kulik, Bangert, and Williams, 1983; Roblyer, 1988). According to Kulik et al. (1983), meta-analysts often used a quantitative technique in their study, with a major emphasis on the following three tasks:

1. Impartial methods for identifying studies;
2. Quantitative or quasi-quantitative approaches for characterizing study characteristics and results; and
3. Statistical techniques for compiling general results and investigating the connection between study characteristics and results.

A concise explanation of the methods that Kulik and his colleagues used in their study (Kulik, Kulik, and Cohen, 1980) is shown here.

1. A large number of studies that investigate the effects of computer-based instructions have been compiled from a variety of sources.

2. The findings of the research are compiled, and the criteria are used to exclude the studies that do not satisfy the standards. Although a piece of research may be published in a number of publications, it is only considered once.

3. In order to further describe the components of the research, categories and variables are developed. Instruction is provided to both the experimental group and the control group simultaneously, and the results of objective examinations serve as the benchmark for determining how far students have progressed. Self-report data obtained from scales or questions on questionnaires serves as the foundation for attitudes on computers, the subject matter, and training pertaining to these topics.

4. The Effect Size (ES) is a method that is used in every area of study to evaluate the outcomes. The effect size may be calculated by taking the total difference between the means of two groups and dividing it by the standard deviation of the control group.

$$\text{Effect Size} = \frac{\overline{X} - \overline{C}}{SD_c}$$

where X represents the mean of the experimental group, C represents the mean of the control group, and SDc represents the standard deviation of the control group.

An sample of the results from the study that Kulik and his colleagues carried out is shown in Table 1 (Kulik et al., 1980, page 23).

Table 1. Means and standard errors of achievement effect sizes for different categories of studies

Coding Categories	Number of		Effect Size
	Studies	Mean	Standard Error
Managing	11	033	0.12

Tutoring	11	0.36	0.18
Simulation	5	0.49	0.33
Programming	8	0.20	0.08
Drill and Practice	**11**	0.27	0.11

The following principles for effect size are presented by Cohen (1977, pages 184–1855) in order to take into consideration the impact of the magnitude of the effect that is being delivered:

ES of 0.2 or less = small effect

ES of 0.5 – 0.8 = medium effect

ES of 0.8 or more = large effect

In conclusion, a grading system with four points was used in order to evaluate the significance of the differences in learning outcomes that occurred between the experimental group and the control group (see to Table 2 for more information).

Table 2. The four-point scale

Scale	Difference Outcome Statistically	Significant
1	Favoured Conventional Teaching	Yes
2	Favoured Conventional Teaching	No
3	Favoured Computer-Based Instruction	No

4	Favoured Computer-Based Instruction	Yes

Due to the fact that there is often a strong connection between the impact size and the four-point scores, regression equations are used in order to "plugg" effect-size estimations in circumstances when there is a complete absence of data.

CONCLUSION

ICT is of critical significance to the field of education. Both the traditional approaches to teaching and learning, as well as the way education is managed, are being put to the test by new and evolving forms of technology. It is imperative that information and communication technology be incorporated into the classroom in order to achieve more success and improve the overall quality of education provision. Without education that is based on information and communication technology, no country can progress. It is said that it is the driving force behind development. ICT is having a tremendous impact on the way that education and learning are being carried out at all levels. It is essential for educators to make use of information and communication technology (ICT) in the classroom in order to provide students the chance to develop and apply skills relevant to the 21st century. While simultaneously improving the teaching and learning process, it also provides the benefit of e-learning, which is a convenient option. ICT is a helpful instrument that may provide educational institutions greater freedom. making use of ICT. This indicates that the learner is now able to access information whenever and wherever they find themselves. The technique of integrating information and communication technology into teaching and learning is used by educators and the educational system in order to convey essential knowledge and abilities to pupils.

It is imperative that you educate the populace if you want to rescue the country itself. Therefore, the level of progress that a country achieves is directly proportional to the quality of the

educational programs that have been made available to its population. The findings of the research suggest that educational institutions need to make use of technology for the purpose of collective development, keeping the best interests of the country in mind; nevertheless, the deployment of this technology must to be carried out in an appropriate manner. All of these things need to be given top priority: advanced teacher preparation, the adoption of novel and creative pedagogies, the construction of institutional networks and infrastructure for information and communication technology, and the raising of collective educational standards by bridging the digital divide and raising the standard of education for both rural and urban populations. The nation's goals and ambitions for education and research must be adhered to in order for it to be considered appropriate. Investing in technology is a cost that is ongoing since infrastructure equipment has to be improved or replaced when devices are getting close to the end of their useful lives.

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