Analysis of the Functionality of Information Technology in the Classroom

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Abstract*: The grandeur of a nation is significantly influenced by the educational system that is implemented to develop its talent. It is imperative that the young minds of this nation be imparted with a spirit of healthy competition, given the world's transformation into a global village and the increasing prominence of the digital era. The integrity of the education processes in the country is a critical concern when attempting to remodel and upgrade the education system. The quality of higher education must be sustained at the desired level, as the needs and expectations of society are changing at a rapid pace.*
Information technologies facilitate the global dissemination of knowledge. By furnishing them with the most recent information and knowledge, these can be advantageous to both students and instructors. Information technologies are "a collection of instruments that can assist in the provision of the appropriate information to the appropriate individuals at the appropriate time," which is essential for effective teaching and learning (Haag, 1998; p.10). Students' autonomy enables them to make the most informed decisions possible regarding their studies, learning environment, time, and resources. In collaborative and interactive learning environments, students are capable of effectively communicating, sharing information, exchanging ideas, and learning experiences with all members of the environment. This document examines the role of information technology in the educational system. I intend to offer a few recommendations and obstacles.

Keywords: Education System, Computers, Teaching, learning.

I. INTRODUCTION

This is the era of information and technology (IT). In the present day, information technology is a part of every aspect of our existence. The utilization of information technology (IT) is on the rise on a global scale. However, the impact of information and technology is becoming more pervasive in all facets of life. Nevertheless, it has a significant influence on the field of education by guaranteeing that the learning process is both engaging and successful. In the classroom, the instructor must now assume a new role of mentoring, coaching, and assisting students in their studies, as the information-rich society encourages the adoption of new educational practices and paradigms. This is in contrast to the traditional role of spoon-feeding. Students have the ability to learn independently due to the extensive selection of programs and access to information. Students may engage in skill-oriented activities within group learning environments to accumulate knowledge. They are capable of participating in the knowledge construction and dissemination process by exchanging their learning experiences and engaging with their instructors and peers. They are capable of acquiring and employing a diverse array of information in a more constructive and productive manner, as opposed to relying on the teacher. Branson (1991) posited that students acquire knowledge through their interactions with one another, in addition to the teacher's instruction. In truth, students are now capable of acquiring a much broader spectrum of knowledge than what is typically taught in traditional learning environments. The teaching and learning process must be facilitated by the use of information technologies that are compatible with the availability and requirements of both teachers and students.

Information Technology:

Humans used several means to store, display, and transmit information, according to history. Papyrus, palm leaves, animal leather, and handwritten manuscripts have been used to preserve and transfer knowledge throughout history. These knowledge sources were elite and limited. Printing disseminated information globally, making knowledge distribution more egalitarian (Menon, B., 2000, p.xi). Knowledge, which comes from information, is typically considered influential. Information technologies, or communication channels, determine information effectiveness and equitable access.

Information technology can spread knowledge across states and countries, ensuring that relevant information is always accessible to the right people. Haag (1998) defines information technology as "any computer-based tool that people use to work with information and support the information and information processing needs of an organization" (p. 17). Internet, videoconferencing, and computing are included. Information technology aids knowledge transfer. Students and teachers benefit from updated knowledge. Information technology (Haag, 1998; p.10) is a "set of tools that can help provide the right people with the right information at the right time," and accurate information is crucial for teaching and learning. 48 Information technologies may result from knowledge development, as Marriam and Cafarella (1997, p.15) say "computer technology (software) extends the mental ability." Therefore, information technologies may include high-tech and low-touch computer and related technologies. Charp (1994) called them emerging technologies and said they are moving from the lab to the classroom. Wireless communications, the information highway, asynchronous mode, ISDN, multimedia applications, PDAs, AI, and VR are covered. Computer technology would be needed for these technologies to work, resulting in a little bulk and a vast brain. Rashid, M. (2001) examined interactive video, CD-ROM, compact video disc, Internet, WWW, teleconferencing, computers, satellites, and e-mail. He said these tools are "modern teaching-learning technology.

Role of It in Education:

Information Technology is the widespread use of computers to analyze, transmit, retrieve, store, and manipulate data. Educational and corporate groups are using these technology.Schools are using more technology to help children understand complicated subjects at home and in class.

Information technology has made both teaching and learning easier:

IT has replaced long, boring lectures in the classroom. Information technology allows teachers to create appealing aural and visual presentations that increase students' understanding of all ideas. This method may also enable student-teacher interactions. Everyone likes animated videos. The whole classroom may be digitalized using information technology, simplifying teaching and learning.

Information Technology helps the teachers and administration to keep track of all students in classroom:

School administration and instructors can monitor the progress of individual pupils by utilizing a variety of tools and applications that have been developed by information technology. Furthermore, parents may be apprised of their child's efficiency. Teachers can also capitalize on this technology by employing it to supplement students' weaker subjects and to offer them additional time and notes. As a result, educators have been liberated from the conventional practice of maintaining student records in journals and registers through the implementation of information technology.

Education using Digital Books:

In recent years, a plethora of educational institutions have implemented digital classrooms, which involve the encouragement of students to use information technology to submit their coursework, exams, and assignments. Additionally, the instructors promote the utilization of electronic texts for the purpose of reviewing the lectures. These digital novels can be accessed from any location, such as a café, the train, or one's residence, for the convenience of the reader. This development has been crucial in the preservation of our environment, as the reduction in the number of books has led to a decrease in the number of trees that must be felled.

Information Technology has made education fun and entertaining:

Currently, all students are proficient in the operation of computers, devices, and mobile phones. However, the educational process has been made more engaging and pleasurable by the integration of IT with mobile app development. The integration of devices and PCs into the classroom can serve as an advantageous approach to this development. By utilizing private classroom groups on Facebook or WhatsApp, students will be able to participate in

interactive sessions, view pertinent videos, share knowledge, and resolve queries and concepts. This technology will improve the educational experience for both students and instructors by offering a more engaging and pleasant experience.

Information Technology has made Education Accessible for all the students:
The introduction of virtual classrooms has completely supplanted the traditional classroom methodologies. This advancement has enabled students to attend lectures from any location in the world, as long as they possess a personal computer and a dependable internet connection. Students can study at their leisure, regardless of the time of day, by employing this technology. Khan Academy is one of the numerous websites that provide complimentary online education services. This platform allows students to acquire education on any subject they wish, irrespective of their age or school curriculum.Furthermore, electronic learning enables students from regions that were previously isolated from the global community to access their academic papers.

Information Technology has made Access to Research and information much easier:
A few years ago, students were required to spend hours in the library in order to locate the information or data they required for their dissertation or assignment. They can now access any information they desire using their mobile phones or computers as a result of information technology. Their writing is significantly more exhaustive and comprehensible as a result of their ability to search Google and YouTube for any article they require.

Information Technology has made group studies and Assignments much easier:
In the past, when a teacher requested that a student participate in group study or complete an assignment in a traditional classroom, it would often lead to confusion due to the fact that each student had their own opinion, and group discussions would result in a complete mess. Thanks to information technology, the discussions can now be conducted on social media forums or through the use of tools and applications that enable users to submit their duties and collaborate in a seamless manner.

The significant role of information technology in the pursuit of a more comprehensive comprehension, learning, and education is benefiting both students and teachers. Furthermore, educators can improve their teaching skills and remain informed about the most recent advancements.

Preparation for the Age of Information Technology:
Various information technologies necessitate specific skills and capabilities for both students and educators. Therefore, it is imperative to conduct incremental exposures to the technologies in order to adequately prepare for the information technology era. they will anticipate in the era of information technology as:

• Requiring pupils to employ electronic databases for their investigation.

• Encourage the utilization of electronic correspondence for the purpose of seeking information and submitting assignments.

• Familiarizing oneself with the advantages and disadvantages of the technologies and conducting research on the capabilities of teleconferencing, compact disc read-only memory (CD-ROM), and other applications.

• Conducting a survey of students to ascertain their level of familiarity with information technologies and their willingness to contribute their knowledge and abilities to the class.

• Utilizing a word processor to create class notes and adjusting one version for use as students' handouts and another for overhead transparencies.

• Utilizing computer programs to maintain records of extensive class enrollment lists, test items, and other data, and enabling students to conduct periodic reviews and updates of their own records.

• Utilizing a diverse array of software applications for data analysis

• Encouraging students to integrate visual elements into their projects.

• Students will utilize their time as a multimedia workstation to plan a presentation, compile projection graphics, video excerpts, animation, sound, and other materials, and endeavor to align specific materials with specific learning objectives. Next, they will combine the materials to create a cohesive presentation.

• Minimizing or eliminating physical issues that arise as a consequence of the use of information technologies.

Some Challenges in Implementation of It Enabled Education in India

Information technology (IT) has the potential to substantially improve the educational system of a country; however, this is not the case in developing countries. The implementation of IT education in schools and educational institutions in these countries is plagued by a multiplicity of issues and challenges, which are substantially exacerbated in the case of schools located in remote villages and rural areas. The implementation of information technology (IT) in rural institutions is impeded by both internal and external obstacles. The subsequent are internal impediments to the implementation of IT in rural institutions.

Lack of trained teachers:

A major obstacle in the use of IT in rural education is the lack of knowledge and skills. There is dearth of dynamic teachers formally trained in IT. Moreover, there is hardly any quality training imparted on a regular basis to teachers involved in IT education.

Unfavorable organizational culture and poor attitude and beliefs :

Educational organizations and school administration in developing nations frequently neglect to acknowledge the importance and gravity of the role of IT in the enhancement of education. Furthermore, the educators' attitudes and convictions are conventional and antiquated. They are oblivious and inflexible, and they are unwilling to adapt to the change. They are skeptic about the efficacy and utility of ITs in school education and maintain the misconception that IT is primarily designed for children.

Shortage of time:

In addition to instructing pupils in educational institutions, teachers are typically responsible for a variety of responsibilities. Furthermore, they are obligated to teach a diverse array of subjects in addition to IT. They are unable to design and develop technology, nor do they have the time to integrate it into the teaching and learning process. The teacher must allocate time to acquire the necessary skills to operate hardware and software, engage in collaborative efforts with other educators, and remain informed about the most recent technological advancements.

Issues of maintenance and upgrading of equipment:

The maintenance and upgrading of IT equipment are impeded by the financial resources of rural institutions. Government initiatives are substantially restricted by budgetary constraints. The IT initiatives in rural institutions are not self-sustaining. The pupils are accountable for the maintenance of equipment in the event that government or private sector initiatives are discontinued. Students from destitute economic backgrounds frequently fail to cover the costs of computing facilities and maintenance.

Insufficient funds:

The most recent and appropriate hardware and software facilities are essential for the effective and efficient utilization of technology. The incorporation of technology into education systems in developing countries is a difficult task that requires a substantial quantity of funding, infrastructure, and support facilities. The absence or insufficiency of funds is the cause of redundant and obsolete infrastructure and equipment.

Challenge of language and content:

A substantial quantity of software that is written in English is present in the global educational software market. The preponderance of online content is available in the English vernacular. The low level of English language proficiency in developing countries, particularly in locations outside of urban areas, substantially impedes the educational benefits of IT.

Shortage of equipments:

In rural areas, government institutions are devoid of computer-related resources, such as printers, projectors, and scanners. The ratio of computers per student is inadequate. In these regions, private institutions are either nonexistent or scarce. The disparity between complementing resources and the inappropriate combination of IT resources in these educational institutions results in a lack of comprehension of IT and a reduction in the diffusion of technology.

Unreliability of equipment:

Even the basic IT equipments and computers possessed by rural schools are unreliable and undependable. The schools lack up-to-date hardware and software availability. Old and obsolete equipments are major hindrances to IT adoption and application.

Lack of technical support:

The technical expertise, absence of IT service centers, and scarcity of trained technical personnel are among the challenges that rural institutions encounter. The continued viability of IT use in a given school is contingent upon the provision of technical support specialists, whether by in-school personnel, external service providers, or both. Technical failures may result in substantial time and financial losses in the absence of on-site technical support. The absence of timely technical support has been a significant impediment to the optimization of computer use in schools.

Resource related issues and internet:

Rural schools usually face trouble with respect to the availability of IT related resources such as supporting infrastructure, uninterrupted electricity, supplementary resources like multimedia, projectors, scanners, smart boards, and so on. Despite being an integral component of the IT, internet is lacking in most rural schools. Most schools cannot afford the high fees charged by internet providers and even where there is internet, slow or erratic connectivity destroys the very essence and impact of IT.

It Initiatives Education in India:

The government of India has announced 2010-2020 as the decade of innovation with special focus on IT enabled education and acquiring of IT skills for students. The motive of the national policy on education is to create an environment of integrated development for education and economic empowerment of rural students. Important initiatives and strides have been taken in the sphere of rural education:

• Computer literacy initiatives for teachers and students • Mobile classrooms through IT buses • E-Learning centers and terminals for enhancing online education for social and economic change in rural society • Community Telecentres to satisfy the requirements of IT learning outside formal school context.

• The development of an IT curriculum • The innovative "Rural Reach Program" by Infosys, which provides firsthand IT knowledge to children in rural areas between the ages of 5 and 10 • Higher education IT initiatives, including E-Gyankosh, Gyan Darshan, Gyan Vani, and other distance education programs • The national award for teachers who use IT in the teaching and learning process.

Suggestions:

The revolution in information and technology has reduced national boundaries to mere lines on maps that are devoid of significance. Education has been designated as one of the services that must be liberalized to facilitate the unrestricted movement of commerce among nations in this scenario. It is impossible for India to function without the assistance of IT, as it is transitioning to a knowledge economy. The government and institutions have been compelled to develop policies that promote the more advantageous utilization of information technology due to the disparity between the demand for and supply of education. Evolving collaboration between public and private stakeholders is essential for bridging the gap. It is imperative to prioritize the enhancement of four key components of information technology (IT): access, usage, economic impact, and social impact. The following recommendations are provided in this paper to enhance and facilitate IT education in India:

• In order to finance IT education in India, it is necessary to establish a public-private partnership for resource mobilization.

• To deliver IT education that is tailored to the skill sets of rural residents using a need-based approach.

• To develop policies that encourage the widespread adoption of IT and the acquisition of skills and competencies.

• The provision of a comprehensive formal education in information technology.

• To raise awareness regarding IT education.

• Provide incentives to enterprises and individuals to encourage their participation in ongoing IT training.

• Establish infrastructure facilities that provide support, such as electricity and internet. In order to guarantee a consistent electricity supply to rural institutions, the government should actively encourage the utilization of alternative energy sources.

• The issue of computer dearth can be addressed through the environmentally friendly practice of computer recycling.

• Foster self-sustainability in IT applications by increasing community participation.

•The provision of high-quality internet access to educational institutions and colleges should be guaranteed by the government and national education authorities.

• To support the curriculum and language diversities, the government should assure that software companies and instructors collaborate to create high-quality content.

• Monitoring and evaluating must be prioritized in order to ensure that ITs are effective and essential educational instruments.

•The primary concerns that Indian educators will need to address as the learning community's requirements evolve will be the urban-rural divide in terms of access, equity, and resources. The divide between the two regions cannot be resolved through the migration of rural Indians to urban areas. Rather, the quality of life in rural India may be improved and more hospitable than that in urban areas with the implementation of health, education, infrastructure, and livelihood opportunities.

II. CONCLUSION

The proliferation of knowledge has led to the development of information technologies. These technologies, which include hardware and software, facilitate the learning process. Learners are now able to engage in learning communities worldwide by utilizing information technologies. They are autonomous and have the freedom to select their educational programs and resources. In virtual learning communities, they have the opportunity to engage in cooperative activities, exchange learning experiences, share information, and learn collaboratively. The instructing and learning process is made more productive by information technologies. In the same way, the role of the teacher differs in novel settings compared to the traditional system. The teacher facilitates and guides the learners in their studies, assuming the role of a coach or mentor. In contrast to conventional classrooms, the teacher is no longer the primary source of information and the focal point of instruction. He/she determines the contents, experiences, and/or activities, locates the resources, and instructs learners on how to access and utilize the information to achieve the desired results. In summary, information technologies are reorganizing the teaching and learning process to align with international standards.

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