The Use of ICT in Elementary Education in India

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Abstract

The present study was a review paper on using Information and communications technology (ICT) at primary schools in India. Academic papers published from 2000 to 2023 were investigated to understand the scenario of using ICT in Indian elementary schools. It was found that primary schools are not equally accessible to ICT equally in India and poor conditions in elementary education in India and ICT facilities are not available adequately at elementary schools in India. The school administration should implement ICT facilities to catch up with global trends in using ICT in the education sector.

Keywords: Elementary, education, India, ICT, school

Introduction

Information and Communication Technology (ICT) refers to the integration of information technology (IT) and telecommunications in various aspects of society. It encompasses technologies, tools, systems, and resources used to create, store, process, transmit, and exchange information electronically. The use of ICT extends learning, enriches the curriculum, expands the horizon, and helps with assessment (Qazi et al. 2020). It has many advantages over the traditional teaching and learning approach (Kalyaniwala-Thapliyal, 2016). The Indian policymakers have tried their best to develop ICT as a vehicle for promoting education since the use of satellite in the early 1970s (Ramesh, 2020). All these Studies have shown that the use of ICT in School is why so important.

Objective

1. To find out if ICT is used at primary schools in India
2. To find primary schools access to ICT equally in India

Children's Learning with ICT

Assessing technology projects presents inherent challenges, and evaluating educational interventions compounds this difficulty. School impact on students' academic and social development typically explains only a fraction of the overall variance, with numerous other factors like family background, personal experiences, and innate abilities playing significant roles. Early forays into integrating ICTs into classrooms often stemmed from enthusiasm rather than evidence-based decisions. However, as the importance of demonstrating tangible benefits grows, there has been a surge in efforts to assess the impact of computers in educational settings. Yet, evaluating ICTs in education remains particularly arduous for several reasons.

Even in schools where ICTs are extensively used, their classroom utilization often pales in comparison to traditional teaching tools like blackboards and handouts. In the UK, for instance, primary school children spend an average of 45 minutes per week using ICTs, while secondary school students spend just over an hour. Moreover, the diversity in technologies and their application across different educational institutions further complicates evaluation efforts. Many studies merely catalog examples rather than delve into assessing teaching efficacy, and those that do often focus on quantitative metrics like the number of computers or software rather than examining the quality of ICT deployment in classrooms.

A comprehensive examination of measurement challenges in evaluating ICTs in schools, published in April 2002, highlighted three key issues:

The ambiguity surrounding terms like "technology" and "technology integration," leads to varied interpretations.

Reliance on internally developed measures that primarily gauge the immediate effects of each intervention.

A tendency to prioritize short-term outcomes over viewing interventions as integral components of broader efforts to reshape educational practices.

Barrier of ICT

Lack of time remains a significant hurdle for teachers to effectively integrate ICT into their teaching practices. Despite possessing competence and confidence in using computers, many educators find themselves constrained by limited time. Numerous studies have highlighted the challenge of scheduling adequate computer time for classes, citing it as a primary barrier to the widespread adoption of ICT in education (Al-alwini, 2005; Beeta, 2004; Beggs, 2000; Schoepp, 2005; Sicilia, 2005).

Another critical obstacle is the lack of electricity infrastructure, particularly prevalent in rural areas but also affecting urban regions due to power cuts and cable theft. Without reliable access to electricity, utilizing ICT tools becomes impractical and challenging, hindering educational endeavors and exacerbating disparities in access to technology-enabled learning opportunities.

Furthermore, the absence of skilled teachers proficient in leveraging technology compounds the issue. While ICT holds the potential to enhance education delivery, its effectiveness is undermined when educators lack the necessary knowledge to utilize these tools effectively. This knowledge gap presents a formidable barrier to realizing the full potential of ICT in education.

Literature Reviews

The current investigation delves into relevant research studies accessible through online publications.

Chandha (2015) explored the intersection of ICT and contemporary classroom dynamics, offering insights into technological tools for learning. Her work delineated diverse methods of integrating ICT into mainstream classroom instruction, advocating for a positive stance towards its effective implementation and proposing practical strategies to achieve this goal.

Yildirim (2007) advocated for enhanced access to technology within educational institutions and called for the formulation of new policies to engage teachers in decision-making processes concerning ICT integration in classrooms.

Chen (2008) demonstrated a lack of correspondence between teachers' beliefs and their actual practices when integrating technology into teaching, diverging from previous studies that primarily examined the impact of teachers' attitudes on their practices.

Perron et al. (2010) defined ICTs as electronic tools utilized for information access, transmission, and preservation, emphasizing the significant influence of the Internet on these technologies.

Selvan et al. (2012) provided an alternative definition of ICT, highlighting its integration of communication and telecommunication systems, computers, software, and data management tools to facilitate data manipulation and distribution.

Rusman (2015) discussed the role of media in learning and broadened the definition of technology in schools to encompass hardware, software, and human resources, all of which contribute to enhancing student learning experiences.

Chinyanyu Mpofu and Watkins□Mathys (2011) encompassed various technologies, including computers, the internet, smartphones, and wireless communication devices, in their examination of educational technology.

Kent and Facer (2004) underscored the multifaceted support that ICT offers to teaching, learning, and educational activities, emphasizing the importance of ICT literacy for both teachers and students in achieving modern education goals.

Additionally, Ofsted (2004) highlighted the challenges associated with teaching English Language and emphasized the necessity of creating an interactive ICT-infused environment to foster student interest in the subject.

A comprehensive review of existing literature reveals that ICT integration is a dynamic and evolving process that involves concerted efforts from teachers, students, and school

administrations. Identified gaps in the literature provide valuable directions for future research endeavors aimed at advancing ICT utilization in education.

Current Situation of ICT in India Education

India's burgeoning information and communication technology (ICT) sector is propelling the nation towards recognition as a global economic powerhouse, contributing approximately 13% to the national GDP. The proliferation of computer facilities in schools has seen a remarkable increase, with 47.51% of schools equipped with computer facilities in 2021-22, compared to 27.31% in 2015-16. Similarly, the availability of internet facilities has surged to 33.91% in 2021-22 from 24.51% in 2015-16. This expansion of ICT infrastructure has opened doors to a wealth of online resources for students, including textbooks, research materials, and educational videos, thereby democratizing access to quality education irrespective of geographical or economic constraints. Moreover, ICT-enabled teaching methods have revolutionized pedagogy, allowing educators to deliver complex concepts in a more engaging and comprehensible manner, thereby amplifying the appeal and effectiveness of online training programs in India.

However, despite the potential benefits, many teachers exhibit reluctance towards embracing ICT, particularly computers and the internet, citing various concerns. These include reservations about the efficacy of technology in enhancing learning outcomes, dissatisfaction with software design, and apprehension about losing control in the classroom as teaching methodologies shift towards a more learner-centered approach. Additionally, factors such as inadequate administrative support, the perceived time and effort required to familiarize oneself with technology, and the fear of technological obsolescence contribute to this hesitancy among educators. Surprisingly, despite the wealth of information available online, a significant portion of teachers admit to rarely, if ever, incorporating Internet resources into their lesson preparation, highlighting a pervasive gap in leveraging ICT for educational enrichment.

Nowadays, the role of ICT, especially the Internet in the education sector plays an important role, especially in the process of empowering the technology into educational activities. ICT plays a vital role in all spheres, especially in business. The influence of ICT especially the internet like open source tool cannot be ignored in our students' lives.So the learning activities very rapidly nowadays.ICT should be integrated into educational activities. From the ICT, the

presence of multimedia games and online games on the internet has been another serious problem that should be wisely handled by educational institutions. The students can have enough time and control their children. The students will have too little time to study and even do not want to attend classes. In such a situation, educational institutions play an important role in eradicating these problems. It has enhanced client and employee satisfaction increased profits, and given one a chance to grow. ICT improves concentration and comprehension. Today, from the time we awaken in the morning to the time before we sleep, media, such as newspapers, radio, television, and computers, surround us. All these media come under the overall umbrella of what are known as today's ICTs. ICT in schools provides many opportunities for teachers to transform their practices by providing learners with improved educational content and more effective teaching and learning methods. ICTs, especially the computer, and Internet-based can be useful in drill and practice; to help diagnose and solve problems, and for accessing information and knowledge about various related themes.ICT stands for Information and Communication Technology. It includes hardware and software and can be used for various purposes of teaching both at the elementary and secondary levels. However, the major issue is most of the teachers who are working at elementary levels are not aware of innovative technologies.

The Azim Premji Foundation (2004; 2008) found that educational technology in India's rural elementary schools continues to be almost non-existent and having access to even one computer would be considered lavish in most rural schools.

Mehta (2005) found that Indian urban elementary schools were four times more likely to have ICT compared to rural schools.

Bharadwaj's (2007) study of 1,000 ICT-equipped elementary schools revealed fewer than six computers per school or about one computer for every 72 students. Less than 9 percent of the teachers in the schools surveyed had access to the Internet, whether at school or outside. Where computers are available in India's elementary schools, the emphasis is largely on acquiring computer literacy skills. ICT is commonly taught as a separate class rather than being integrated into the subject matter.

Conclusion

After studying the above-referred journals the researchers are here in their closing statements. The use of ICT in Indian primary schools not only helps the students but also uplifts the education system by upgrading teacher skills. Students learn by visualizing things which in turn helps them to imagine the concepts. As we know from Edgar Dale's Cone of Experience (Cone of Learning) in the 1940s, children remember 10% of what they have learned, he remembers 20% of what they have seen, they remember 30% of what they have heard but remember 50% of what he had seen and heard (Cloke, 2023). Today's information era is expandable, so in school curriculum, lots of information has to be enriched hugely. Due to that, the basic concept as well as new ideas, innovations, thoughts, and research-related information; curriculum scope is going on broadly. Among this, we have to search which information is basic knowledge-based and short knowledge-based. We have to teach the students how to acquire knowledge. Making compulsion on the student to acquire all information, instead, the student has to get all knowledge, and skills through self. ICT-based education plays a vital role in self-learning in primary schools.ICT is used effectively by the teacher, and the quality of the teaching process will increase significantly. It will also fulfill realistic expectations of students. Overall if ICT is used in primary school, it will be beneficial for teachers, students, and administration. It will reduce time, cost, and work. We found that primary schools do not have access to ICT equally in India.

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