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ROLE OF ICT TOOLS IN TEACHING AND LEARNING WITH SPECIAL REFERENCE TO INDIA

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ABSTRACT

The functions and substantial contributions of ICT tools in the educational system mean that they cannot be ignored in the classroom. Learning and instructing won't be the same if we have full access to all the tools that ICT has to offer. To achieve our training objective and purpose, we will need to take use of the many new possibilities presented by technological advances in education. It's hard to imagine a moment in our modern lives that doesn't include some type of information or communication technology. It has not only made classroom teaching and learning more efficient, but students are now well-versed in ICT resources and e-learning methods. Information and communications technology (ICT) is a field of study and set of practices in the sciences, engineering, and management that deals with information and the relationships among different sectors of society (including the political, economic, and cultural). Information and communication technologies abbreviated as "ICT" Technology has been more integral to the educational process in recent years.

Keywords: ICT, Teaching, India, tool.

1. INTRODUCTION

For "Information and Communication Technology," or "ICT," use the abbreviation. These days, ICT (Information and Communication Technology) is at the center of every human effort. Their impact on culture evolution is well acknowledged. Knowledge of information and communication technologies (ICT) is increasingly crucial for all countries, but especially for those in need of economic growth and social progress. All of this points to the fact that ICTs are now the backbone of social progress. These days, ICT is used in every conceivable aspect of human activity. In recent years, the fields of communication

technology, computer network technology, and information technology have all seen tremendous expansion throughout the globe. Broadband internet access and the merging of telecommunications and computers have opened up a wealth of opportunities for integrating cutting-edge technological resources into the classroom. The ability to integrate, enhance, and interact with each other across a wide geographic distance in a meaningful way to achieve the learning objectives is a game-changer for the education systems, made possible by the convergence of computers and communications. The proliferation of these kinds of communication and computing technologies, together with their user-friendliness, power, and variety of information flow, has given educators and students a window into the wider world. As so, it might pave the way for a brand-new learning culture by altering the very structure and dynamics of educational settings. The norm in today's ICT-enabled setting is a blend of interactivity, adaptability, and ease. The ability to access, expand, change, and share ideas and information in a variety of communication styles and formats is a key benefit of ICT for education. It aids in the development of analytical, evaluative, and problem-solving abilities while also encouraging the use of shared learning spaces and materials.

In their role as pedagogical environment creators, teachers must not only master ICT skills, but also use ICT to improve teaching and learning. It is unclear which learning strategies and pedagogical framework ought to be used for education and training, despite the fact that the literature provides some evidence of the effectiveness of using ICT in technical considerations. How can we design these online classrooms with a particular set of guiding epistemologies or bodies of knowledge in mind? When it comes to pedagogy and technology integration, what will be the new goals and principles of teacher training? Learning and instructing won't be the same if we have full access to all the tools that ICT has to offer. The new technologies in education present us with a wealth of exciting opportunities, and we must seize them if we are to realize our new goals and vision. Understanding the recent major paradigm shifts in education is necessary for appreciating the integration of ICT in teaching and learning.

2. LITERATURE REVIEW

Bera, Saradindu (2020) Information and communication technology (ICT) has altered our routines in several ways over the last few years. The use of ICT has completely altered the classroom experience. Improving teaching and learning methods, and hence the quality of education, is a primary motivation for incorporating ICTs into the classroom. It is evident that the moment has come for the true entrance of ICT into the area of education, given the growing importance of ICT in society, particularly when considering the social, economic, and cultural roles of computers and the Internet. Not only does the advent of ICT and the widespread availability of the internet provide new possibilities for creative problem-solving, but it also allows for new ways of addressing the instructional content for today's students. Technology helps students save time and provides them with potent new methods to study subjects in detail. Teachers and students may now communicate meaningfully across global distances to accomplish learning goals because to the proliferation of communication and computer systems, their simplicity of use, and the

strength and variety of information flow. As so, it might pave the way for a brand-new learning culture by altering the very structure and dynamics of educational settings. The ICT-enabled environment has shifted from one rigid and inconvenient to one that encourages and rewards interactivity. Improved critical thinking, creative problem solving, and memory may all be attained via the use of ICT, which also facilitates the sharing of learning materials and spaces and the promotion of learner-centered and collaborative learning concepts. Education that makes use of digital technologies is unquestionably the future.

Mr. Amin, Md. Sheikh, and Md. Hossain Ali (2020) The most obvious impact of ICT on students' skill development in higher education has been seen at the graduate level. The current research intends to investigate how college students in Bangladesh view and make use of information and communication technology (ICT) tools including computers, smartphones, and the internet for both academic and non-academic pursuits. The 'snow-ball' sampling method was used to compile a representative group of 300 college and graduate school students from 7 institutions. In order to collect baseline information, a questionnaire survey was done in addition to in-person interviews. Both descriptive and inferential statistics were used to examine the survey data. Despite believing that ICT tools enhance their academic competence, problem-solving ability, and communication skills, the majority of students at the chosen institutions in Bangladesh utilize ICT for largely personal and partially educational objectives, as shown by the study's findings. In addition, analysis of correlation revealed that most aspects of ICT use were positively and significantly correlated with age, degree of education, and location. On the other hand, there were no discernible disparities in the use of ICT between the sexes. The findings and their possible ramifications are examined further on.

Nabila Bedjaoui (2019) Incorporating ICT into the language-learning process offers students a fresh perspective on the subject and makes it more enjoyable to work with foreign tongues. The goal of this study is to illuminate the connection between ICT and higher education language instruction in order to promote its further development. The following questions will serve as the basis for our investigation. What does the use of technology pose for language instruction and study abroad? How much, if any, leeway does students have to explore their own interests thanks to technological aids? We put up the following hypothesis: Using ICT increases students' motivation to study and broadens their exposure to other cultures and languages. It puts students in a position of autonomy, which is conducive to skill development. An internal survey from the University of Biskra, Algeria's Center for Intensive Language Teaching will be used for this study. With the use of a questionnaire, we were able to learn more about the situation. We ran a quantitative analysis on our corpus and then a qualitative interpretive analysis to see what insights emerged.

Aida Bakeer (2018) Here we give a case study of how one writing instructor at Al-Quds Open University integrated ICT and social media into his classroom (QUO). The study's overarching purpose is to investigate the challenges faced by university-level EFL writers, as well as the role that technology and social media play in fostering growth mindsets and enhancing students' writing abilities. Due to the proliferation of ICT tools and the

widespread availability of the internet, the practice of incorporating technology into the classroom is gaining popularity. Writing was taught using both conventional techniques and those made possible by the use of ICTs and social media. Seventy-two undergraduates made up the study's sample, which was split evenly between a control group and an experimental group. We contrasted the two groups' perspectives on the use of social media and technological tools for fostering students' writing abilities. The research indicated that teaching writing alongside ICTs and social media helped students improve their writing. Further, college students are content with the prospects for improvement in their writing when ICTs and social media are included.

Strutynska, Oksana, and Umryk, Mariia (2017) The essay is widely regarded as representing the state-of-the-art in terms of information and communication technology (ICT) resources for academia and the scientific community. It is proposed that a survey be administered to Ukrainian academics and teachers to gauge their familiarity with and comfort with cutting-edge ICT resources and developments in the fields of study listed above. To that end, the authors have developed and distributed a questionnaire to Ukrainian PhD students, young researchers, university faculty, and K-12 educators who make use of information and communication technologies (ICTs) in their work. This article compares and contrasts the findings of similar studies conducted by academics and teachers in the European Union. The authors of this study suggested several steps for enhancing the target audience's ICT skills and capacity for academic inquiry. In order to avoid similar gaps in the future, the authors also suggest strategies for enhancing the teaching-learning process in the area of ICT competencies development during the training of future Computer Science teachers at the National Pedagogical Dragomanov University.

3. THE ROLE OF ICT TOOLS IN TEACHING IN INDIA

Over the last five decades, higher education has expanded at an astounding rate to fulfill the demands for better training. Quick developments in ICT have helped it acquire even more traction. In today's globalized environment, the need for professional and knowledgeable workers grows daily. Access to high-quality higher education has always been essential to fostering economic growth and development. Distance learning and open education have been made available nationwide to ensure that even the most distant communities have access to education. The process of learning lasts a lifetime and may be done on a budget. Over the last two decades, there has been an explosion of information and communication technology (ICT) at universities. Even yet, the task of creating a higher education system that is adaptable and self-motivated enough to fully incorporate technology into the administration and distribution of educational software remains onerous.

It is the information and technological era, the 21st century (IT). Science and technology touch every facet of our existence. Massive amounts of new data are being generated in every industry across the globe. These days, it's common practice to make use of digital resources in the classroom, with the goal of making learning more engaging and fruitful for everyone involved. The UNESCO World Education Report from 1998 emphasizes the need of providing instructors and students with adequate access to cutting-edge digital

resources and the internet. If educators want to assist all kids succeed academically, they must be proficient in the use of digital resources. How well technology is incorporated into teacher training programmes determines the level of professional development they provide. When it comes to information, its use, and its link with social, economic, and cultural problems, UNESCO (2002) defines ICT as "a scientific, technical, and engineering discipline and management method." All thriving societies have teachers at their centers. It is undeniable that technology has become an integral part of today's teacher education programs. Television, digital media, cable networks, the internet, and social media such as Facebook, Twitter, Whatsapp, LinkedIn, Igo, Line, WeChat, etc. are all sources of information and knowledge that students have easy access to. In the 21st century, technology plays a crucial role in pre-service teacher training programs. Teachers who lack expertise in information and communication technologies will struggle to meet students' needs in the classroom.

Importance of ICT for Future Educators:

- Pre-service and in-service teacher education benefit from the use of ICT.
- Incorporating ICT into the classroom environment aids in fostering meaningful interactions between educators and their students. They may use this information for lesson planning and assessment purposes.
- Communication between schools, the National Council for Education Resources (NCERT), the National Assessment of Academic Competencies (NAAC), the United States Department of Education (UGC), and other organizations is facilitated by ICT.
- It also facilitates the efficient integration of ICT tools into the classroom.
- Facilitates the development of new, creative teaching methods.
- The efficiency of the classroom benefits from this.
- It also aids in the enhancement of active learning for teacher-in-training and contributes to greater professional development and educational management.
- This new method has already begun to replace the older ones. As everyone knows, today's pupils always have a competitive spirit. As a result, it is essential for educators to possess expertise in the field. The use of ICT can do this.
- Using ICT aids educators in getting ready for the classroom. Various approaches are used to integrate ICT into the training of future educators. Word processors, database management systems, spreadsheet programs, and so on are only some of the technologies that are employed. The instructors employ a variety of technologically-based lesson modules to prepare for their clinical teaching experiences.
- The use of ICT in the classroom not only better equips students for their professional and personal futures, but also better prepares teachers for the demands of the modern classroom.
- Assistive technology (ICT) is utilized in a variety of contexts, including but not limited to completing assignments, connecting with others, gathering information and keeping records, and doing research. In most cases, technology is implemented without regard to the content being studied.

- The use of digital technologies in the classroom. It is a means through which both instructors and students may acquire knowledge. It takes numerous forms, including a variety of instructional media including video games, computer-based simulations, and online social learning communities.
- Modern institutions often use ICT to better manage their operations and staff. Student instructors can provide better presentations if they have access to technology like movies, animations, and simulations to assist them learn. A student will have access to the same technologies if they are taught by a teacher who has access to such technologies themselves. It does away with the old ways of teaching and instead trains educators to use more contemporary approaches.
- Technology has become a crucial component in judging students.
- Information and communication technology (ICT) serves as a school's "warehouse" since it is the only reliable way to keep the school's archives.
- The use of ICT in the classroom improves teacher-student interaction. So, ICT serve as a connecting medium between the classroom and the classroom.
- ICT allows teachers to rapidly disseminate knowledge to their classes.
- With the use of ICT, educators may create engaging classroom settings.
- When a teacher uses ICT, they have a far easier time spotting a prodigy among their students.

The purpose of ICT in teacher education

The conventional classroom layout is being replaced. e. from broadcasting to interactive listening. Today, classroom discussions include not only students but also instructors. In today's schools, the focus is on the needs of the individual kid. Therefore, it is essential that educators be well-equipped to adapt to new technologies in the classroom. Project-based learning, which places students in the position of active researchers, is one example of a student-centric methodology that benefits greatly from the use of technology. ICT has allowed for more efficient and timely communication, as well as the more powerful and pertinent presentation of ideas. Because it is a useful resource for gathering data, students are pushed to seek out knowledge from a variety of different places, making them more informed than ever before. Because of this, ICT is crucial for the training of educators.

The evolution of Information and Communication Technologies

ICT emerged with the advent of the mainframe computer, which was an enormous step forward in the realm of academia and industry. Even in the commercial world, where they may not seem as obvious, mainframe computers and robots play a crucial part in overall progress. The advancements and uses of IT have expanded beyond anyone's wildest dreams, starting with the automation of business processes and moving on to highly sophisticated value-adding tasks like strategic planning, resource management, high-end manufacturing, and mission-critical operations. Along with the rapid growth and improvement of telecommunications technology and the Internet, ICT development has ushered in a slew of brand-new business models and applications. Only the human intellect can fully realize the potential of ICT, yet this potential may be used in many different ways

since it is of a robust nature. Thanks to ICT, information may now be sent without regard to geographic location. The expansion of the market, the lowering of barriers to entry, and the strengthening of capital and technology are all ways in which ICT have aided in speeding up globalization. One mouse click may initiate a transaction halfway over the globe in a matter of seconds. Several aspects of human existence have been sped up and simplified thanks to ICT. That's why, in today's highly technological and digital society, ICT is crucial.

Information technology (IT) can be traced back to the advent of the first mainframe computers, which were developed to meet the demands of the scientific community and the government's statistical data gathering and processing needs. These computers facilitated the rapid processing of large amounts of data, which in turn facilitated the rapid development of new theories and more accurate forecasts. These methods eventually found their way into the workplace, where they were integrated with the usage of mainframe computers and robots to streamline administrative tasks and data analysis. It's hard to fathom how far IT has come since it was first used to automate routine business procedures; now it's used for everything from product creation to resource planning to high-end production to crucial administrative tasks. Many new types of businesses and uses for the Internet have emerged as a result of this change and the accompanying fast technological growth and innovation. In spite of the versatility of ICT, which may be used in a wide range of contexts, the actual extent of its potential lies only within the realm of the human mind. Since the digital medium is less regulated than traditional mass media, physical borders have less of an impact on the free flow of information thanks to ICT. There is speculation that ICT is a key driver of globalization, opening up previously inaccessible markets to companies endowed with sufficient resources (financial, managerial, and technological) to compete successfully there. Transactions in business or E-commerce may now take place with the click of a mouse, regardless of time or location. ICT has sped up the publication of scientific papers in journals and the dissemination of research results. The technology that was originally developed to speed up the processing of data and the calculation of statistics is now present in almost every facet of modern life. Together, information technology and communication in today's digital world comprise what has become known as "ICT," or "the backbone of Tech savvy Society."

4. FACTORS INFLUENCING STUDENTS' USE OF ICT TOOLS AT INSTITUTIONS OF HIGHER EDUCATION

In the last several years, the role of information technology in business and management has come into focus. Technology's influence is expanding into the classroom, where it is altering long-standing norms and processes. There has been a recent trend in Indian higher education toward prioritizing the use of ICT (Information and Communication Technology) in the classroom. The use of ICTs in schools has progressed considerably more rapidly in India. ICT usage presents a sizable opportunity for development in India's higher education system because of the country's large number of colleges and institutions. In an age when the emphasis is shifting from the instructor to the student, this would be helpful in satisfying the needs of the millennial generation. The current generation has grown up

in a digital world, in contrast to their parents and instructors, who were late adopters of technology. Technology is rapidly replacing more traditional methods of instruction since it increases students' ability to learn and aids educators in imparting complex ideas in a short amount of time. That's why it makes sense to use ICT in the classroom; it saves money, boosts kids' motivation to study, and boosts instructors' output. Students are not required to make use of ICT in their normal schoolwork, despite the fact that doing so has a number of benefits. Rapid technological advancements and the accompanying anxiety about whether or not students can keep up with them provide the biggest difficulty in making use of technology. This research examines what motivates college students in India to start using information and communication technologies (ICT) in their regular classes (HEIs).

5. ICT'S IMPACT ON TEACHING AND LEARNING, SPECIFICALLY WITH REFERENCE TO THE INDIAN EDUCATION SYSTEM

Geographically, culturally, linguistically, historically, and pedagogically, India is a vast and varied nation. The Indian educational system is both extensive and ancient. India's public school system follows the age-old, brick-and-mortar format. Old-fashioned teaching methods, memorization rather than critical thinking, prohibitive tuition rates, a shortage of qualified educators, and inadequate classroom space are just some of the complaints leveled about India's educational system. Over the course of the past several decades, the Indian government has altered the education system in many stages through a series of education commissions. Since the usage of satellite in the early 1970s, Indian authorities have done their best to establish ICTs as a vehicle for promoting education. Since then, India has witnessed several governmental and private sector attempts to promote ICT and its application in education. Reforms on a massive scale and in a fundamental way are being implemented in the higher education system as well as K-12 schools as part of the National Education Policy 2020. The policy is grounded on the Agenda for Sustainable Development 2030's five pillars of access, equity, quality, affordability, and accountability. By 2025, the education industry in India is expected to grow to Rs 2,44,824 crore (US$35.03 billion), according to a recent report published in ("Education Industry Analysis - Indian Education Sector | IBEF," 2021). There are more than 250 million children in schools throughout India, and this number is only likely to increase as internet access expands. In FY19, the total number of universities and colleges in India was 39,931. In FY21, India had 967 educational institutions (until December2020). As of the 2018-2019 academic year, 37.4 million Indians were enrolled in some kind of postsecondary institution. The Gross Enrollment Ratio of colleges and universities was 26.3% in FY19. In light of the unexpected changes brought on by the epidemic, universities in India are introducing a plethora of online programs and courses to their curriculum in an effort to keep their students interested in and actively involved in their education. By 2026, the online education industry in India is expected to be worth a whopping US$ 11.6 billion. By 2022, the Indian education technology industry might be worth $3.5 billion.

The use of information and communication technologies (ICT) has become more crucial in education, both formally and informally. Computer classes were to be offered in schools to

maximize productivity by tapping into students' deep technical expertise and enthusiastic embrace of computers. E-learning, group-based instruction, hybrid classes, open and remote education, and other forms of ICT-enhanced education are all now in use. The widespread adoption of ICT and its widespread use in education has allowed both educators and students to meet their urgent requirements for enhancing the quality of instruction and education. This claim is supported by evidence that shows how the use of different gadgets falling under ICT is allowing the student to instantly save, retrieve, alter, and receive information according to his or her own interests and requirements. Explaining the breadth of the word, they said, "ICTs are electronic gathering, editing, storage, dissemination, and display of information."

6. CONCLUSION

Google Classroom is only one example of the way that modern information and communication technology has improved the educational system and boosted student accomplishment. In order to have the greatest impact, the introduction of technology and teacher professional development in its use should be part of a larger educational reform that prioritizes a move away from a teacher-centered, lecture-oriented, learning environment and toward a learner-centered, interactive, and constructive one. A teacher's place in society is one of great respect. The use of ICT in the classroom aids educators in keeping up with the latest information and developments in the field of technology. There is a positive and statistically significant association between performance expectation, effort expectancy, and social influence, and behavioral intention to use ICT tools, and there is a direct relationship between enabling circumstances and use behavior.

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