

Implementation of ICT in Education

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ABSTRACT: *Digital Technology and Connectivity (ICT) within such a short period of time, has been one of the main buildings new society Blocks. Most countries are now looking to recognizing ICT and perfecting core competencies and concepts in addition to reading, using ICT as part of the heart of education reading and numbering. Educational ICT implementations, be they in education management, administration, teaching, learning, measurement of curriculum results, curriculum design, counseling, distance education, testing, etc. fall into the framework of instructional computer science. Having computers or multimedia in schools became more of a fashion piece, the result becoming that its integration is often nothing more than cosmetic despite its potential for making learning liberative. It is also frequently celebrated as a magic bullet for teacher shortages. These are damaging to the child's learning. Professor and education system needs to orient and make the teacher aware of differentiate between developmentally sufficient and prejudicial use of ICT. This also needs to supply the teacher's competence in using ICT for professional advancement on their own.*

KEYWORDS: *Core of Education, Educational Informatics, ICT, ICT & Teaching Learning Processes, N P on ICT in Education.*

INTRODUCTION

Globalization and technological transformation processes have accelerated the formation of a new, technologically oriented global economy, driven by information and directed by expertise, in tandem over the last 15 years. The situation in higher education is reasonably straightforward in terms of the use of teaching technology. There is space for greater autonomy in learning with adult learners with social skills, interpersonal skills, and learning abilities established. There is also no disagreement about the core and non-core elements of education in the usage of ICT, with the exception of socially responsible and financial purposes where appropriate. In just a short period, modern Western society blocks have become one of the basic buildings of Information Technology and Communication (ICT). In addition to lectures, writing, and other curricula, several countries are also trying to accept ICT and master key competencies and ICT values as part of the education heart[1].

Although the word "informatics" has been used in currency for quite some time, it was only recently preferred for the use of information and communication technologies (ICT) in a number of different fields of operation. Today we are addressing Medical Informatics, Legal Computer Science, Bio-Informatics and Sports Computer Science, usually denoting ICT applications in the respective fields. The word Educational Informatics has managed to gain currency in this sense. Although there are still two popular ideologies in this field, a strong focus emerges, viz. Technology-focused and based on pedagogy. Figure1 has been showing the various segment where ICT can make a big difference in order to accomplish the task with greater level of satisfaction. Figure1 has been showing the different component of the ICT.

In education, the word informatics can be defined as the science and art of systematic application of knowledge and communication resources across all educational dimensions of operations. And UNESCO defines computing as the science of the maintenance of concept, implementation, assessment, usage, and pattern recognition systems, hardware, software, organisation, and human aspects, including technical, financial, and political, including regulatory aspects of those international implications. Thus, all ICT applications in education, whether in curriculum management, governance, teaching and learning, assessment of student success, curriculum nature, therapy, distance education, research, etc. The Computer Education Intent. According to UNESCO, information technology and communication, or ICT, is classified as computer technology, primarily in conjunction with the other development of telecommunications technology[2].



Figure 1: Illustrates the component of ICT

Through this, the advancement of technology has given the world many benefits. It has made the world a global village, in addition to improving competitiveness, and has made access to information very convenient. Recent advances have left the education sector behind in tapping deep capital into the latest technologies. In education, the use of computer technology has become much more than an alternate option. Stakeholders in the education sector have identified ways of incorporating the application of information technology into daily educational processes to ensure effective learning.

2. REVIEW OF LITERATURE

David I. Walker in his study discusses about any moral education method that prioritizes the development of moral character and moral virtue). Following a genealogy of the legitimizing principles for the cultivation of pupils' characters from the "sinful pupils" of the eighteenth century

to the "flourishing pupils" of the twenty-first, the authors argue that, while the battle for the symbolic capital of character education may be winning at the theoretical level and the level of empirical school-based practice, the battle for the symbolic capital of character education may be losing at the level of empirical school-based practice. The terminology employed in government policy must be modified to research results and academic advancements in contemporary character education. To do this, character educators must serve as "knowledge brokers," effectively repackaging facts to justify changes in teacher training and educational policy[3].

Sanjeev Kumar in one of his study focuses on mobile communication and GPS applications, a triple frequency single-feed S-shaped circularly polarized microstrip antenna with a tiny frequencyratio has been suggested. For multi-band operation, an S-shaped slit is carved in the center of a square patch of 84.584.5 mm². A single microstrip line feeds an aperturecoupled feeding structure in the proposed antenna design. The simulation results indicate that the suggested antenna may be utilized for multi-band operation at 1.193 GHz, 1.454 GHz, and 1.615 GHz with effective return losses of -34.34 dB, -18.23 dB, and -24.75 dB, respectively. Over all bands, the measured gain of the intended geometry is more than 5.0 dB, and the measured frequency ratio is 1.2. With the assistance of commercial EM software IE3D, the antenna design and optimization is completed[4].

E. N. Kumar in his study discloses about the handling of the handoff choice is a critical problem. Users may switch between different wireless technologies such as WLAN, CDMA, and contemporary 3G networks via the Wireless Mobile Cellular Network. In 4G wireless, heterogeneous networks are combined. Support for vertical handoff (EVH) is needed for smooth communication and movement across these diverse wireless access networks. The convergence of heterogeneous networks, such as the handover process between wireless cellular networks and WLAN, is known as vertical handover. In this article, one of the handoff methods for various route loss models is described. In fact, the need to start handoff occurs when the present base station's Received Signal Strength falls below the threshold value. It manages the handoff in an adaptable manner based on the needs of cells. This article discusses a simple and reliable EVH algorithm for handoff procedures. The method analyzes all of the parameters for all of the networks under consideration before deciding on the handoff by comparing the minimal threshold parameters with the current network's values and then all potential networks' values. With a Call Blocking Probability of nearly 0%, our method provides improved service quality for all types of networks[5].

3. DISCUSSION

3.1 Access To Learning Material:

The internet is full of lots of learning material that can be accessed and used by the learning process to substitute what is supplied in the school environment. There's many e-books, analysis guides and previous exam papers accessible on the wider internet and students can use these to boost their body of knowledge. Educational leaders have computers and the internet for the students to use for this purpose[1].

3.2 Continuous Learning:

In the modern world, you don't have to be in the classroom to understand. The use of information technology in education has helped students, no matter where they are, to continue learning. Professors and instructors will have materials sent to students and then, even without physically entering the classes, they can complete and apply the coursework, so the teaching method must never end. Students will continue to read, even when they are at home. This has increased the efficiency of the educational system considerably[6].

3.3 Sharing of knowledge:

Via online discussion groups, students can share knowledge, take part in insightful debates and generally learn from each other. Despite geographical distances, the introduction of information technology in the classroom has effectively empowered students from all over the world to witness and exchange experiences together again. In education, information technology has also helped students grow an appreciation for cultural differences and, in effect, create a more inclusive and cohesive environment[7].

3.4 Using Audio And Visual Aid As A Learning Mean:

The use of IT in education has made teaching to students much easier for the tutors. By using audio and visual tools, students can gain a deeper understanding of the subjects being taught. It is now much simpler to generate demonstrations and bring some legal application into the principle taught in class [8]. Early learners, thus, have an opportunity to meet people who have understood what was originally taught in classrooms.

3.5 Distance Learning:

Any use of information technology in schools has been promoted by learning institutions to prepare for this new generation and adapt to a rising population with unique needs. College classes have allowed the majority of the working and youthful population to return to school and obtain second or additional certifications. You can attend a university abroad without even getting out of your home country and at your own convenience[9].

3.6 Proper Record Keeping:

Using technology, student records can be stored in a more structured and reliable way. The implementation of information technology into education has made it easier to keep count safe and correctly, unlike in the past where records appeared to have been kept manually but there were several cases of missing files. Therefore, the flow of data was much smoother[10].

3.7 Potential benefits of ITC:

ICT may be quite useful in encouraging people to read. Students may become more successful learners by incorporating software into their studies. They will understand what information they need, why they require it, and how to get it. Active learning, according to Bransford, Brown, and Cocking, enables students to determine when they need a certain piece of knowledge and if they have previously learned it. Active learning also entails learning on one's own. By having internet connection in their classrooms, pupils will no longer be completely reliant on their instructors. We may use the internet to search for information, discover what we need, duplicate it, and continue to seek for more. Through the usage of this learning method, students become self-managed in

their learning process. Self-managed learning, as stated by Jarold and Sue allows students to be self-motivated and self-directed learners who can react quickly, readily, and efficiently to fast changes in information. Teachers and students, for example, may be able to stay up to speed on problems and debates in educational and other areas by using blogs. So we don't have to wait for the latest update of printed educational books or newspapers to learn about what's going on in our educational sector for an extended period of time. ICT may also be used to facilitate flexible and collaborative learning. By utilizing the internet, we can expand our education outside the hours of school, demographically where we are, and who our instructors are. We can access the internet at any time and from any location. E-learning, according to Uhomibhi, enables students to access knowledge from anywhere and at any time. Technology also allows us to communicate with people who live on the other side of a boundary. Students in rural regions may acquire information from metropolitan areas, exchange knowledge with other students or instructors in the same region, or even in different countries. ICT allows all human components of schools, including leaders, instructors, IT coordinators, and students, to engage in cooperative learning and shape learning groups, in addition to immersive education. We can do what we can't achieve alone by working together, as Moodiel describes.

The most essential element of learning in collaborative learning that we aim to accomplish through ICT is interactivity and cooperation. As Rodrigues put it, "good learning happens when students are interactively involved in a learning activity." "Learning via the use of ICT is more than just memorization. This enables students to comprehend their own learning processes, engage in interactive activities, appreciate innovation, and have fun. As Rodrigues has stated, using technology to promote collaborative learning, there will be communication not just between human and machine, but also between human and person. Students may interact with machine-mediated instructors or other students in a web-based learning environment, for example. We may be able to comprehend meta-cognitive with the use of ICT. Using ICT in our education, we may learn how to learn rather than acquire a specific talent, as Monteith points out. It assists us in comprehending that acquiring new technology and information is no simpler than learning old knowledge and abilities. This knowledge is critical since many individuals are afraid of learning new technology because they believe it is more complicated and harder than studying old technology. Furthermore, most new technologies are typically considered to be simpler to understand and use than older ones. The outdated paradigm can be changed by integrating ICT into our schooling. Meta-cognitive training includes two essential components, according to Paris and Winograd. That's what self-evaluation and self-management are all about. Learners may reflect on and evaluate their own skills and knowledge growth via self-assessment. Self-management allows learners to plan, choose, and utilize learning methods that they like to acquire information. Children's literacy may be improved with the use of ICT. As stated by Adonis, active use of ICT may help pupils improve their literacy and numeracy. Microsoft Word, for example, may motivate youngsters to learn to write. We will appreciate and be excited about typing many new words using a computer. It may also help youngsters develop their communication and listening skills. It's because they're able to work collaboratively with their classmates, instructors, and parents/adults.

Some children need the opportunity to see what others are doing and to tell them what they want to know. Reading tales available on the internet may also help youngsters develop their reading

abilities. As a result, ICT plays an essential part in the scaffolding cycle for improving children's education. Students may benefit from ICT not just in terms of cognitive development, but also in terms of learning motivation and communication. According to Davies and Birmingham, there are three benefits of utilizing storyboard system technology, kar2ouche, to help students learn Macbeth characters. Intelligence, drive, and communication skills are three kinds of advantages. Students may deduce what is happening in the narrative without the instructors having to tell them. They are motivated to study and have pleasure while doing so, making learning less unpleasant and exhausting. We need to engage with their instructors and classmates[11].

CONCLUSION

The use of such technologies would improve the standard of teaching effectively in the teacher training program. A well-designed teacher training curriculum is important for meeting the demands of today's teachers who want to learn how to use ICT effectively for their teaching. Therefore, the factors affecting the efficacy and cost-effectiveness of various approaches to ICT use in teacher training need to be considered by special educators and policy makers, so that training strategies can be better investigated to make these improvements practical for all. So if ICT is used by the Institute in the teaching training program, our teaching and learning would be too smooth and comprehensible for any form of school in our country. Finally, in providing digital media simulations of good teaching practices, trying to provide individually tailored training programs, helping to address the alienation of teachers, constantly linking individual teachers to a wider teaching group, and trying to encourage teacher engagement among teachers, more attention is paid to specific ICT roles.

Incorporating ICT in schools/education has many benefits and difficulties. Each school has its unique set of obstacles based on its surroundings. The challenges are often classified into four categories. These include technical barriers, instructor reluctance, student reluctance, and the technological framework of impoverished schools. In order to effectively integrate ICT in classrooms, a few issues must be addressed. If we don't grasp those things before implementing this, we'll lose a lot of time, energy, and money. These are the school's societal, governance, ethical, and technological management systems.

REFERENCES

- [1] M. Malaysia Education Blueprint, "Malaysia Education Blueprint 2013 - 2025," *Education*, 2013, doi: 10.1016/j.tate.2010.08.007.
- [2] Department for Education, "Development Matters in the Early Years Foundation Stage (EYFS)," *Transpl. Proc.*, 2012.
- [3] Office of Educational Technology, "Reimagining the Role of Technology in Education: 2017 National Education Technology Plan Update," 2017.
- [4] Department for Education, "Mathematics programmes of study: key stages 1 and 2 (National curriculum in England)," *Dep. Educ.*, 2013.
- [5] Ministry of Education, "Malaysia Education Blueprint 2013 - 2025 (Preschool to post-secondary education)," *Minist. Educ.*, 2013.
- [6] P. Srivastava, "Educational informatics: An era in education," 2012, doi: 10.1109/ICTEE.2012.6208613.
- [7] E. N. Kumar and E. S. Kumar, "A Simple and Robust EVH Algorithm for Modern Mobile Heterogeneous Networks- A MATLAB Approach," 2013.

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- [8] US Department of Education, "Reimagining the role of technology in education: 2017 National Education Technology Plan Update," *Off. Educ. Technol.*, 2017.
- [9] DHET, "White paper for post-school education and training," *Gov. Gaz. no 37229*, 2014.
- [10] Sanjeev Kumar, "Triple Frequency S-Shaped Circularly Polarized Microstrip Antenna with Small Frequency-Ratio," *Int. J. Innov. Res. Comput. Commun. Eng.*, 2016.
- [11] D. I. Walker, M. P. Roberts, and K. Kristjánsson, "Towards a new era of character education in theory and in practice," *Educ. Rev.*, 2015, doi: 10.1080/00131911.2013.827631.