

12. Integration of ICT For Effective Teaching and Learning

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Abstract:

This paper aims to discuss how we can make the teaching and learning process better with the help of combination of ICT in education. This paper focuses on the introduction of ICT, digital culture in schools and colleges in order to improve the standard of teaching, learning and education system. ICT is considered as an effective tool to transform the education system. Technology based teaching and learning into the schools and colleges support, enhance and optimize the delivery of information. Integration of ICT in education improves the effectiveness of teaching learning process.

Keywords:

Teaching and learning, ICT, E-learning, digital culture, ICT tool, Reflect digital culture.

12.1 Introduction:

Information, communication, technology generally refers to all devices networking components, applications and systems that helps in interaction with digital learning. Sometimes ICT is used interchangeably with IT or (Information Technology). ICT is comprehensive than IT.

ICT includes components and tools related to computers and digital platforms, Components including data, internet access, software, hardware, cloud computing. ICT has the power to drastically change the traditional way to teaching and learning process. It continues to revolutionize all parts of human learning from computers to robots, libraries to E-library, teachers to facilitators, books to E-books.

Integration of ICT in education refers to the use of computing devices, laptops, desktops, data projector, software programs, printers' scanners and video conferencing, which can be used in classroom for daily instructional process.

With the help of ICT all the ranges of subjects including Arts, Humanities, Science, Mathematics and Languages can be easily taught and learned. Technology based teaching helps and support to both the learner and teachers. ICT which refers to Information and communication technology can be defined as "a set of techniques and devices based on new technological tools and the different channels of information and communication."

12.2 Usages of ICT in Education:

ICT provides wide platform to obtaining, storing, processing, and transmitting information digitally. Enormous impact of ICT in the World of education cannot be unnoticed. ICT have become a fundamental need of teachers in teaching- learning process.

ICT in education, eliminates geographical barriers, lack of content/information and provides access to globalized education to pupil regardless of their location. ICT have renewed the traditional methods of teaching and learning by using innovative educational tools like GOOGLE CLASSROOM, TED talks, Canva, Google Books etc. It has been proven that by using technology and ICT tools in the classroom while teaching, promotes quick learning, assimilate concepts easily, improves productivity as well as motivate students to learn more.

Use of videos, projector, graphics, computer, Table make teaching and learning more interesting, informative, interactive as well as entertaining. Use of ICT tools stimulates the imagination capacity of students, encourages individual learning, promotes students' flexibility and autonomy. ICT helps the facilitator to personalise the teaching process especially for slow learner and helpless students. ICT enables the student to receive information and content from various sources like Wikipedia, various publications, PDF, e-books etc.

ICT help the educators to build a student centric learning environment in the classroom. Utilization of ICT, facilitate both educators as well as students equally. Combination to ICT while teaching promotes the comprehensive principles of the education policy. Students can benefit from ICT in various ways including e- learning, experiments in virtual laboratories, online testing, low - cost and easily accessible resources.

12.3 The Role of ICT in The Teaching and Learning Process:

- A. Bilingual Learning** - With the help of ICT tools students and teachers can select their preferred languages. It has been proven that learning in student's own language (mother tongue), such as Hindi, makes learning more effective, enjoyable and creative.
- B.** ICT enables the students to learn complex and difficult subjects such as Mathematics, in their preferred medium. It makes learning process more efficient and flexible for the diverse linguistic learner.
- C. No Infrastructure Barriers-** The concept of E-library / digital library saves the space of conventional computers laboratories or traditional libraries. In rural areas where there is lack of infrastructure, less access to computers, students can easily learn with smartphones, applications and electronics media. With the help of smart ICT labs, we can solve this problem of rural areas where consistent power supply is needed. ICT enables the educators to educate from their local residents in multilingual mode of instruction. ICT connects the education on global level.
- D. 3)Student Centred Approach** - Learner centred teaching methods makes it more flexible for students. Student centred approach promotes lifelong learning, puts students' interest first, independent problem-solving by students. In traditional way of teaching learning process, teachers were in "active" role while students were in "passive" receptive role. In Student Centred Learning, students can choose what will

they learn, their mode of instruction and learning space. Student Centred Learning prioritizes students' individual needs and personalized learning with wide range of resources. It encourages students' active participation, collaboration, critical thinking.

- E. Quality Education** - ICT plays crucial role in providing quality education to the students with modified content and more effective teaching strategies. ICT have the power and potential to change the learning experience of those students, who are having physical disabilities, unique individual needs and are living in rural areas. Use of ICT tools on Primary and Secondary levels like videos, TV, podcasts, broadcasts, and documentaries provide authentic information as well as makes teaching-learning process more interesting, engaging and effective. ICT enhance the learning experience with audio visual teaching aids, which builds curiosity, improves their listening skills. Moreover, it improves peer support and collaboration between students.
- F. Education & Globalization-** ICT enable us to interconnect with nations, exchange information, knowledge, ideas across borders. Collaboration of ICT facilitates integration of education systems across the globe, access of resources and innovation in teaching and learning. ICT allows the students to collaborate and learn from educational institutions worldwide.

ICT have played important role in spreading multiculturalism, opening up opportunities to connect, collaborate while having access to wide range of knowledge, resources not only what they can afford or have but from worldwide.

12.4 Findings:

- The use of ICT in education has been proven to have a significant positive impact on the quality of teaching and learning outcomes.
- The use of ICT, facilities teachers by assisting students to learn with ICT tools by their own which develops creative thinking skills, self-confidence and problem-solving skills.
- Integration of ICT promotes learner centric collaborative learning through sharing learning resources and space.

12.5 Suggestions:

- Educational institutions should provide access to ICT tools and resources by providing ICT infrastructure and labs with advanced computer systems, hardware and software.
- In order to implement ICT in education we need to train teachers to use ICT tools and resources to change their attitude towards technology.

12.6 Conclusion:

ICT played role of catalyst in teaching and learning process. ICT provide endless opportunities to both teachers as well as students to learn, upgrade, gain knowledge and develop their skills. ICT base learning improves learning experience of students, creativity level, improve IT literacy of students, minimise cost and save money, improves communication and collaborative learning.

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