

Research Article

**ROLE OF ICT IN TEACHING AND LEARNING PROCESS**

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**Abstract**

ICT is a beneficial tool towards the implementation of self paced learning. The implementation of various ICT related tools has made the overall teaching process more efficient. The rate of interaction between the students and the teachers are also enhanced with the help of this process. The secondary mode of data collection has been used in this study to understand the main concept and related information. The implementation of various ICT tools also ensures that the students are able to learn on their own. With the rise in technology and internet, it can be stated that the implementation of various ICT tools will be beneficial for the overall teaching process.

**Keywords :** E-learning, ICT, ICT tools, Self paced learning, Literacy development

**Introduction**

Huge changes in technology can be observed across the globe on a regular basis. It can also be stated that developments and economic growth resulted in multiple changes in the overall structural foundation. Information and communications technology (ICT) can be used as a viable tool towards the overall learning process. With the rise of the internet and usage of various technologies towards the learning process, usage of ICT will be beneficial. ICT also has the potential to increase the level of interaction between the teacher and the student, which will increase efficiency of the entire process of learning. The interest of the student also increases as there are multiple audio and visual methods of learning associated with the ICT process. In the past few years, the world has witnessed a phenomenal growth in communication technology, computer network and information technology. The growth of these communication systems, their ease of use, the power and diversity of information transfer allow teachers and students to have access to a world beyond the classroom. It has the potential to transform the nature and process of teaching and learning environment and envision a new learning culture.

**Aim and Objectives**

The prime aim of the research is to understand the implementation of the ICT tools and technologies towards the teaching and learning segment.

The research objectives can be stated as,

- To understand the definition of ICT

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- To evaluate the implementation of ICT in educational institutes

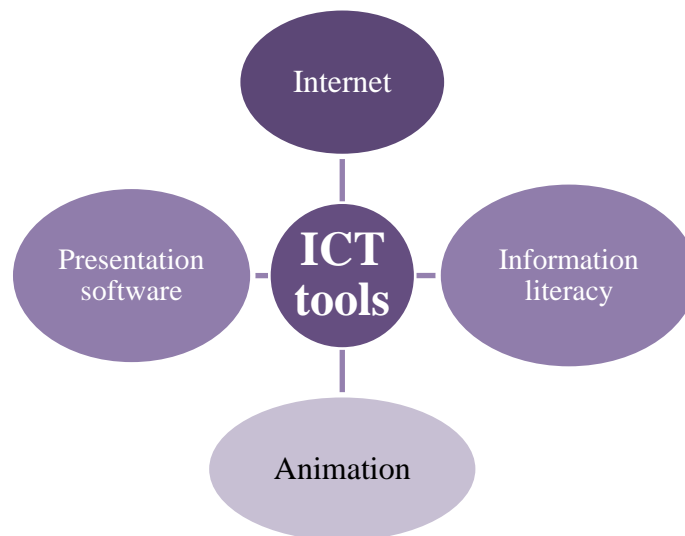
- To discuss need and benefits of ICT usage

### Literature review

The role of science and technology in the overall process of education has significantly increased over the past two decades. According to the statement of Agarwal and Mittal (2018), education in the 21st century is going through drastic changes and information and communications technology can be used as an alternative for this purpose. ICT can be defined as a set of resources or various technological tools. These tools are used for the purpose of sharing or exchanging information along with creating new segments of resources (Unesco, 2021). These tools can consist of a number of different equipment such as the internet or various broadcasting technologies.

The learning technology that ICT provides can be defined as a self paced learning process. As mentioned earlier, there are various segments associated with the overall process. With the effective use of these segments, the process of teaching or learning can be done in a more productive method. From the perspective of the learning process, the interaction between the teachers and the students can also be enhanced. As stated by Zia *et al.* (2018), the students are being updated, the capacity of teachers are also enhanced. The implementation of the process in this segment ensures that an open and interactive channel of communication is being established between the teacher and the student.

It is a known fact that education nowadays is no longer confined into books or other reading materials. The learning of new technologies is also essential with the presence of new literacy's into the segment. As per the views of Park (2018), the rate of digital literacy should also be considered as a part of the learning process, which can be significantly improved. These new set of technologies can be used towards the traditional ways of learning so that things can be done in a more engaging way. This can also present itself as a challenge for the teachers as they need to integrate these technological advancements in their teaching processes. By doing so, it can be ensured that student engagement is increased towards the technological literacy's.



**Figure 1: ICT tools**

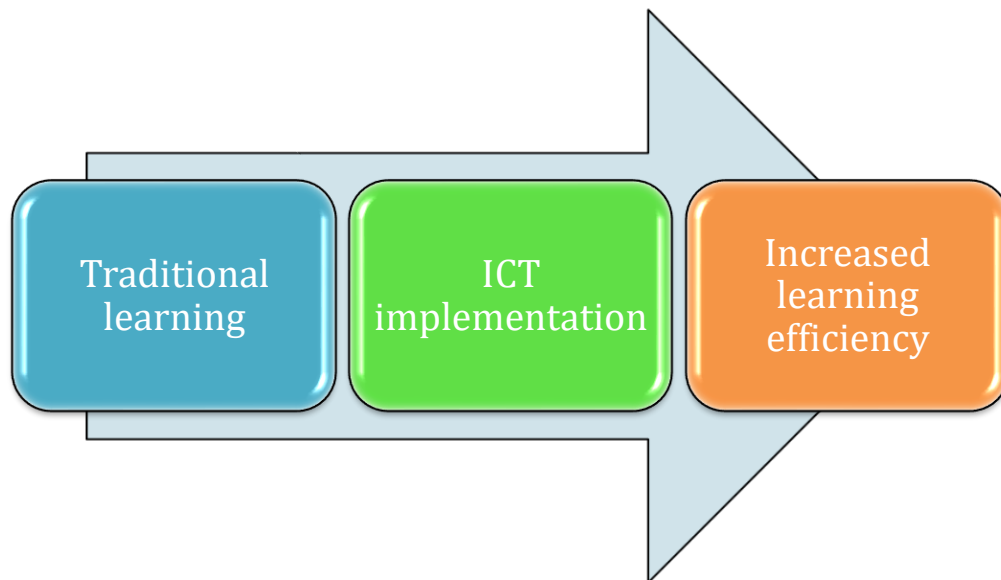
(Source: Self- developed)

With the increase in the overall rate of interaction, an active learning process also comes into play. With increased discussion among the teacher and student, the amount of feedback also

## ROLE OF ICT IN TEACHING AND LEARNING PROCESS

increases. As a result, the pace of the learning process increases. The pathways of learning can also be mapped a lot effectively in this way. However, as ICT is associated with digital content, it is required that the quality of the digital content is significantly high so that the rate of acceptance is increased (Blau and Inbal, 2017). The sustainability of the present society can also be maintained with the help of the ICT process.

The overall learning process can be categorized into two distinct segments, delivery and the destination. Technological implications are also associated with creativity, which also creates more chances towards knowledge sharing. This also increases the capacity of the learners and improves their skillset. These opportunities caused by the ICT implementation should be evaluated so that the process can be improvised. The portion of the youth that is in dire need of learning can also be helped. The potential of this portion of the population can also be evaluated. As stated by Chan (2018), educational implementations supported by ICT can impose positive effects on the youth. The expansion of the education segment can also be achieved through the use of this.



**Figure 2: ICT implementation in learning**

(Source: Self-developed)

Incorporation of ICT tools into the teaching segment also points out the fact that the teaching style of the teachers will also change. The overall learning process is transforming and with that, the roles of the teacher will also change (Rodriguez *et al.* 2018). However, implementing the technological advancements into the learning process is a complex process. If the ICT based teaching methods are compared to the traditional ways of teaching, the enhanced learning process is way ahead in terms of efficiency.

Implementation of ICT can bring various advantages towards the way of teaching and learning. In the overall education segment, the presence of ICT opens up new ways of providing knowledge towards the students. The teachers are also positively impacted by these scenarios as they are able to provide new guidelines or teaching methods towards the students. As stated by Asabere *et al.* (2017), implementing the ICT model will also be beneficial for the overall process of integrated teaching. Online learning or online education is starting to become an essential part of our lives.

Especially after the pandemic, it can be mentioned that ICT opens up a new horizon of opportunities for the schools. Furthermore, the students will have more options available to gather knowledge from. As compared to previous methods of teaching and learning, studying and gathering knowledge are not only restricted to the classrooms anymore. With the help of the ICT tools, students can continue the process of learning and gathering knowledge as per his wish. This will ensure that the learning process is a lot more fluid.

Curriculum materials, which are a common part of classroom education, can also be benefited from ICT inclusion. Along with that, the students that are displaying a comparatively slower rate of learning and growth can also be targeted with this process. As stated by Zimic and Gadzo (2017), advanced technologies can be used in an innovative way so that more innovative approaches can be created and utilized. However, it can be stated on a contradictory note that the students from the backward class of economy may not get the entire ICT benefits. It is important for the schools and educational institutions to look for strategies that can mitigate these scenarios. Otherwise, there are chances of a digital divide, restricting students from getting the full advantage.

More knowledge is always beneficial for the student base. As per the views of Popkova (2019), it is absolutely essential to gain the ability for effective usage of the information. The recent times can be stated as a platform for pervasive use of ICT so that more effective outputs can be produced. It is important to mention that the implementation of ICT is not restricted to the educational sector only. It impacts all the other segments of society as well. This is why digital technologies should be considered as an integral part of the overall national curriculum as it is already a trend among various economies.

With the implementation of the ICT in the educational scenarios, there are often questions with the acceptability of the entire process. However, it can be mentioned that students or younger adults are often attracted towards the technological advancements. These characteristics should be emphasized so that collaboration can be encouraged. This will also ensure the increase in the rate of subject learning. From the perspective of the teacher, there are also multiple benefits associated.

Incorporation of ICT in the overall teaching process also helps the teachers to learn and grow in a technological environment. A teacher who is well equipped with digital knowledge can efficiently interact with the students. Furthermore, professional development and management of education in classroom scenarios are also improved. From the collective feedback, student evaluation is a lot easier for the teachers.

As the classroom is frequently going through changes, there are observable transformations in the overall communication process as well. Furthermore, the process of communication is now changing towards a two way communication compared to the previous one way communication type. The usage of ICT is essential in this regard as both the teachers and the students are now part of the discussion process. As stated by Brkljačić *et al.* (2019), research data gathered from multiple student groups clearly indicates that the implementation of IT can increase both the level of engagement and the virtual happiness levels of the student base. As the rate of interaction and student engagement increases, the teachers should also be prepared to take advantage of these scenarios.

Transforming the learning process towards a more student centric approach can be stated as beneficial in this segment. From the perspective of the students, it can be stated that it will also increase their motivational levels. As per the views of Wong and Yang (2017), implementation of ICT towards the learning methods can create instant feedback. Emphasizing these feedbacks

## ROLE OF ICT IN TEACHING AND LEARNING PROCESS

can be beneficial to provide improvements towards the entire scenario of classroom education or virtual learning process.

### **Research methodology**

To understand the benefits of the ICT implementation in the teaching and learning process, a secondary quantitative research method will be used. Secondary research method is something that involves the usage and evaluation of existing data. By a thorough summarization of the overall existing data, the overall research effectiveness can be increased. Newman and Gough (2020) mentioned that secondary research can be used as a tool to understand the existing scenario related to a specific research topic. For this research purpose, all the available existing data will be used. These existing sources of data include data available on the internet and reliable sources such as journals, research papers or newspaper articles.

In this study, to understand ICT education and its implications, various statistical data gathered on the topic will be analyzed. The UK schools segment and the ICT implementations in the schools will also be evaluated to get a better understanding. Furthermore, the scenario of the Middlesex University is also selected here. The students of the university created an app that contributes towards various web services, resulting in a lot of benefits for the university scenarios. The university app will be considered as an ICT tool and evaluation will be based on the implementations of the app.

### **Analysis**

As a part of enhancing the overall educational segment, ICT can fill the technological gap between the teaching and learning process. There are significant gaps in the usage of technology in education, as technology is mostly being implemented towards supporting known practices rather than transforming them. Lai and Bower (2019) mentioned that an evaluation of technology in the modern education system displays that there are plenty of segments where technology can be used to establish more efficient teaching and learning processes.

The usage of ICT in university scenarios can be observed from the case study of the Middlesex University. The university app, MDXapp, is something that the students can use to efficiently connect with various university work situations (Mdx.ac.UK, 2018). Since the launch of the app, there has been more than 15000 downloads, which ensures that it is well accepted among the students. According to the statement of Heiman *et al.* (2017), access towards the ICT tools can provide a lot of help towards eliminating the problems faced by the students caused by institutional complexities. Furthermore, the mentioned app also has various inbuilt features such as providing guiding assistance.

As a part of everyday operations related to the university scenario, information collection is a must. With the help of the app as an ICT tool, students now can efficiently gather or collect information from resources provided by universities, such as libraries or modules. The usage of ICT tools is also observable under other segments of universities as well. In order to make the overall job easier for the university staff, there are collaborative business practices as well. As stated by Mat *et al.* (2018), inclusion of ICT tools towards the higher educational scenarios will be beneficial for the segment. Apps such as drop box and Skype are being used towards the purpose of making the staff work more efficiently.

On a contradictory note, it can be stated that implementation of ICT tools can create further problems towards cyber security. As ICT tools are mostly incorporated with usage of the internet, it is essential to ensure protection against cyber attacks such as hacking attempts. Before

the implementation of any new strategies, any vulnerability present in the segment should be recognized and revised.

### **Conclusion**

The usage of Information and technology should be considered as an integral portion of today's educational segment. With the rise in technology and the growth of the internet, various technological tools are being implemented towards the learning process. It can be mentioned that ICT tools can be used as a viable tool towards providing effective education for the students. ICT also ensures that the interaction and feedback process increases, so that more student centric approaches can be incorporated into the process of teaching and learning. Furthermore, the rate of digital literacy can also be improved with the integration of ICT tools into the classroom segment.

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## ROLE OF ICT IN TEACHING AND LEARNING PROCESS

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