ADAPTING ICT FOR TEACHING AND LEARNING PROCESS

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Abstract:

Technological advances in the world have revolutionized our society but schools are yet to fully incorporate information and communication technology (ICT) based teaching and learning activities for our students who are the future of the nation. Adapting with the current digital era has become the necessity of the hour. It is essential to understand the significant contribution ICT based instructions in the classroom can make a huge impact for the progress of the nation. But, before we understand the need of ICT based instructions in the classroom it is important to understand the challenges that a teacher has to face for the implementation of ICT based instructions in the classroom. Also, it would be highly beneficial if the pre-service teacher education programme incorporates and encourages the prospective teachers to use ICT tools for the teaching and learning process. From the literature review some of the key challenges like lack of knowledge about ICT tools, resistance to change and lack of teachers' competency has been identified. Not only challenges but also some of the benefits of using ICT tools in the teaching learning process have been identified such as enhanced job performance, sustaining the interest of the learners, motivating learners to use ICT and developing a positive attitude towards using ICT.

Keywords: *Information and Communication Technology (ICT), Pre-Service Teacher Education Programme, Challenges and Benefits of using ICT, Teaching and Learning Process.*

Introduction

The aim of teaching is the overall development of the learners. In order to achieve this aim the learners must be given opportunities to learn and apply the required skills of the 21st century. As we are aware that history is divided into ages for our easy remembrance and understanding like stone-age, copper-age, iron-age and so on and so forth. Given an opportunity or asked for your suggestion to name the current time it is quite possible that the answer would come as digital-age or ICT era. The important skills to be achieved for a learner of this 21st century include knowledge of using ICT. ICT has become an interim part of our daily lives. Keeping in mind the worldwide COVID-19 pandemic situation knowledge of the use of ICT in teaching has become inevitable. The present paper discusses the role and use of ICT in the 21st Century in the teaching and learning process.

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In this digital age adapting with the 21st century skills it is important to provide ICT based opportunities to the students in the classroom. But, in order to provide ICT based learning opportunities teachers must understand the challenges that come across. The main aim of this paper is to understand the challenges for using ICT tools in the classrooms.

Need For Using ICT in Teaching and Learning Process

The scenario of the classroom is changing. It is a known fact that there exists a technological gap between the society and the instructional practices undertaken in the classrooms. Looking at the current scenario the technology has revolutionized our society but on the other hand our schools are yet to incorporate ICT based teaching and learning activities for our students who are the nation builders. The teaching and learning process is still teacher centric in most of the cases but it is changing slowly towards student centric teaching and learning process. In order to be at par with the world the shift towards student centric teaching and learning process needs to be increased. Use of ICT based instructions in the teaching and learning process can be a boon in achieving the aim. Why do we use ICT in teacher Education? The classroom communications are changing from one way to two way communications. It is seen that not only the teachers but the students participate in classroom discussion. The teaching and learning process are moving toward a more child centric approach. Thus, the teacher should prepare to cope up with different technology for using them in the classroom for making teaching learning interesting. ICT enabled technology becomes the appropriate tool for the effective implementation of certain student centric methodologies such as project-based learning that puts the students in the role of active researchers. With the use of ICT it has provided avenues for presenting the ideas in a more effective and relevant way. It also works as an effective tool for acquiring the information. Thus the students are encouraged to look for information from multiple sources and now they are more informed than before. ICT based teaching and learning process is necessary in the teacher education so that the prospective teachers will be familiarized with it beforehand.

Challenges For Using ICT in Teaching and Learning

Venkatesh and Davis (2000) believed that when teachers are presented with a new technology one of the key factors that might influence their decision is external variables i.e. how and when they will use it. It also presents them with the challenges that come from outside their sphere of control when integrating a new technology in their teaching and learning process.

From the literature review, some of the key challenges have been identified regarding teachers' use of ICT tools in the teaching and learning process that has been represented in the following figure 1.
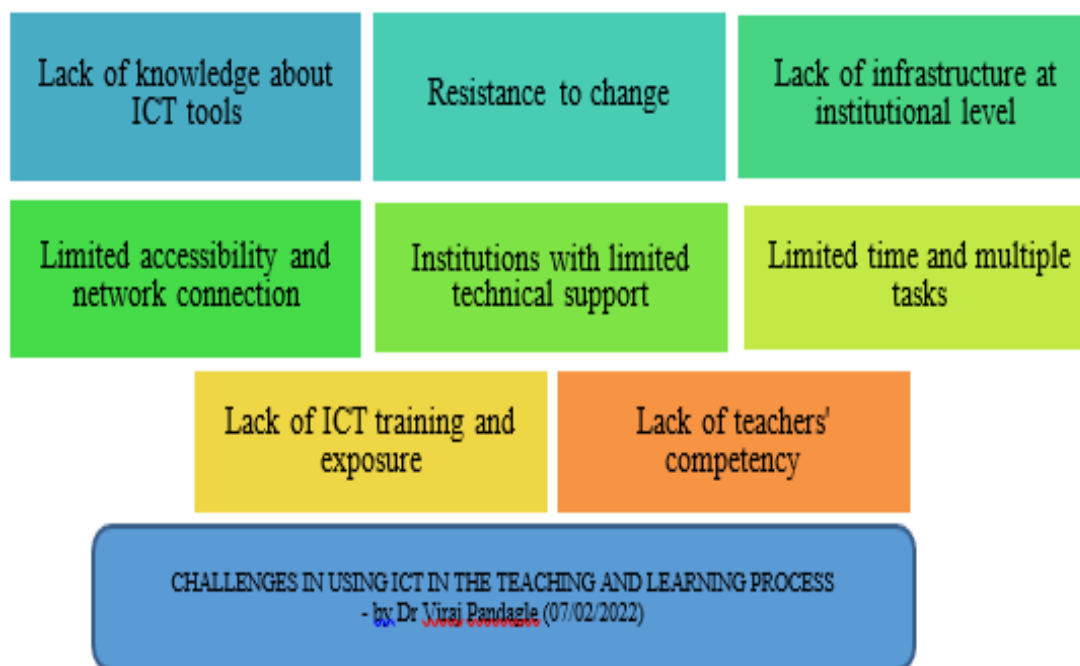
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Figure 1: Challenges in Using ICT in the Teaching And Learning Process

Significance of ICT in The Teaching and Learning

According to UNESCO (2002) ICT is a scientific, technological and engineering discipline and it is also considered as a management technique that is used in handling information, its application and association with social, economic and cultural aspects. ICT stands for Information and Communication Technologies. ICT has become an important component of our lives for the last few decades affecting our individual and social life. The stakeholders in the field do use ICT to a certain boundary. Using ICT will make the teaching and learning process easy and interesting. In the early 19080s when the computers began to be used in schools several scholars suggested that ICT will be an important part of education for the next generation (Bransford, Brown, and Cocking, 2000; Grimus, 2000; Yelland, 2001). On a similar note Zhang and Aikman (2007) said that today information and communications technology is an important part of most organizations. Using updated technology offers several methods for enhancing classroom teaching and learning (Ghavifekr et al., 2014; Lefebvre, Deaudelin and Loiselle, 2006). According to Venkatesh and Davis (2000) when the teachers adopt using ICT in the teaching and learning process it would present them with various benefits and also enhance their job performance and satisfaction.

The following figure 2 represents some of the benefits that have been identified in the literature review regarding teachers' use of ICT tools in the teaching and learning process.
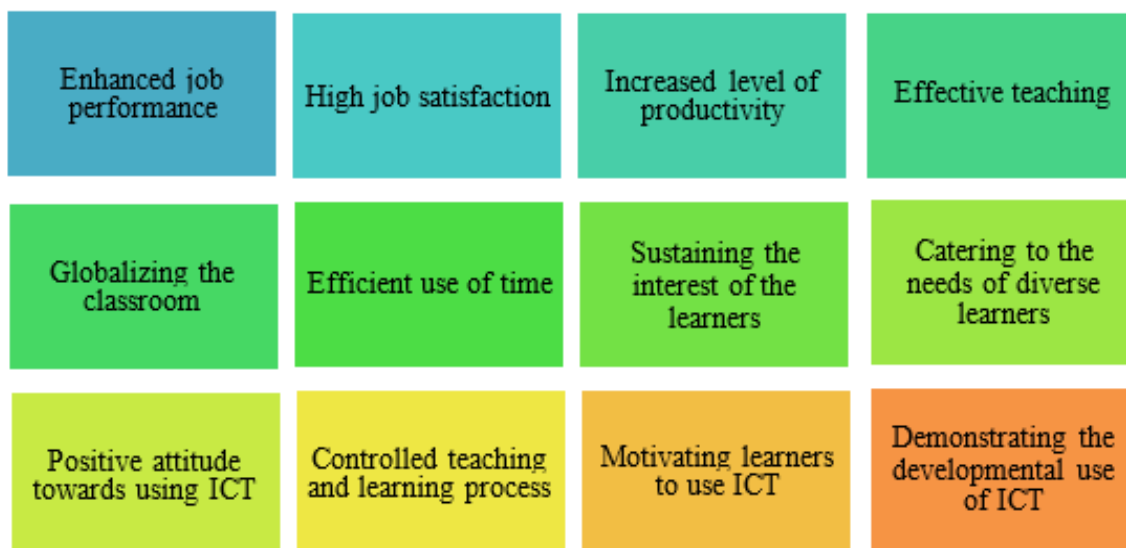
Figure 2: Benefits of Using ICT in the Teaching And Learning Process

According to Dawes (2001) new technologies have the potential to upkeep education across the curriculum and also to deliver opportunities for efficient student and teacher communication in those ways that was not possible before. ICT in education has the potential to transform the teaching and learning process. However the potential may not easily be recognised as Dawes (2001) underlined when he stated, "problems arise when teachers are expected to implement changes in what may well be adverse circumstances" (p. 61).

Positive Approach towards ICT in Teaching

Every move towards adopting ICT enabled technologies shall help in bringing the world closer and preparing the students for the real world. It is expected to impact the teaching and learning process in a positive manner. The impact is estimated to be long-lasting and beneficial for the overall development of the student. Teachers must be aware about the benefits of ICT based classroom instructions and then only it will trigger them to become digitally literate. Along with this teachers must also make themselves aware about how to integrate ICT in the teaching and learning process.

Some schools have already started to encourage their teachers to use ICT tools for enhancing the classroom experiences of their students. ICT tools help in communicating, creating, disseminating, storing and managing information in a systematic manner. In some contexts ICT has become an integral aspect for the teaching and learning events replacing the chalkboard method with interactive digital smart boards. Students are also being encouraged to use their own smartphones or other smart devices for the learning activities during class time. The flipped classroom model has become more effective and interactive when students are encouraged and allowed to use computers.

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It can lead to developing higher order thinking skills among the students when teachers use ICT in the classroom but for that the teachers need to be digitally literate and trained to use ICT. Such an approach can also provide individualized ways for the students to express themselves creatively. It shall also prepare the students to equip themselves with the ongoing changes in the society and the prospective workplace. Teachers with ICT skills become confident and competent enough to provide effective teaching. It would be best if the knowledge of ICT is emphasized during the pre-service teacher education training programme. This is because despite providing the ICT tools by the schools it has not fully been adopted in the teaching and learning process in most schools in the country. Only few teachers are using it in the teaching and learning process and the reason could be that the challenges outweigh its benefits (Bingimlas, 2009). Therefore a deliberate effort is needed to be taken at the teacher education programme itself to encourage the teachers more for using ICT tools in the teaching and learning process. The learners need to be equipped with the modern technologies and this is thoroughly possible only if the teachers are well-versed with its knowledge. When students are provided with such knowledge they are also prepared to be employable in the changing world with an ICT enabled positive attitude.

Some common educational applications of ICT include the policy of filling the gaps of digital divide by providing low cost laptop or tablets to the learners, promoting the use of interactive smart boards also known as white boards, encouraging the use of kindles or e-books, employing the flipped classrooms methods of teaching using ICT, breaking the barriers for minority language learner groups and catering to the needs of diverse learners using ICT. But for the beginning ICT tools may refer to the common technology-based tools that shall be used in the schools such as computer, laptop, LCD, digital photocopy machine, digital audio and video devices, digital camera and scanner, DVD player and multimedia projector. Teachers have now started to use ICT based technology in the classroom such as laptops, LCD projector, desktop, EDUCOM, and smart boards.

Conclusion

The use of information and communication technology should be promoted at the teacher education programme itself so that prospective teachers can incorporate it when they join a school as teachers and can create a brighter future for students. The attitudes of the teachers play an important role in effectively implementing innovative teaching and learning strategies in the classrooms. It is hoped that the present paper shall contribute at least like *a drop of water in the sea* and helps in understanding the role of ICT in teaching and learning process. It is also expected to assist those responsible for integrating new technologies into the teaching and learning process. Teachers can update their knowledge and skills by using the latest digital tools and resources available that can enhance the students' learning experiences. Moreover, when a prospective teacher is equipped with the knowledge of ICT tools during their pre-service training it can be expected that the knowledge of ICT tools shall definitely be used in the teaching and learning process. With the use of ICT tools and techniques in the classroom teachers can expect to achieve successful teaching.

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