THE SIGNIFICANCE OF ICT IN EDUCATION

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Abstract—The initiation of Information and communication technology has made tremendous changes in the present day world. There is no area that has not been influenced by these digital phenomena. The advent of ICT in education helped to improve the quality of education where teaching and learning eventually became an engaging active process related to real life. The application of information and communication technologies in education has been divided into two main categories: ICTs for Education and ICTs in Education. ICTs for education identify the development of information and communications technology especially for teaching-learning purposes while the ICTs in education includes the adoption of basic elements of information and communication technologies in the teaching-learning process. The challenge is to effectively harness these technologies in a way that serves the interests of learners and the larger teaching/learning community. ICTs can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development as well as improve education management, governance and administration provided the right mix of policies, technologies and capacities are in place . The present paper enables an over view of the use of ICTs in the field of education. Some salient features of ICT Education and their advantages and disadvantages, Pros and Cons are briefly presented in this Paper.

Index Terms— ICT, Teaching-Learning Purpose, Professional Development

I. INTRODUCTION

Information and Communication Technologies (ICT) have recently gained a groundswell of interest, becoming a significant research area for many scholars around the globe. One of the reasons for this surge is that nature of ICT has greatly changed the face of education [1-5]. For most European countries, the use of ICT, in education and training, has become a priority during the last decade; however, very few have achieved progress. Indeed, only a small percentage of schools, in a few countries, effectively used ICT to support and change the teaching and learning process in diverse subject areas. Others are still in the early phases of adopting ICT.

Nowadays, technology has changed the world, be it the technology in education or technology in any sector of the economy. It surely has changed the global platform. You can stay connected to each other, whether you are near or far away. Technology has enhanced the social media impacts on our lives. It looks so hard to imagine life without technology, there is no charm in life without technology, so by summing up it becomes the essential part of our life and need of the world as well. These days technology is rising at a rapid pace all around the world, doesn't matter you are in the same area or not you can connect with each other all over the world. Nowadays people hardly imagine that they could spend a whole   day

without technology; Use of technology has become in-habitual in people which have shown the positive impact on our lives.

It's been universally reported that more than 30 billion devices are connected to the internet in 2016. Usage of technology is increasing at an alarming pace. Its effects we can see on education sector as well, nowadays educational institution shows us the impact of positivity in and it is playing a vital role in learning new things [6-7].

The application of information and communication technologies in education has been divided into two main categories: ICTs for Education and ICTs in Education. ICTs for education identify the development of information and communications technology especially for teaching-learning purposes while the ICTs in education includes the adoption of basic elements of information and communication technologies in the teaching-learning process. ICT provides great flexibility in education to ensure that learners are able to access knowledge anytime and from anywhere [8]. It also affects the way knowledge is imparted and how students learn. Research undertaken worldwide has confirmed that ICT can help to improve student learning by providing better instructional techniques.

II. ICT ENHANCING THE QUALITY OF EDUCATION

Many pupils consider ICT tools very helpful for completing assignments. Also, teachers are attuned to the fact that ICT enables students with special needs or difficulties to achieve and grow as well. ICT may also help to reduce social disparities between pupils, since they work in teams in order to achieve a given task or common goal. Additionally, students often assume more responsibilities when they use ICT, such as organizing their work through digital portfolios or projects. The study also showed that ICT has had a significant impact on teachers and the teaching processes.

ICT facilitates the dissemination of knowledge based on the contemporary curricula [9]. As a result, incorporating ICT in teaching helps both teachers and students since it has the potential to impart quality education if it is used effectively. There are some advantages and disadvantages in ICT Education policies [10].

ICT has played roles from simple to vital especially in developed countries higher education. Learning and teaching process become more effective by using ICT. The use of ICT has developed in different ways to meet the needs of learners in different curricular areas. The use of ICT can:

* help learners be creative;

* be a useful aid to problem solving;

* provide ready access to a world of knowledge and research; and

* improve the quality of presentation."

"The educational effectiveness of ICTs depends on how they are used and for what purpose. And like any other educational tool or mode of educational delivery, ICTs do not work for everyone, everywhere in the same way." The useful use of ICT in educational and pedagogical fields changes from person to person and from place to place. It bases on how they are practiced and for which reason. Undoubtedly, some educators use technology in particular computer and the Internet more efficiently than others. They know very well how they use it and when or where and for which occasion. Hence, teaching students the effective use of ICT especially in enhancing access and raising quality is another reason to promote students performance by using ICT and gaining more.

III. ADVANTAGES OF ICT TOOLS FOR EDUCATION

✓ Through ICT, images can easily be used in teaching and improving the retentive memory of students.
✓ Through ICT, teachers can easily explain complex instructions and ensure students' comprehension.
✓ Through ICT, teachers are able to create interactive classes and make the lessons more enjoyable, which could improve student attendance and concentration.
✓ .ICT offers a wealth of possibilities to support teaching and learning.
✓ Effective use also depends upon the choices that a teacher makes about how to Use ICT as part of their teaching.
✓ Technology changes rapidly and each change opens up new possibilities for teachers and learners.
✓ It takes time to develop the skills necessary to use ICT effectively in teaching.

IV. DISADVANTAGES OF ICT TOOLS FOR EDUCATION

Obviously, there are several kinds of drawbacks of ICT in the classroom or outside classroom. The costs of equipments are so expensive that prevent more schools to purchase. Sometimes, students engage with ICT tools for other purposes. Also, ICT is not safe usually for saving data and information because the potential errors may occur in the Windows program or other software programs and hacking by others.

The following disadvantages give a list of objectives that staff and facilitators may be required to deal with should problems occur throughout using the ICT equipment.

- ❖ € Cost
- ❖ € Distractions
- ❖ € Reliability
- ❖ € Damage
- ❖ € Safety
- ❖ € Hacking"

And also some more points have to seriously be considered:

- ❖ Setting up the devices can be very troublesome.
- ❖ Too expensive to afford.
- ❖ Hard for teachers to use with a lack of experience using ICT tools.
- ❖ There is no single or simple solution to the effective use of ICT in teaching and Learning.

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❖ Teachers need support to develop both new technical and new pedagogical skills.

❖ The curriculum and its assessment need flexibility to accommodate technological change.

Generally, three objectives are distinguished for the use of ICT in education: (i) the use of ICT as object of study; refers to learning about ICT, which enables students to use ICT in their daily life. (ii) The use of ICT as aspect of discipline or profession; refers to the development of ICT skills for professional or vocational purposes. (iii) The use of ICT as medium for teaching and learning; focuses on the use of ICT for the enhancement of the teaching and learning process. It is a fact that teachers are at the centre of curriculum change and they control the teaching and learning [11-12].

V. INTERESTING PROS AND CONS IN THE CASE OF ICT EDUCATION ARE AS FOLLOWS:

A. The Pros

1. Using technology in the classroom allows you to experiment more in pedagogy.
2. There are countless resources for enhancing education and making learning more fun and effective.
3. Technology can automate a lot of your tedious tasks.
4. Your class has instant access to information that can supplement their learning experience.
5. Students can learn life skills through technology.
6. We live in a digital world.

B. The Cons

1. Technology can be a distraction.
2. Possible disconnect of social interaction.
3. Technology can foster more cheating in class and on assignments.
4. Students do not have equal access to technological resources.
5. The quality of research and sources they find The quality of research and sources they find may not be top-notch.
6. Lesson planning can become more labor intensive with technology.

Several latest educational technology trends can change the way of thinking in the future of education and can rule the world of education in 2016.

1. Artificial Intelligence
2. Virtual Reality
3. The (M-Learning)
4. Tablet and Laptops
5. Social Media at Institutions
6. Learning through SmartBoard

7. Cloud Based Technology in Education
8. MOOCs (Massive Open Online Course
9. Use of Videos in Education

VI. BENEFITS OF USING ICT IN EDUCATION

The merits of ICT in education have been extolled in the literature. The use of ICT has been found to:

1. Assist students in accessing digital information efficiently and effectively

Support student-centered and self-directed learning

2. Produce a creative learning environment
3. Promote collaborative learning in a distance-learning environment
4. Offer more opportunities to develop critical (higher-order) thinking skills
5. Improve teaching and learning quality
6. Support teaching by facilitating access to course content [13-15]

VII. BARRIERS AND SOLUTIONS TO EFFECTIVE TEACHING

Barriers to effective technology integration from a teacher perspective include:

❖ Low teacher expectations and a lack of clear goals for ICT use in Higher education

❖ A lack of teacher collaboration and pedagogical support, as well as a lack of experience Among cooperating teachers.

❖ Insufficient time to master new software or integrate ICT during a class period.

❖ Insufficient skills for managing teaching materials.

❖ Low software competence and habitual ways of conceptualizing what and how students Should learn.

   ❖ Limited knowledge and experience of ICT in teaching contexts.

   ❖ A lack of specific knowledge about technology and how to combine it with the existing Pedagogical content knowledge to support student learning.

   ❖ Excessive focus on teaching technical or operational skills rather than course content

   ❖ A lack of recognition and encouragement of the timely and effective use of ICT.

   ❖ A lack of in-service training on the use of ICT.

   ❖ Technical problems in the classroom.

   ❖ A lack of motivation, and technical and financial support.

   ❖ Lack of specific and definite ideas about how integrating technology into instruction will

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Improve student learning.

VIII. RECOMMENDATIONS

The research to date on ICT on education has provided us with important findings that are relevant to policymakers and to the Millennium Development Goals. The most important may be summarized as follows:

- ✓ The mere availability or use of computer does not have an impact on student learning. However, results are clear that *certain* uses of computers in specific school/college subjects have a positive impact on student learning in those subjects.
- ✓ Specifically, computers have a positive impact on student attitudes and the learning of new kinds of skills, when ICT is used in conjunction with student-centered pedagogy.
- ✓ Computers may benefit girls and boys equally and can be effectively used by students with special needs.
- ✓ Teacher training is important. Through it, teachers can learn ICT skills and new pedagogical skills and these often result in new classroom practices.
- ✓ ICT can also be used to launch innovation in schools and provide communities with new educational services.

IX. CONCLUSION

ICT now has the potential to be a significant content component of each of the core discipline areas language arts, mathematics, science, and social science, as well as other disciplines taught at the precollege and college levels. This fact creates a major challenge for our pre service and in service teacher education programs and our methods of developing precollege curriculum standards. ICT is a dynamic field, growing rapidly in breadth and depth. Basic hardware capabilities of ICT, such as computer speed, computer storage capacity, telecommunications bandwidth, and the installed base are all growing rapidly. The application of educational technology enhances skills and cognitive characteristics.

Teachers have been using new technologies in the classroom. However, the development and application of new technologies grows as a measure that is the question of whether teachers are trained to keep up with them. Here we have two problems. Are the teachers having the ability to use educational technology and whether the school is sufficiently equipped with all modern technical means? Numerous studies were carried out, some are still ongoing, but we have to find the right strategies to apply educational technology in teaching.

"The educational effectiveness of ICTs depends on how they are used and for what purpose. And like any other educational tool or mode of educational delivery, ICTs do not work for everyone, everywhere in the same way." The useful use of ICT in educational and pedagogical fields changes from person to person and from place to place. It bases on how they are practiced and for which reason. Undoubtedly, some educators use technology in particular computer and the Internet more efficiently than others. They know very well how they use it and when or where and for which occasion. Hence, teaching students the effective use of ICT especially in enhancing access and raising quality is another reason to promote students performance by using ICT and gaining more.

A review of the existing literature reveals that ICT integration is meditational and entails an evolving process, not a final product. To achieve successful integration of technology requires an effort from three sides: teachers, students, and school administrators.

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