



# **Information and Communication Technology as a Tool to Improve Teaching and Learning in Secondary Schools, and the Role of the Counsellor to ensure that it work**

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## **ABSTRACT**

This work looked at Information and Communication Technology as a tool to improve Teaching and learning in Secondary Schools, as well as the role of the Counsellor to ensure that it works. Some common educational applications of ICT tools in the classroom were also discussed; these includes: interactive digital whiteboards, using students' own smartphones for learning during class time, computers, tablets and the flipped classroom model where students watch lectures at home on the computer and use classroom time for more interactive exercises. The Behaviorism however witnessed the Teaching Machine period by Skinner as well as the Programmed Instruction period and the Systems Approach to Instruction. Today Instructional Computer software however is a reflection of the Skinner's Teaching Machine, this therefore shows that today's educational set-up reflects the roots of Behaviorism. The paper also looked at some of the benefits of using ICT tools to students and teachers which includes: collaboration, students enjoy learning, it makes teaching easy, it save time among others. For the use of ICT tools to be effective in the classroom, guidance counsellors have to encourage teachers, principals, students and stake holders of education to ensure that the use of ICT tools in teaching and learning works.

**Keywords:** Information and Communication Technology, Teaching and Learning, Students, Cousellor

## **INTRODUCTION**

Information and communication technology tools have changed the way people work, live and learn around the world. ICT is viewed as a "major tool for building knowledge societies" (UNESCO 2003). As we go through the 21<sup>st</sup> century, technology in the classroom is becoming more and more predominant. Tablets are replacing our textbooks, and we can research just about anything that we want to on our smartphones (Cox, 2018). UNESCO (2018) posited that Schools use diverse set of ICT tools to communicate, create, disseminate, store, and manage information. They added that ICT can provide diverse options for taking in information, processing it, making sense of ideas for Students with different styles of learning. In another development, the European Commission is promoting the use of ICT tools in learning processes through its eLearning Action Plan, which aims at improving the quality of learning by facilitating access to resources, services and remote exchange and collaboration (Commission of the European Communities). In addition, ICT has become integral to the teaching-learning interaction through such approaches as replacing chalkboards with interactive digital whiteboards, using students' own smartphones or other devices for learning during class time, and the "flipped classroom" model where students watch lectures at home on the computer and use classroom time for more interactive exercises. (Commission of the European Communities 2001)

Sangra A & Gonzalez-Sunmamed M (2016) in a study on the role of information and communication technologies in improving teaching and learning processes in primary and secondary schools found that there is a widespread view that ICT in teaching favours several teaching and learning processes. In

particular, according to them, it shows that the contributions of ICT to the improvement of teaching and learning processes is higher in the schools that have integrated ICT as an innovation factor. For this to work, school must adapt the use of ICT tools in teaching and learning. According to a study by IT Trade Association CompTLA in Cox (2018), found that around 75 percent of educators think that technology has a positive impact in the education process; and that Educators also recognize the importance of developing these technological skills in students so they will be prepared to enter the workforce once they complete school. This widespread adoption of technology has completely changed how teachers teach and students learn. Teachers are learning how to teach with emerging technologies (tablets, iPads, Smart Boards, digital cameras, computers), while students are using advanced technology to shape how they learn. Also, in another CompTIA's study in Cox (2018) showed that 9 out of 10 students indicated that using technology in the classroom would help prepare them for the digital future. These 21<sup>st</sup>-century skills are essential in order to be successful in this age. Jobs that may not have had a digital component in the past, may have one now.

Some common educational applications of ICT tools according to United nations Educational, scientific and cultural organization (2018) include the following:

- **One laptop per child:** Less expensive laptops have been designed for use in school on a 1:1 basis with features like lower power consumption, a low cost operating system, and special re-programming and mesh network functions
- **Tablets:** Tablets are small personal computers with a touch screen, allowing input without a keyboard or mouse. Inexpensive learning software ("apps") can be downloaded onto tablets, making them a flexible tool for learning.
- **Interactive White Boards:** Interactive white boards allow projected computer images to be exhibited, manipulated, dragged, clicked and copied. Simultaneously however, handwritten notes can be taken on the board and saved for later use. Interactive white boards are associated with whole-class instruction. Student's engagement is normally better when ICT is available for them to use.
- **E-readers:** E-readers are electronic devices that can hold hundreds of books or more in digital form, and they are more and more utilized in the delivery of reading material. Additionally, many classic book titles are available for free in e-book form for students to have access to any time.
- **Flipped Classrooms:** The flipped classroom model, involving lecture and practice at home by students via computer-guided instruction and interactive learning activities in class can however allow for an expanded curriculum.

### **Theoretical Framework**

The Behaviorism witnessed the Teaching Machine period by Skinner as well as the Programmed Instruction period and the Systems Approach to Instruction. The teaching machine however was a box that was kept on student desks that each student could use to record 5 answers to certain prompted questions. Skinner (1958) however, provided conditions order on the teaching machines and described them as: "devices which arrange optimal conditions for self-instruction" (p. 971). According to him, "Sidney L. Pressey designed several machines for the automatic testing of intelligence and information, which will encourage the student to take an active role in the instructional process" (p. 973). He pointed out that "In using the device the student refers to a numbered item in a multiple-choice test. He presses the button corresponding to his first choice of answer, and if he is right, the device moves on to the next item; if he is wrong, the error is tallied, and he must go on to make choices until he is right" (Skinner, p. 971).

Today Instructional Computer software is a reflection of the Skinner's Teaching Machine, this therefore shows that today's educational set-up reflects the roots of Behaviorism. The ideas behind the Teaching Machine for instance and modern-day computer game software are mostly the same to some extent. Skinner's Teaching Machine possibly fits today educational technologies, since the machines were a version of what today's educational software and computers can carry out.

### **Benefits of Information and Communication Technology (ICT) tools for Students and Teachers in teaching and learning in the classroom**

The impact that technology has had on today's schools has been quite significant, some of these benefits for students and teachers are discussed below

#### **Benefits of Technology tools to Students**

Some of the ways Educational Technology can benefit students in learning by Lynch (2017) are:

1. **Increased student's engagement.** When students get to use technology in the classroom, they are automatically more engaged; adding technology to existing lesson plans can boost student's engagement without requiring teachers to do more work.
2. **Improve digital literacy.** Knowing how to use technology and the internet will be needed in most of the jobs that students might have in the future. By incorporating Educational Technology into the classroom, teachers can help students improve their digital literacy, this is because Digital literacy is a fundamental skill for students in the 21<sup>st</sup> century
3. **Bring the classroom home.** With Educational Technology, learning doesn't have to stop when students go home. Students continue learning at home using the internet.
4. **Get creative.** With Educational Technology tools, students can do more creative work. They can create online presentations and digital art to showcase what they have learned.
5. **Provide acceleration.** Students who are bored with the material the rest of the class is working on can complete additional projects and accelerate their learning using Educational Technology
6. Technology can help English Language Learners feel included in the classroom. The internet makes translating materials easier, it allows beginning English learners to take part in activities that would otherwise be hard

#### **Cox (2018) highlighted more benefits of Technology in the Classroom for students as follows:**

7. For young students, it's much more stimulating to learn a lesson on a tablet or smartphone than with a traditional textbook. Technology transforms students from passive recipients to active learners
8. **Technology Makes Learning more fun.** Students prefer technology for the reason that they think it makes learning more interesting and fun. They especially like laptops and tablets. Subjects that students deem challenging or uninteresting can become more interesting with virtual lessons through a video and when using a tablet.
9. **Students enjoy learning.** According to Norman (2016), Students are used to Facebook, Instagram and other websites from early age. The internet may distract them from learning, but teachers can also use their inclination to spend time online for a good purpose. Use touch-screen technology and online presentations to make the classes more interactive. Teachers can also rely on technology when they want students to take part in discussions, for example, setting up a private Facebook group for his/her class and inspire constructive conversations, this can however make learning enjoyable.
10. **Publish and present student work.** Instead of creating a presentation that no one outside the classroom will see, students can use the internet to publish their work for the entire world to see.

#### **Benefits of Technology tools to Teachers**

1. According to Dexway (2018), technology is the best complementary tool for teachers in the classroom. Traditional education according to them is not so efficient anymore and teachers need to motivate their students more than ever when presenting any material in the classroom. Books are taking a back seat and technology means that classes can be much richer in content and more participative than before.
2. **Technology makes teaching easy.** According to Norman (2016), Teachers can use projectors and computer presentations to deliver any type of lesson or instruction and improve the level of comprehension within the class. Sometimes, tough concepts can be made clearer for students with technology. Thanks to audio-visual presentations, for students will understand exactly how the knowledge is applied in practice; Technology has that power.
3. **Create a unique experience for the teacher and the students.** The flipped classroom method in English courses with technology to complement it is turning English classrooms into an environment where sharing, debating, creating and forming opinions is nurtured (Dexway (2018).

**4. Technology helps Teachers track students' progress.** With technology, Norman (2016) is of the view posited that teachers are no longer limited to a plain-old diary and notes about every student. Today, teachers can rely on platforms and tools that enable them to keep track of the individual achievements of students. ( MyStudentsProgress and theTeacherCloud Progress Tracker) are great online tools that enable teachers to do that. However, different schools can develop personalized software that would serve them better.

Lynch M (2017), outline the benefit Educational Technology to teachers as follows:

**5. Keep up with classroom management.** There are lots of Educational Technology tools designed to help teachers with classroom management. Teachers can however keep track of student behaviors and keep parents informed using technology tools.

**6. Teachers save time.** Before the advent of Educational Technology, teachers used to spent long hours creating lesson plans and grading papers, but, with technology and the internet, teachers can find lesson plans and free materials online.

**7. Find free materials.** With technology, Teachers don't have to pay for workbooks anymore. There are many free materials online that can help busy teachers to put together lesson plans.

**8. Turn review into a game.** There are a lot of apps available that make review activities into fun games for students. This can make boring review fun and exciting.

**9. Personalize learning for every student.** Educational Technology helps teachers differentiate learning for students. Each Student can work on something different on their individual devices, with each focusing on their own areas of weakness.

10. Bring your classroom into the 21<sup>st</sup> century. Teachers are responsible for preparing students for a 21<sup>st</sup> century world, and exposing them to technology is a part of that.

#### **The role of the guidance counsellors in ensuring that the use of technology in the classroom work**

For the use of ICT for teaching and learning to be effective in schools, the guidance counsellors of schools have great roles to play. Some of the roles are however discussed below:

1. First and foremost, guidance counsellors in schools should ensure that principals of schools accept the idea of using ICT tools by teachers for teaching and learning in the classroom

2. Teachers need specific professional training on the use of ICT tools in the classroom in order to increase their ability to use ICT tools for teaching and learning, such as individualized instruction, accessing online resources, and for fostering students interaction and collaboration. Therefore, guidance counsellors should ensure that teachers obtain these skills by encouraging school administrators to send them on training.

3. The guidance counsellors should encourage principals of schools to provide ICT facilities in schools for both teachers and students to use for learning.

4. For the use of ICT tools for teaching and learning to be effective in schools, Guidance counsellors ought to work closely with teachers to encourage them to use it for learning purposes in the classroom

5. Guidance counsellors can motivate and inspire students to use ICT facilities simply for learning purposes only, for its benefits in learning are numerous.

6. Creating awareness on the need to use ICT tools in teaching and learning and its benefits by counsellors among students, teachers, ministry of education and the general public will go a long way in seeing the need for it's use in schools for learning.

7. Counsellors should educate students about the changing world and the need to use ICT tools for learning

#### **CONCLUSION**

With the benefits of technology in teaching and learning, teachers have no reason for neglecting the use of educational technology in the classroom; for it's benefits for both teachers and students described above is a good medium to foster teaching and learning.

## RECOMMENDATIONS

Integrating technology into the classroom has great benefits to both teachers and students. Therefore, educators and head of schools need to keep up with the times in order to best prepare students for this ever-changing world that we live in. Teachers however should learn about each element of technology that they want to incorporate into the classroom for learning purpose.

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