



Exploring the significance of Technology in Education

Shamim Akhter, Ph.D. Scholar, School of Languages, Civilisation and Philosophy, Universiti Utara Malaysia, Malaysia, misschudry96@gmail.com

Luigi Pio Leonardo Cavaliere, Department of Economics, University of Foggia, Via Romolo Caggese, 1, 71121 Foggia FG, Italy, luigi.cavaliere@gmail.com

Dr. Muhammad Umair Chaudhary, Assistant professor (IPFP-Fellow), Department of Mass Communication, Virtual University Lahore, Pakistan, umair.chaudhary@vu.edu.pk

Dr. Abrar Hussain Qureshi, Department of English University of Sahiwal Pakistan, Abrarqureshi74f@gmail.com

Abstract- Undoubtedly, 21st century is the era of technology. Technology has revolutionized every walk of life. It is the greatest blessing of Allah for all humanity. It is the mother of civilizations, arts and sciences. People's living style has been changed due to technology. Unquestionably, technology has rendered its services in making people's lives comfortable. Numerous manual tasks are automated, thanks to technology. Even several complicated tasks and procedures are completed with great ease with the help of modern technology. All credit goes to the application of technology in bringing about positive and better changes in living. The field of education has also been affected by technology. It has made the learning and teaching process easier and interesting both for teachers and students. Computers have revolutionized almost every field of life especially education. With the application of computers in education, teachers are now in a position to deliver their knowledge to the students in the most convenient way. The advent of vast amounts of technology has certainly impacted the classroom from the youngest level to college and beyond. It opens new horizons for students to learn and for teachers to teach. The future of education is almost inconceivable, and the possibilities are boundless.

Key words: Civilization, automated, revolutionized, horizons, application

I. INTRODUCTION

The invention of technology is the gift of 21st century which has affected every field of life. No country can make progress in today world without technology. All developed nations have progressed and are progressing due to the application of technology. The countries which are not equipped with technology are poor in economy. It makes work much easier and less time consuming. The impact of technology is seen in every possible field and Education is also one of them. Technology has made easy the access to education. In past, only a few people could get education and only wealthy people could buy books. People had to travel hard to go to learning centres. But in today world, people have no need to travel as they can read informative books and articles while staying at home through Internet.

The roles of teachers and students are being altered due to technology. In the traditional classroom, the teachers are considered the main source of information and the teaching system revolves around the teachers. Teachers impart knowledge and students are supposed to acquire it passively. But now a days, due to access to technology, the role of teachers has been altered and teachers act as the guide for the students. Students are getting information by using technology. They can read articles and books using internet which they need. Information can be got within seconds just by pressing one or two buttons. There is no need to purchase expensive books about different topics due to the invention of computers.

In the 21st century, technology has made all things easy and effective. It motivates the students to learn actively and it improves the teachers' teaching ability (Colao, 2012). It assists and transforms education in several ways. It not only raises interest among students to learn more but also motivates the teachers to widen their knowledge and enhance their teaching capability. Using technology, teachers can impart fresh and authentic knowledge to learners. With the access to internet and the ubiquity of smart devices that can connect to it, a new age of education is dawning.

Technology is everywhere and is playing its role to upgrade every field of life. Though many people do not like to use technology in education field and they depend on traditional methods of teaching, its advantages are countless for students and teachers. Individual performance and innovative lesson planning can be monitored using technology by education professionals. The learners who learn through technology develop a set of skills which will be advantageous for them in future careers.

The learners use technology for interaction. Learning process can be made easy integrating technology into the classrooms. Technology makes the job of teachers simple and easy. They do not need to go anywhere to read teaching materials for the upgradation of their knowledge and information. Having access to internet, they can enrich their knowledge and teach well to the students. Technology also makes learning process interesting and informative for learners. The student of present age is more equipped with knowledge and well aware of worldwide information as compared to the student of the past due to the invention of technology. Students can interact the students of all over the world through internet. They can share information and knowledge.

Need of Technology for Learners in the Classroom

Today, the learners use mobile phones, tablets and computers at home or outside of the classroom freely. So, they should be allowed to use these tools in classrooms for learning point of view. It helps them in learning and stay engaged during class. They will not get bored as they feel boredom in traditional classroom. Every type of information whether it is about science, arts, business, politics, mathematics etc. is in reach of students. Students understand the complex topics by watching many videos on you tube. Besides the access to information, new technology can actually excite and empower students. Since a number of learners are already familiar with tablets and smartphones, learning through technological lessons will likely become more exciting than daunting.

With the help of technology, teachers can organize creative, informative and innovative lesson plans to draw the attention of the students. It is believed that technology upgrades the knowledge of learners and makes teaching procedure simple for the teachers by eradicating the hurdles boundaries which are met by them in traditional teaching method. Online education, distance learning, and access to up-to-date information are possible.

Professionals rely on technology to bring about innovation in their concerned fields. So, to prepare the students for their future careers, technology will be helpful in classrooms. They feel more ease and familiarity when approaching the start of their career. It can also enhance class interaction by encouraging collaboration of differing learning styles. Majority of learners start using technology from a very early age. When new concepts, ideas or topics are announced through tools, they have already command over them. The confidence level of students is boosted up as they learn many things themselves. Technology empowers the learners and teachers providing authentic and up-to-date knowledge within no time.

Educational Technology

A systematic approach to the processes and resources of teaching, educational technology, or EdTech, utilizes technology to improve the performance of students. It identifies the needs of individuals, adapting technology to classroom instruction and in the tracking of student development. It requires teachers to accurately reveal the needs of students in order to determine the relevant technology to apply to the curriculum and to track the results to determine the effectiveness of the measures. Educational technology is a fairly new field in the education sector, and teachers are ready to start implementing such technologically-driven plans.

The cost of education has significantly reduced, with options like online degrees and by eliminating the need to buy physical textbooks. By accessing scholarly articles, for example, the learners can easily choose to continue their studies from another country or without leaving their homes. Students don't even need to enrol in a full degree program to learn from the best universities in the world. Typically free for students, most academic journals will offer full digital versions of books originally produced in print. Even if you are not currently studying or involved in the education community, various articles, videos, etc., can be downloaded right to your phone, making the learning process both easily accessible as well as mobile.

Because of technology, education is becoming more flexible and accessible. A growing popularity of online degrees and mobile learning can be observed, physical boundaries have been removed, and many executives have embraced technology to supplement the further education of their employees. Various tools are used to enhance the classroom experience and motivate the engagement of students, such as:

Kahoot

Kahoot is a game-based student response system (GSRS) where the classroom is temporarily transformed into a game show where the teacher is the game show host, and the students are the contenders (Wang, 2015). Students or teachers can create an interactive questionnaire in minutes, using a series of multiple-choice questions. Kahoot is the best played in a group setting, as players answer the questions on their individual devices with the results displayed on a shared screen to unify the game or lesson.

Trello

Uebe Mansur, Alves, and Torres (2019) express their opinion that Trello has been an alternative of use in the learning environment, by incorporating a platform that allows collaborative and interactive work, promoting the sharing of knowledge and experiences. This project management tool is a great way for educators to teach students early on how to stay organized and to streamline their assignments. Students can use Trello themselves to create workflow charts, teachers can use it to track student progress, or it can be used by both student and teachers to collaborate on the same project.

Nearpod

Sanmugam, Selvarajoo, Ramayah, and Lee (2019) says that Nearpod is accessible with internet connection. Students can view their learning materials during their lecture using the web browser or the free Nearpod app using their own electronic devices like smartphones, tablets and laptops. Lecturers are able to share their presentation slides with their students by providing a unique code at the start of the session. Once the student gain access, they will be able to see the presentation in the student's individual screen. The lecturer will have control over the pace of presentation. Students can only able to view the slide until the lecturer chose to display and the students are restricted from accessing subsequent slides. The lecturer can view the number of students who are active during the teaching session. This enables the lecturer to monitor the student engagement and understand the learning progress through the online activities prepared using the software.

Formative assessment activities like quizzes, polls, drawing function, collaborate and open-ended questions can be added to Nearpod presentations. This allows students to interact with the contents and the lecturer can view the response from each student for a particular activity. Then the lecturer can choose to discuss further or give formative feedback. Teachers can easily upload existing lessons, quizzes, polls, etc. and access student responses in real time. The lessons are easy to download and customize, choosing from thousands that suit your students' needs.

Prezi

PowerPoint can be viewed as boring and commonplace (Craig & Amernic, 2006). While it is a great tool, using a more dynamic presentation, editor may better capture the attention of a class or any other group of people. Having an editor that is cloud-based allows for more flexibility and collaboration than is possible with PowerPoint (Settle, Abrams, & Baker, 2011). Prezi's one-of-a-kind open canvas lets users organize and customize the presentation, or they can choose from millions of business, marketing, sales, and education templates among others.

ClassDojo

ClassDojo, which is "distributed free of charge is used by roughly 200,000 teachers" (Colao, 2012) as a tool to help teachers. ClassDojo was created to help the classroom teacher keep up with specific behaviours on each individual student, both positive and negative. The company reported that teachers using ClassDojo reported a 45% – 90% increases in positive behaviour and a 50% – 85% decrease in incidents of negative behavior (Colao, 2012). Because the program can give minute-by-minute, day-by-day, week-by-week feedback, students are encouraged and motivated to do a better job (Pianta, 1999). Additionally, it promotes the development of student social skills and self-regulation (Bear, 2008). Some of the features of ClassDojo's all-inclusive app include classroom music, a classroom timer, a random group generator, a morning meeting app, and a random student selector. The Group Maker is a very

useful tool for interactive classroom activities, automatically arranging students into pairs or groups for you.

Importance of technology in education

The importance of technology in education is undoubtedly the ability to reach more students more efficiently. After all, technology is all around us and only continues to expand in its many uses. Although many people like to rely on traditional methods of teaching, the possibilities that open when technology is brought into the classroom are endless. For one, access to education has been significantly broadened as a result, including a wide range of learning styles and degree options. Even if you are not a student or an education professional, it is crucial to note the importance of technology in education (Raja & Nagasubramani, 2018).

To really utilize these tools, teachers should ask themselves why students want technology in the classroom, not just why they need it. It can definitely help education professionals in the monitoring of individual development and innovative lesson planning. But the students who learn through technology can create a set of skills that will help them throughout their own future careers.

The role of technology in the field of education is fourfold: it is included as a part of the curriculum, as an instructional delivery system, as a means of aiding instructions and also as a tool to enhance the entire learning process. Thanks to technology; education has gone from passive and reactive to interactive and aggressive. Education is essential in corporate and academic settings. In the former, education or training is used to help workers do things differently than they did before. In the latter; education is geared towards creating curiosity in the minds of students. In either case, the use of technology can help students understand and retain concepts better.

Another use for technology in skill development is that of remediation. A quick Internet search on remediation software turns up over 1000 sites, each potentially, with numerous types of software. There are also online tutoring programs, which address a great many needs of the learner. In one particular peer-reviewed study on implementing tutoring systems, ITTS (Intelligent Tutoring Systems) each phase in the process is discussed: Analysis, design, development, and implementation. It is opened that Schools and Universities are in a race to improve learning for all students and improve test scores" (Wijekumar, 2006).

The report goes on to state that many tools are being marketed, such as computer assisted learning, games, practice tests, and communication applications. It is stated that while the potential for using technologies in learning environments continues to grow, the limits to what can be achieved are very real (Wijekumar, 2006). Technology can actually assist with some of these expectations and make teachers- and their students-more successful (Valdez, 2005).

Teachers cannot do this alone. They need to collaborate as well. This concept ties in well with technology as they can use technology such as Elluminate and other forms of electronic video conferencing, podcasts (like Tech Teachers Podcast thru Itunes), webinars, and email to collaborate with colleagues. One example of the need for this comes from the peer-reviewed article, Teaching Social Studies with Technology: New Research on Collaborative Approaches. "Fundamental to MITTENS, (an educators award for use of technology in Michigan schools) success is a program where its provisions for training in emerging technologies for educators and its facilitation of collaboration between people in different fields" (Valdez, 2005).

Factors affecting technology in education

Jung talks about the enormous challenges' teachers are facing in our society due to the rapid expansion of knowledge. The modern technologies are demanding that teachers learn how to use these technologies in their teaching. Hence these new technologies increase the teachers' training needs. Raja and Nagasubramani (2018) assert that teacher's attitudes toward computers are a key factor in the successful implementation of ICT in education. They pointed out that teachers do not always have positive attitudes towards computers and their poor attitudes may lead to a failure of the computer- based projects.

Lack of time; lack of access; lack of resources; lack of expertise and lack of support are commonly cited barriers. Another barrier given by Butler and Sellbom (2002) and Chizmar & Williams (2001) is reliability. Reliability included hardware failures, incompatible software between home and school, poor or slow internet connectivity and out of date software which are available mostly at school while the students/educators are having more up-to-date software at home.

Positive Effects of Technology

Technological developments like digital cameras, projectors, mind training software, computers, Power point presentations, 3D visualization tools; all these have become great sources for teachers to help students grasp a concept easily. It has to be understood that visual explanation of concepts makes learning fun and enjoyable for students. They're able to participate more in the classroom and even teachers get a chance to make their classes more interactive and interesting. Students can "meet" their counterparts through video conferencing without leaving the classroom. Some sites, such as www.glovico.com are used to help students learn foreign languages online by pairing a group of students with a teacher from another country.

With the introduction of online degree programs, there is hardly any need of being present physically in the classroom. Even several foreign universities have started online degree courses that student can join. Distance learning and online education have become very important part of the education system now a day. It makes students more excited to learn. Technology helps students with busy schedules, freedom to work at home on their own time. It trains students to learn new technology skills they can use later in the work place. It decreases paper and photocopying costs, promoting concept of "green revolution".

Negative Effects of Technology

Due to the excessive usage of online chatting and shortcuts, the writing skills of today's young generation have declined quite tremendously. These days, children are relying more and more on digital communication that they have totally forgot about improving their writing skills. They don't know the spelling of different words, how to use grammar properly or how to do cursive writing. Technological developments like graphical calculators, high tech watches, mini cameras and similar equipment have become great sources to cheat in exams.

It is easier for students to write formulas and notes on graphing calculators, with least chances of being caught. SMS or text messaging has become a favorite pastime of many students. Students are seen playing with their cell phone, iPhones day and night or driving and very often even between lectures. Being ever-connected to the online world has resulted in lack of focus and concentration in academics and to some extent, even in sports and extracurricular activities. Many experts and experienced people say that, due to such technology in education, student's imagination is affected, their thinking ability is reduced. Sometime it's also time-consuming from teacher's point of view. It is costly to install such technology. There can be health issues too when used over limit. Some students can't afford modern computer technologies.

Using Technology for Distance Learning

The technology in education is such, now, that quality learning can be accomplished from great geographical distances. Everything from home-schooled toddlers to college graduate students are using the technological software and hardware to access classrooms that they would not otherwise be able to. Colleges of all sorts are using this technology to increase enrolment and schools can utilize this to reach students who would not otherwise have access to adequate educational resources. The implications of this are far-reaching in financial savings as well as several other areas. The savings in transportation alone can be staggering to a school district. Technology really addresses our ability to help our kids get information that they might not have normally been exposed to (McHale 2007).

II. CONCLUSION

Looking back at the history of technology in the classroom it seems that the future of technology in education is an ever-changing landscape. No doubt the software and databases in use today will be modified or obsolete in a matter of years. Technology can allow teachers to do their jobs better by giving students a means to further their skills and exceed learning beyond what was once thought possible. There was a time in education when simply understanding the function of computer software and language (such as Fortran) and hardware would have been the endpoint of the knowledge of technology, but new ideas springboard from current ones and it is no longer necessary to understand how a chalkboard works in order to do the math problem. Simply learning the technique allows the student to take the knowledge farther.

Additionally, the slower learner now has access to remediation that they did not before. This allows student to learn at their own pace and optimize their abilities, whether they be high or low. Technology has allowed us to move away from a Behaviourist approach to learning and teach kids or rather, allow them to teach themselves through the ability to put the pieces together themselves and the motivation to do so. This constructivist approach seems to have a lasting effect on learners because the students process information cognitively, and what a powerful learning tool that is. Technology has also made our learning world smaller so that everyone can have access to the education of the global classroom. It is inclusive at all levels of education. This has had the great effect of enabling a post graduate student to achieve their masters degree in their "spare" time, as well as reaching students who have physical or geographical hindrances.

Some possible directions are software that allows mind tools to be utilized by students more freely and easily, freeing the teacher to be a facilitator rather than an instructor (dictator). There is no doubt that this will enhance learning through true understanding. Oddly, the greatest hurdle seems to have nothing to do with technology, that is the perception of the general public. Often education and technology are seen in the same way as the way that the person viewing learned; that is the behavioral model of Instruction. This limitation seems to encumber school districts with the, "It-was-good-enough-for-me-it's-good-enough-for-my-kids," mentality. There are many taxpayers that do not see the value in changing this approach; particularly when the standardized (shallow-rote rehearsal) test scores don't fly off the charts compared with our Asian, and European counter parts. It is a conservative mentality that does not see value in upgrading classrooms to enhance accessibility to Interknitted computers and other sources of educational technology.

Technology has a positive impact on education and at the same time may also pose negative effects. Teachers and students should take advantage of this in the good light and eliminate the drawbacks which are pulling back many of students as well as schools from achieving excellence. It is thus time for every country to introduce a more technologically equipped education sector in the future.

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