The Importance of Using Technology in Education

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Abstract

Technology is developing faster than ever before, and since the increasing development of remarkable innovations, digital technologies have changed our lives in the perspective that humankind dreamed in the past. The educational sphere has also been affected by these changes. These disrupting technologies are undoubtedly changing the educational system as well. It is now more straightforward and more accessible for educators to impart their classes in which students can effectively acquire the necessary knowledge to prepare them for life. A variety of software, tools, and applications have increased the availability of information, the general interest in a range of topics, and the interaction between students and teachers. It also affected not only the learning capability of students but also the public enlightenment as well as. The long path from manual control to automatization and the new technological era brings many more opportunities for trainers and listeners. The present article deals with an overview impact and influence of technology on education. It discusses technologies that we are already familiar with, e.g., videoconferencing, screen recording programs, class organizer applications, cloud technology; and also, more recent advancements, such as speech recognition tools, virtual reality (VR) and augmented reality (AR) and artificial intelligence (AI).

Keywords: *artificial intelligence, education, information, communication, technology*

The development of e-learning is related to the improvement of ICT. Some of the existing technologies are an addition to traditional education, while others can substitute entirely (Kiryakova, G., 2009). Considering the recent outbreak of Coronavirus, distance education has mandatorily been implemented in different educational levels worldwide. Although the technology was already available, these unexpected circumstances require educators to implement these technologies more frequently than ever (Dudin M.N., Shakhov O.F., Shakhova M.S., Rusakova E.P., Sizova Y.S. (2019).

On the one hand, distance learning is defined as improved capabilities in knowledge and/or behaviors as a result of mediated experiences that are constrained by time and/or distance such that the learner does not share the same situation with what is being learned. On the other hand, distance education is considered a formalized instructional learning by not affording in-person contact between student and instructor (Drivere-Richmond, K., King, F. B., Schrader, P. G. & Young, M. F., 2001).

Distance education and e-learning are developing and adaptive multidisciplinary fields. The different generations of distance education and e-learning have been affected by the technologies dominant at their respective times. Therefore, it is possible to say that information and communication technologies are an intrinsic part of these disciplines. Nevertheless, they must not be taken as the ultimate goal, but rather, as viable solutions to reduce barriers and increase interaction and communication.

On a practical level, there are a variety of available applications that can help educators with distance education. Videoconferencing applications, such as Google Meet or Zoom, assist educators in organizing their online classes. These free audio and video meeting applications allow teachers to communicate with a multiplicity of students, regardless of location. This technology also allows users to set up pre-scheduled meetings, record the meeting, and even produce automatic captions from voice recognition software (Dudin M.N., Bezbakh V.V., Frolova E.E., Galkina M.V. (2018).

Speech recognition tools could be applied to both distance education or in-person education. The mechanism consists of a dictation software that applies voice recognition algorithms to identify the spoken languages and convert them into text accordingly. It is an excellent instrument for educators to have an automatic transcript of the lectures and share them with their students almost instantly. At the same time, this technology allows students to fully engage with the teacher's speech, eliminating the necessity of taking notes while the teacher is explaining. The technology could also be used for translation purposes, having the capacity to convert enormous amounts of documents from the source language to the target language precisely and efficiently.

Screen recording programs (e.g., Screencastify, Flashback Express, OBS Studio, ActivePresenter) allow teachers to record the PC's browser, desktop, webcam, or sound; the recording can then be downloaded or shared directly to students via e-mail, YouTube or Google Classroom. Some of these

programs have the possibility that after the capturing phase, teachers may trim, cut, split the recording, change the volume or speed, add closed captions, annotations, or animations.

Google Classroom is one of the most popular tools among classroom organizer applications. Once teachers sign in and create a class on the tool, they may be able to manage the workflow, quizzes, materials, essays, student's assignments. It allows teachers to collect, review, and grade all assignments in one place. This application streamlines the process of sharing files between teachers and students and aims to simplify the creation, distribution, and grading of assignments in a paperless way.

 As whiteboard tools as Jamboard or Ziteboard let educators generate multiple boards or frames on the screen. It is versatile, considering that the teacher can write, draw, select a specific grid or background, add images, PDFs or notes, and even invite students or other teachers to collaborate. The whiteboard can also be shared or downloaded.

Cloud technology is another popular tool used by all types of users, including educators. Cloud computing is the delivery of different services through the Internet. These resources include tools and applications like data storage, servers, databases, networking, and software. Rather than keeping files on a proprietary hard drive or local storage device, cloud-based storage makes it possible to save them to a remote database. As long as an electronic device has access to the web, it has access to the data and the software programs to run it. (Frankenfield, 2019). Gratitude to the cloud technology, the days of carrying around heavy books from home to the classroom are soon to be an edge of the end. Cloud technology is helping students' backs and reducing the impact on the environment, but it also helps educators have direct engagement data, e.g., how long students take to complete an assignment without taking into upon "the note-taking procedure."

Visual images always have a strong appeal compared to words. Using projectors and visuals to aid in learning is another form of great technological use. Top institutions around the world now rely on the use of amazing PowerPoint presentations and projections to keep the learning interactive and exciting. Technological use such as projectors within the schools and colleges can take the interaction and interest levels right up and improve motivation. Students like to see appealing visuals and something that entices them to think rather than just reading words. The learning part also becomes pretty efficient when it comes to technology (Nagasubramani, P. C., & Raja, R., 2018).

Virtual reality (VR) and augmented reality (AR) have recently been implemented in some fields of education. The development of such technologies could help educators with presentation strategies, designing, and class demonstration. Virtual reality (VR) is a computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a helmet with a screen inside or gloves fitted with sensors. (Oxford University Press). This technology permits the formation of immersive virtual environments (IVE), which are artificial, interactive, computer-created scenes with high-resolution projections and 3D graphics that allow the user to be present and interact with a computer-simulated environment. This technology could be applied at an educational level to present geographic locations, events, blueprints, 2D and 3D models, designs, equipment, medical imaging, and building structures.

Augmented reality (AR) is defined as a technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view. It is an enhanced version of reality that uses technology to overlay digital information on an image of something being viewed through a device (such as a smartphone camera). (Flood, K., Glaeser, R., & McMillan, K. 2017). AR could also be defined as an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory and olfactory (Schueffel, P. 2017). It allows the presentation of superimposed computer-generated graphics onto a person's view of the real world and demonstrates to students a set of physical circumstances. This technology has been implemented in classrooms by Google's Expedition program, taking smartphones into virtual reality. This technology could potentially be applied to education in many ways, for instance, taking students on a 'visit' of a geographical location, museum, event, and alike.

It is necessary to mention that online degrees now have become a widespread phenomenon. People wish to take up online courses for their learning and certifications. Top institutions offer amazing online programs with the use of various applications and the Internet. This is a concept that will continue to rise as it gets more support and awareness. The online degree scenario worldwide is better known to students who work and look for flexible studying programs (Nagasubramani, P. C., & Raja, R., 2018).

The development of new technologies is affecting in-person education s well. Biometrics, face, and fingerprint recognition technologies can help identify students, teachers, and administrative personnel, e.g., for entering the university campus, the dormitories, or borrowing books from the library. The

implementation of 3D printing technologies in school is revolutionizing the art of presentations, designing, and modeling. It can be implemented to create machine parts, jewelry, and others. It is especially important for future engineers, inventors, and designers. The application of chip tracking uniforms or GPS bracelets can alert parents and teachers when students bailed from class.

Although the majority of advancements in technology that have been implemented in the educational field have complemented, enriched and transformed education for the better, there have been a few cases where there has been a backlash. Such is the case with the implementation of "headbands" (Focus 1 device created by BrainCo) to study pupils' concentration levels recently applied in China. This technology was implemented by Xiaoshun Township Central Primary School in Jinhua, Zhejiang province, had been wearing the headband to measure electric signals from the neurons and translated that into an attention score. The information was then sent to teachers and parents to inform on how focused students were on their studies. The technology was developed by Zhejiang BrainCo Technology, but was suspended in November 2019 after an overwhelming wave of criticism on state and social media. (Pinghui, Zhuang).

Acknowledgments

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