

Education technology research paper

[Technology](#), [Internet](#)



Abstract

Research has shown that we learn through our senses with each sense accounting for different percentage of that teaching. Through the skillful use of audio visual recordings and other instructional media, we can bring the world to the classroom. This paper therefore addresses the impact of education technology in student achievement. The use of education technology in teaching and learning process heightens motivation to learn. Ideally then, learners should have available, combinations of audiovisual experiences which reinforce one another so as to provide the most efficient path for possible mastery of understanding and concept. One of the trends within education is learner centered instruction. All too however, when learner centered instruction is applied to education technology, it is translated to mean learner- machine-interaction. This paper discusses the impact of technological literacy on learners through a mediated multichannel learning approach where the available media are used creatively and interactively to connect with learners drive for knowledge and skill.

Impact of technology of education on students' achievement

The perception of what constitutes educational technology and its impacts on students' achievement have evolved over a period for decades. This evolution has resulted in some confusion as to what educational technology stands for, since to most people the term at best implies computers or computer based learning (Chandra 1). Specifically, the term is often associated solely with technical equipment and media such as projections, televisions, films, tape slide programs, audio cassette recorders

and even computers whose use can be employed for purposes of bettering the learning process. To this effect there are two perceptions of educational technology namely; technology in education and technology of education, all with the aim of giving technology of education a succinct interpretation (Ellington, Percival and Race 3). Education Technology, though multifaceted as it is, has significant positive effects on the learners as it improves students performance and also betters an education system.

Technology in education encompasses the hardware face in which a great deal of work has been done in developing it as effective instructional equipment. For example, it concerns itself with gadgetry (machines) of education and training rendering it vulnerable to such references as “ the machine approach” and other somewhat related terms. According to the US President Commission of Enquiry on instructional technology, technology of education is a systematic way of designing, implementing and evaluating the total process of teaching and learning in terms of specific objectives, based on research in human learning and communication and employing a combination of human and non-human resources to bring about more effective instruction (as cited in Mangal & Mangal 3). It also entails the software components that are used to accompany the hardware in delivering instructions, examples being: transparencies, slides audiotapes, films, video and audio cassette recordings and computer programs among others.

Technology of education in its basic form involves intangible aspects of education for instance, the techniques of teaching and learning rather than the hardware itself and it also recognizes its principle role which is to help

improve overall efficiency of the teaching/learning process. Concerned with communication, audiovisual aspects, the types of media, educational broadcasting, e-learning and the resources and their management together with their associated impacts on the students as well as on the society as a whole, technology has greatly changed the way human beings live, in that, it has redefined living and it has played an important role in that many complex and critical processes can be easily and efficiently carried out and many manual tasks can now be automated (Lipsitz1).

Computers and internet technology has made it easy for students to acquire a lot of knowledge and for that reason it has made them to be people who are widely informed in thing that are happening in every sphere of the world. The use of hypertext (related to hyperlinks) for instance, improves knowledge transfer significantly considering that it shows the relationship between various components (Kovalchick 316). To Kovalchick, the World Wide Web enhances knowledge creation as well as promoting ‘ serendipitous learning’ (317).

Chandra points out that through technology of education for instance, the e-learning, where everything is done online has made students to focus their lessons on discussions and research rather than lecture (127). This has encouraged student led enquiry and greatly improved their thinking skills thus technology therefore offers greater opportunities for students to enhance their creativity and further allowing the student to control their learning.

In a classroom situation, technology has become part of the curriculum whereby learners take charge of their own education and are more likely to initiate learning based activities for example exploring topics more often on their own. As a result the students no longer depend on the teacher to be the only source of knowledge hence an improvement in performance as a result of wider knowledge availability. To Chandra, when students are given opportunity to take control of their own education it is noted that they get motivated and tend to work hard towards achieving the anticipated goals(127). He adds that this can only be achieved by technology since it engages students thereby triggering their imagination and this makes it possible for teachers to stimulate their minds towards a profound and lasting difference. In addition, “ technology can change teachers' pedagogic practices from a teacher-centered or teacher-directed model to a more student-centered classroom where students work cooperatively, have opportunities to make choices, and play an active role in their learning” (Learning Point Associates 1).

Technology of education if applied constructively, especially in research, by students saves their time. The use of laptops for instance, enables students to access books and other relevant learning materials within the comfort of their residence. The tedious task of walking to the library, searching for books in the shelves and even carrying load of books to their study rooms is greatly minimized and the time saved can therefore be invested in studying which results into better performance in the various disciplines. Conversely, if not utilized well, resources like laptops can be sources of distraction. Social sites like facebookTM and twitterTM are habitual to students who like

interacting through them and would waste a lot of time chatting and even posting messages to their friends. As a result the technology of laptops that would have enhanced students' achievement academically leads to a decline in their performance. Means et al in their book, from an empirical stand point, reveal that when used effectively, “ technology application can support higher order thinking by engaging students in authentic, complex tasks within collaborative learning contexts” (as cited in Verma 90).

The mostly recognized pointer to student achievement is the ability of students to recall information learnt as this predicts the chances of better performance in related tasks in future due to the correlation between performance and the ability to effectively retrieve already acquired knowledge and also the ability to draw the relation between past and present experiences(Chandra 4). Technology applied in education offers teachers the opportunity to use digital media to strengthen students' knowledge retrieval abilities. The incorporation of pictures, animation and sound in instruction enhances the ability of students to recall the information acquired in such lessons besides improving their conceptualization of complex systems. The animations and pictures that are always in three dimension fire up the imagination of students thereby improves creativity of students which is very pertinent in students' performance in tasks that require creativity- tasks like drawing and design(Chandra 4). Research also shows that continuous use of technology enables the learners to become more proficient in its use which opens up an exciting new world of learning possibilities.

It has also been noted that the web browsers, if used as research tools, makes it much easier for students to find deep information on any relevant subject or topic of study (Kovalchick 318). For instance, many students perceive mathematics as a very difficult subject but whenever they access information that guides them through alternative and varied approaches they build confidence and positive attitude that is a vital element in learning mathematics. Good examples of these sites include Google, Yahoo, and Bing search engines among others. Also basic software tools such as databases, spreadsheets and concept maps enable students to organize and evaluate data they obtain online (Kovalchick 318). This is very important as it improves research skills in students that are required for better achievement in their academic works. However, perpetual overuse of the internet has been noted to hinder student achievement at times. For instance, student find readymade materials which they copy and paste as their original work thereby hindering their authenticity and innovativeness. This means that as much as technology of education has shown elements of efficiency in education, care should be taken in order to protect the originality of the ideas; this is to say that plagiarism should be avoided.

Technology of education has also been discovered to improve the writing skills of the students. For example, students who use the word processors have their speed of writing improved as well as proper organization of the sentences and well established grammar. This is to say that students who use laptops regularly at schools and at home are better writers and they outweigh their peers in all four scored areas of writing assessment-content organization, language style and mechanics (Apple 2). This is possible

because computers allow them to do more extensive editing, which lead to better writing. A study conducted by the U. S. Department of Education showed that when schools provide students with computers and modem that they can use at home to connect to their schools networks, the amount of time that they spend on educational activities is increased since those students spent less time watching television. This therefore enhances their problem solving and critical- thinking skills, improve their writing and mathematics skills and also, their computer literacy is greatly improved (Apple 3).

Teachers at the centre stage of employing the use of technology in teaching learning environment have a direct influence on the students' achievement. Technology provides the teachers with varied opportunities; better way of instruction for instance uses of projectors, wide information base and improved standards of student assessment. As a result students get quality instruction, assessment and evaluation in their progress. Students under the tutelage of teachers who are exposed to technology advancement are likely to present to them the contents that are obtained from a variety of sources hence can be trusted. That is the knowledge acquired is up to date and meet the demand of the changing society.

Educational broadcasting is another aspect that is part of educational technology and it is referred to as the process of transmitting and distributing to schools and the general public educational information over the radio or the television. This has been noted to have worked well in Africa and other third world countries. In Africa for instance where technological

advancement is still very low, live transmission of radio programs has remarkably leaped barriers of space and time (Verma 91). Teaching quality of radio and television is that the duo is able to bring dramatic feelings into the classroom thus creating emotional impact on the learners. Content in some of the subjects can be very “dry” and reading a text from a textbook can be very boring, but if the same content is passed across through a radio or television program then the listeners will be able to identify with the voices, benefit from the voice variations and be motivated generally to listen to and respond to the program content.

The computer education is also very interactive and interesting and it adds the element of fun in education. This has made many students to develop positive attitude towards learning. However, this has made most of them to develop laziness as most students do not do not physically present themselves in lecture halls and others are not able to do even simple tasks like working out a simple arithmetic because everything are provided in the internet. That is to say, internet learning has impacted negatively on students achievement by creativity in the students due to over-dependency on it (Heinecke and Adamy 3). As Scott documents, on-line based system of education is a great threat to the institutions and therefore there is need to that the institutions embracing the use of online based instruction method should place stringent measures to govern its usage (136). Moreover, Another associated negative impact of educational technology is the fact that many people who rely mostly in the use of internet are progressively growing lazy day by day and at times it reaches a time when if there is no

internet, even a simple task cannot be done due to lack of creativity and also because there is an absence of the readymade materials.

In conclusion, technology of education is rather a multi-faceted process that cannot be reduced to one aspect such as “hands-on” skill or the application of computers. According to Hernandez&Goodson, Educational technology can be a magnificent tool if used in a sound educational manner (151). He adds that if other components of educational system: curriculum, timetables, assessment, teaching methods, school space, teachers and administrators mentality, school culture, among others remain the same, the use of computers would have very little, if any, in changing and improving student achievement. Although educational technology has some limitations like encouraging laziness and absconding of classes, its benefits to the students and the general public far surpass the limitations. As we have noted earlier, it contributes directly to students improved performance where the learners themselves take part in searching for the information and ideas which enables them to master the fundamental skills of reading, writing and problem solving. Also, they become proficient users of technology whereby they acquire ability to write better, express themselves more clearly and they can understand with ease a material which is presented to them.

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