

INVESTIGATING THE ROLE OF EDUCATIONAL TECHNOLOGY IN BEHAVIOUR CHANGE

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Abstract

This study suggests that for the perceived change of behavior due to technology, one has to use it regularly. The study focuses on the impact of technology on students and personnel in various levels of education and seeks to expose the behavioral changes due to integration of educational technology. Apparently, integration of educational technology has brought about both pedagogical and behavioral changes desirable to education systems. Technology is thus used to ameliorate learning. However, there is unequal access to technological achievements. Not all schools have trained ICT teachers hence the resulting different sets of behaviors. This paper explored the disparity between the technological advancement and behavioral reasons for the lack of universal technological behavioral changes and the reason for low competency in technological issues. Due to technology, motivation is enhanced, students look forward to the next lesson, learning becomes exciting, efficiency and effectiveness is increased, performance is enhanced, research is enhanced and it helps the users to understand the world better. Qualitative research was used to explore the behavior changes due to technology. Both interviews and questionnaires were used to explore the benefits of technology in schools. The paper expounded the link between educational technology and behavioral changes and how technology can be incorporated into everyday classroom practice.

Keywords: Education, Technology, Behavior, Behavior Change, Interactions.

Introduction

In the contemporary world, integration of educational technology has impacted behavior in both students and educational personnel. Thus, a number of scholars (Donbus and Gurol 2014 [1], Cox and Mcleod 2014[2], OECD, 2019 [3], Wouters et al 2013[4] agree that technology has impacted positive behavior change to a larger extent. Thus, technology has brought about both pedagogical and behavioural changes desirable to education system and contributes to effective and efficient teaching and learning. Cox and Mcleod (2014) [2] postulated that “students found integration of social media (whats up, facebook, twitter) in their education interactive and easy to use, whilst Facebook and twitter increases their motivation”. Educational technology thus contributes immensely to teaching and learning environment thereby increasing motivation and performances of both tutors and students.

According to Hussain (2009) [5] “behavior is any action, conduct and interaction that supports or deflects teaching and learning”. Behaviour and technology are interdependent and Technology can influence positive behavior change in teachers and students alike.

Although Education technology has become an integral part of a teacher and a student, some tutors find it a bit challenging to integrate technology into education due to inadequacy of competence in technology. This does not take away the benefits of technology to behavior change.

Michel (2018) [6] observed that “with technology, students can consult different books from different authors” easily- either by downloading on Google scholar or by using Amazon and the like. These are big search engines which help the students to perform better in class.

Background

According to Mackenzie (2005) [7] Educational technology is a “conscious effort made for the development and promotion of our powers”, a lifelong process by which a person develops ability to adjust their overall personality and ability to adjust to their environment. Technology entails incorporation of machines and electronic devices in order to produce a competent student with all the necessary skills, values and knowledge. Today technology has

advanced to unprecedented levels with Young ones, middle aged and the old are all catered for by technology through use of smart phones/watches, laptops, desktops, decoders, projectors among others. These gadgets are being used by people as young as 2 years and as old as 90 years. These same gadgets are found in many educational institutions although some fail to use them due to inadequate preparations and socialization.

The degree of technical complexity differs with age. Thus, younger tutors are more technologically enabled than old tutors while the highly educated tutors are also better prepared technologically than ordinary university or college graduates. Thus, while many schools are incorporating ICT in their learning even those found in villages, However, some might fail to secure the gadgets or find a competent computer technology teacher prompting the teachers to teach only theory-based technology without practice. Forbes (2019)[⁸] observed that “sophisticated learning materials are still a scarce resource in some developing and even developed parts of the world” hence more needs to be done to acquire appropriate gadgets.

According to Hussain (2009) [⁵], “there is need for another level of innovation which requires schools to question... how technology can be used to support teaching and learning in this era of ubiquitous learning.”

Benefits of Educational Technology

Technology has led to more accessibility, low costs and personalized learning experiences making education easy hence young ones and adults can advance their education without hindrances. Online learning has become handy for distance learning and during the times of the pandemics like covid 19 when online learning proved to be a crucial way of learning in such difficult times. Learning is no longer a hustle since students can access information any time of the day even up to midnight. Thus, long as one has a smartphone or a laptop together with the internet, studying is no longer limited to library times and reserve books can now be accessed through the internet.

Images and videos can send the message home with less difficulty. Gabbiadini and Greitemeyer (2017) [⁹] stated that “video gaming has been associated with enhanced working

memory, performance, task related cortical activity as well as training of emotional skills like self-regulation practices.” Thus, if the ministry of education or health wants to embark on educating students on dangers of drug abuse for example, they can use pictures and videos to drive the message home with more impact than just giving a speech. Donmus and Gurol (2014) [1] agreed that learning has been more positive when teaching materials are enhanced by technology.

According to Anita et al (2021) [10] technology is a learning and teaching tool and it impacts on social status, self-esteem, mental health and wellbeing of children and young people. Thus, digital devices are more widely used by young ones which makes their learning process easier. Hoge et al (2017) [11] argues that technology enhances learning, socialization and creativity and broadens their horizons. Tutors and students become more socialized than before due to technology. Students can talk to their tutors anytime of the day. They can ask for clarity on homework and certain assignments either during the weekends or in the evenings. Phone calls, messages and emails are the order of the day. Classrooms have been brought closer home. Students from different districts, areas, countries can convene in one google classroom due to technology. Introverts now have a platform to shine and showcase their talent than in a physical classroom. Technology gives everyone a chance to prove themselves worth! It makes the teaching and learning processes effective. Introduction of technology to education leads to global exposure. Students become abreast with current global issues as students no longer live in vacuums but instead are able to break the circle and understand the world beyond their own world.

How Technology Changes Behaviour

Emotions

According to Szaniszio, (2018) [12] “blogs, forums, online comment sections-are all replete with bold expressions of raw sentiment, encompassing displays of love and adoration... but also hate, disgust and revulsion”. The internet and social media have changed the behavior of most students and their tutors both positively and negatively. Thus, through technology,

students can read and learn stories about other students who are doing well irrespective of their backgrounds and economic status. This can encourage them to do the same. It can ward off the negative emotions they may have towards school, teachers and parents. However, if technology is misused, it can contribute to negative emotions, feelings of worthlessness and even lead to suicidal tendencies among the youth. This has been rampant in this 21st century, which Szaniszió (2018) [12] calls the “era of feelings or emotions. Cognition is inherently embodied in emotions. Hoge et al (2017) [11] argues that frequent engagement with social media by young ones has led to some negative outcomes for example anxiety and depression. This has been noticed in some young ones.

Perceptions

According to Disiree (2019) [13] technology engages the six senses of human perceptions; that is hearing, touch, sight, taste, smell and mind. Our perceptions of rhythm and mobility are integrated in technology also through the use of audio/video apps to cell phones and tablets. Technology has thus, changed the way many people, including students and teachers view education and life in general. Some students who view reading books to be monotonous are more motivated to read them online thereby contributing to better grades, thus, technology has facilitated mental rewiring in terms of perceptions.

Research

Smith (2022) [14] argues that “adding technology to the mix reduced the potential for human error and increased the speed of the research process. Thus, it has become easier for students and teachers to do research. Answers are always on their fingertips. According to Forbes (2019) [8] “students are always on the quest for more knowledge due to the vast learning resources.” Teachers can go into the classrooms with more knowledge and the same happens for students which has now contributed to more participatory behavior during lessons. However, it has led to a more dependency syndrome on “Hey google... which hinders the reasoning capacity. People no longer want to think neither reason but instead rush for the easiest way to find answers using google! Fintel (2011) [15] argues that “with technology,

students have many teachers and advisors” therefore they become more open minded as they no longer operate in a vacuum as before.

Attitudes

Technology has enabled working hours to be extended. Maddon and Jones (2008) postulates that ... blackberry users find it harder to forget about work at home and weekends.” The same happens to teachers and students. They can be working anytime of the day due to technology. However, technology can increase stress levels due to the amount of information and communication being received (Maddon and Jones, 2008) [16]. Numerous messages and communications can make it harder for the students and teachers to focus on learning objectives since teachers may lose focus as they respond to phone calls, facebook posts and WhatsApp messages as soon as they hear the alerts on their phone, hence the temptation to glance at the phone and possibly respond immediately. At that juncture, learning is disturbed. School counselors have to deal with the results of negative attitudes emanating from use of technology 24/7.

Inclusivity and Participatory Behaviour

Hillier and Rizk (2022) [17] argue that technology gives support to the children with disabilities to participate more in classroom activities”. It increases the participatory behavior of all students including those who feel that they do not measure up to the standards of other students. Thus, those with disabilities can access special education resources thereby improving academic outcomes. Literal books can be limited in the library but the internet can be accessed from every corner, thereby giving students equal access to research which motivates them to participate in class since they will be having background knowledge about the subject. Luppacini (2005) [18] postulates that “educational technology is a goal-oriented problem-solving approach, utilizing tools, techniques, theories and methods from multiple knowledge domains to design, develop and evaluate human and technical resources efficiently and effectively in order to facilitate and leverage all aspects of learning”. Therefore, with technology, knowledge problems are solved and students can participate effectively.

Collaboration

It is imperative for teachers and students to embrace technology in education since it facilitates collaboration. Teachers and students and parents collaborate in order for education to move forward. Class and individual work spaces can be created. All of them can contribute to their work space making learning easier and fast. Discussion forums can be created on online platforms for both parents and students. "Users can interact by sharing computer screens, a conference can have a brainstorming screen on which all members can write on from their computers" (Drew.C,2023) [19]. Teachers do not need to wait for weekends or holidays to finish in order to give feedback to students. Thus, through google classroom, teachers can give timely feedback to students and the students can correct themselves before they forget. Whatever questions they have will be clarified in time through the work space.

Learning a New Language

When families migrate to new places both parents and children are faced with an insurmountable task of learning a new language. However, with the advent of new technology, it is even much easier to learn through google translator and other language translators like French translators, Portuguese translators and the like. Homework given can be easily accomplished through such translators and students learn the language faster. For teachers, the load becomes lighter since the translators will do some of their tasks.

Self Esteem

Technology is a confidence booster especially to weaker students (Osborne, 1997) [20]. It stimulates their self-esteem and offers them some feelings of pride and encouragement thereby leading to academic achievement. This is a mutual feeling between teachers and students. Both of them develop self-esteem due to the use of technology. Most teachers did not have technology in their initial training but as they learn to use it, their confidence is boosted. They feel that they are better teachers than before. Students become more participatory in class activities and interact better with classmates.

Role Models

Technology enables students to access real world examples which assist them in promoting their critical thinking skills (Hussain 2009) [5]. They can read about hard working people and how they succeeded. This motivates them to work harder and even better.

Communication

There is more interaction through mass educational technology between the student and teacher, among students themselves and between teacher and parents. Technology enhances communication through such applications and google classroom through which teachers can post assignments to students and students can send responses to the teacher using the same application to deliver messages back to the teacher” instantly.

Mounting CCTV cameras in classrooms can assist in controlling the behavior of the students and the teachers since one would want to be seen on camera misbehaving or miscommunicating. This has the capacity to limit disciplinary cases hence learning time is fully utilized.

Literature Review

Technology impacts on socialization, self-esteem and the demonstration of specific behaviors like social isolation. Thus, those who intensely engage in technology perform better than those who use digital technology moderately (OECD, 2019) [3].

According to Wouters (2013) [4] “video games have been reported to be effective when supplemented with other pedagogical methods and played in groups. They support creativity, play and related cognitive, emotional and social development used, students become active, curious and interested in the lesson which will improve their performance and the outcomes. Students like visual aids more than anything else regardless of their age. Learning becomes more attractive and interesting. According to Walsh (2010) [21] “meaning should be communicated through combinations of two or more modes. Thus, students should

not see the lecturer as the only source of knowledge but should be able to regulate their own learning.

Caplan and Turner (2007) [22] are of the view that electronic communication can actually facilitate empathy as they provide access to people in distressing situations. Notably, virtual empathy contributes to real world empathy and improves communication among students. Elsewhere, Hillier and Harrison, (2007) [23] suggested that adolescents who communicated more online had greater clarity of “self-concept, which is the ability to understand who they are in a clear and stable way. Peter et al, (2005) [24] argued that technology can increase the opportunity of developing friendships online. Through education there is sharing of ideas among students and offering support to each other thus, Wood et al (2016) [25] observed that online communication can enhance friendships and decrease loneliness.

However, technology can also have adverse effects on the young people in school. Thus, Bandura (1986) [27] hypothesizes that children imitate what they see, hence, violent video gaming would stimulate aggression in children and young people and may lead to some bullying other students in class. Because of content observed online, students have reportedly beaten or used vulgar language to others. In such cases, parents need to be involved because this kind of rowdy behavior is not learnt from school rather it is learnt through entertainment at home hence the need for parents to control what their children watch at home. Predictably, educational technology can fulfill its purpose without any hindrance if students show discipline at home.

Methodology

The study used qualitative research approach to compare people’s attitudes, feelings and views.

Results

Almost all educational personnel at Gacuba 11 TTC agreed that technology involves the use of techniques, skills, machines and digital tools to produce good results and that methods and

tools enable application of scientific knowledge to perform activities easily, quickly and efficiently.

The respondents explained human behavior as a way of being, way of living, a manner of doing things and a way people act when they interact with the environment. An expression of the capacity of a human individual.

All the respondents agreed that technology is interesting and good despite a few negative points hence rightly applicable a good intervention in the classroom. They observed that technology is interlinked to human behavior, influences how people behave, judge others and can shape behavior positively or negatively when managed well. They observed that technology encourages more interaction and has replaced the traditional way of meeting face to face, that it is time saving and less expensive and that students can be motivated to work hard in school so as to be like the role models they watch on television or internet.

They observed that there is now easy transmission of information through emails, what's up, twitter, Instagram and facebook and that way of communication has been made easy hence improving the way of learning and communication. Arguably, use of projectors during learning motivates students to participate more than usual which helps in the improvement of skills. Thus, according to Fintel (2011) [15] "visual instruction can be more appealing to students. Equally, technology assists teachers to share teaching and learning materials effectively.

During Covid 19, technology became a life saver to administrators and students. Thus, students still managed to engage in schooling whilst in the comfortable homes as Online learning became the norm in the year 2019/2020 and later as technology remained crucial in teaching and learning activities enabling quick research in the classroom to both teachers and students. Arguably, technology has to ascertain extent encouraged laziness as teachers and students to google for quick answers to their questions. All respondents in this study had smartphones and laptops which are an integral part of internet and technology assisted learning.

Technology can be used in the classroom to support learning through PowerPoint presentations and videos making learning more interesting and thereby improving the lesson delivery. Teachers are able to research extensively and faster before teaching and inclusive education has been made easy by use of technology. Students and teachers can now share ideas quickly and efficiently and studies become easy. Equally, updated information is easier and faster to acquire enabling faster decision making.

100% of the respondents used google, 80% you tube and almost all used other social media platforms like what's up generally shaping the behavior of both students and teachers alike. The respondents on average spent from 1 hour to 5 hours per day using technology.

Discussion

Technology enhances learning. Thus, according to Fintel (2011) [15], students have many teachers, advisors and effective instruction due to technology. Information is now easily accessible and can be easily and effectively disseminated to students. Studying habits, perceptions, emotions and attitudes have also changed due to the advent of technology. Thus, teachers and students are almost at par in terms of finding access to learning material. According to Worsham et al (2018) [26], people can make better technological decisions and create more meaningful digital transformation leading to tremendous academic and research results.

Recommendations

There is need for both students and tutors to engage in use of technology to enhance curriculum delivery and research output and government should provide infrastructure and provided continuous professional training for ICT teachers in National intuitions.

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