ROLE OF EDUCATIONAL TECHNOLOGY IN BEHAVIOUR CHANGE AMONG STUDENTS IN PRIVATE UNIVERSITIES IN KIAMBU COUNTY, KENYA

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Abstract

Educational technology plays an important role in improving classroom pedagogy in many institutions of higher learning. It enhances sharing of information among lecturers and students and reduces instructional time wastage. However, educational technology has been abused by students leading to behavior change. Many students get distracted from their academic work, rarely concentrate in class but are constantly on their mobile phones attending to issues not related to their academic activities. This study sought to assess the extent to which educational technology has influenced behavior change among students in private universities in Kiambu County, Kenya. The study was guided by the theory of planned behavior. The study adopted a mixed methodology and applied a concurrent triangulation research design. The research targeted 6996 respondents comprising 349 lecturers, 113 Heads of Departments, and 6534 students which a sample of 379 respondents (30 lecturers, 12 HoDs, and 337 students) was determined using Yamane's Formula. Qualitative data was analyzed thematically along the objectives and presented in narrative forms. Quantitative data was analyzed descriptively using frequencies and percentages and inferentially using Pearson's Product Moment Correlation Analysis in Statistical Packages for Social Science (SPSS 23) and presented using tables. The study established that, despite the noble role of technology in improving teaching and learning activities, 56.9% of students in private universities in Kiambu County have witnessed a change in their behavior. Over 65.8% of the students rarely concentrate on class activities with over 80.1% constantly busy with their mobile phones. There is need for students to embrace responsible use of educational technology for their academic benefit and spend little time on non-academic issues. The university management should formulate and enforce ICT policies that restrict the use of technology gadgets such as mobile phones during lectures.

Keywords: Behavior Change, Educational Technology

Introduction

Technology is becoming more and more prevalent in today's education system and its use has improved classroom pedagogy. Learning institutions are striving to provide their students with a computing devices, such as a laptop or tablet, for the students to access the internet, digital course materials as well as digital textbooks [1]. According to a recent survey that was given to New York students, ranging from age 12 to 15, every student surveyed had some form of screened device, and 97% of them also had a cell phone [2]. With this information, it is clear that the direction of education and society is changing rapidly. During the 2019-2020 school year, during the COVID-19 pandemic, the world got a taste of just how quickly the education system is shifting to more technology-based and virtual schooling experiences. Though the use of educational technology has been hailed as noble and timely in improving teaching and learning activities, it has had its fair share of negative effects on the behavior patterns of students, especially those in institutions of higher learning.

A report by Saunders and Vallance (2017) [3] shows that screen time is deleteriously associated with numerous health indicators in child and youth populations, including obesity, aerobic fitness, quality of life, self-esteem, prosocial behavior, academic achievement, depression, and anxiety. Technology in the classroom can also be used to report on students' disciplinary issues such as tardiness and negative behavior [3]. Strong evidence shows how students gain a stronger sense of control by tracking their behavior and have an easier time recognizing when they fall into negative patterns. In Canada, a study by Faught et al (2017) [4], found that many students manifest instances of behavior change with quite a number getting distracted from academic work, rarely concentrating in class but constantly on their mobile phones attending to issues not related to their academic activities. Faught et al (2017) [4] revealed that, in institutions of higher learning, 68% of surveyed educators admit that digital tools make students take shortcuts, instead of investing any effort in writing, 67 % report students have difficulty reading and comprehending complicated texts, and 46 % say that digital tools make students write fast and carelessly.

In many countries in Sub-Saharan Africa, the scenario is the same with the use of technology being at the epicenter of classroom instruction. A study carried out in Ghana [5] revealed that 79.4% of institutions of higher learning have embraced use of technology in teaching and

improving interactions between lecturers and students and that technology has changed the basic idea of education and helped to achieve perfection in the educational field since it has helped teaching staff as well as students in achieving new techniques and ideas of teaching and learning. Similarly, Ng'ambi, et al (2016) [6] undertook a study in a sample of 9 tertiary institutions in KwaZulu Natal Province in South Africa and revealed that educators were worried that the use of technology in the educational field would divert students mind and they will lose concentration on learning, though it improved students' interest and desire to discover new ideas in every subject.

In Kenya, Waithaka et al (2018) [7] opined that the use of technology has become an integral part of every student's academic and social life and observed that the use of technology in teaching is stress-free and the classrooms are energetic and full of positive vibes. In other words, there is an immense change in student's behavior toward learning and the way they look at education has changed. However, with the advent of technology, the behavior patterns of many students in institutions of higher learning with many spending too much time on their mobile phones and the internet thus lowering their time for concentration in academic activities. Private universities in Kiambu County are no exception with technology being considered a milestone in shaping the education and behavior of students.

A study carried out in tertiary institutions in Kiambu County found that, from smartphones and social media to TV and tablets, students are constantly inundated by technology. The authors noted that, while it is important for students to develop an aptitude for technology, after all, they will use computers their whole lives, and too much technology use can have detrimental health and physical effects. The authors observed that many students in private universities in Kiambu County have witnessed a change in their behavior with a majority not able to concentrate on class activities. Despite this, empirical studies are yet to interrogate the extent to which the use of educational technology influences behavior change among students in private universities, hence the study.

Statement of the Problem

Educational technology plays an important role in improving classroom pedagogy in many institutions of higher learning. It enhances the sharing of information among lecturers and

students and reduces instructional time wastage. However, in private universities in Kiambu County, the situation is quite different since many students have demonstrated some degree of behavior change. Many students get distracted from academic work, rarely concentrate in class but are constantly on their mobile phones attending to issues not related to their academic activities. Despite these observations, few empirical studies have interrogated the extent to which educational technology has impacted behavior change among students in private universities, hence the study.

Objectives of the Study

The study sought to assess the extent of behavior change and the extent to which educational technology influences behavior change among students in private universities in Kiambu County, of Kenya.

Literature Review

Theoretical Framework

This study was guided by the technology acceptance theoretical model (TAM) by Davis (1989) [9] and was anchored on the fact that users' technology acceptance intention is directly affected by perceived usefulness (PU) and perceived ease of use (PEOU), which had a positive effect on perceived usefulness. The author observed that user's acceptance of technology is influenced by both intrinsic and extrinsic motivators, which include PEOU and PU respectively. Davis' TAM was adapted from Fishbein and Ajzen's (1975) theory of reasoned action (TRA) and planned behavior [10] which explained people's actions by identifying the causal connections between some components as beliefs, attitudes, intentions, and behavior. According to Ajzen (1991) [11], TPB is a linear model that discusses attitudes, perceived norms, and perceived control which directly influence behavioral intentions, which, in turn, affect behavior. In other words, under TPB, norms and attitudes moderate the influence of perceived behavioral control on intentions. In the context of this study, this theory was particularly relevant to behavior change as occasioned by the use of educational technology by students in private universities in that beliefs and values about technology strongly influence the decisions students make about their behavior.

The Conceptual Framework

In this study, the conceptual framework was based on the use of educational technology which constituted the independent variable whereas behavior change among students in private universities constituted the dependent variable. Intervening variables were; government ICT policy and stakeholders' support as shown in Figure 1:

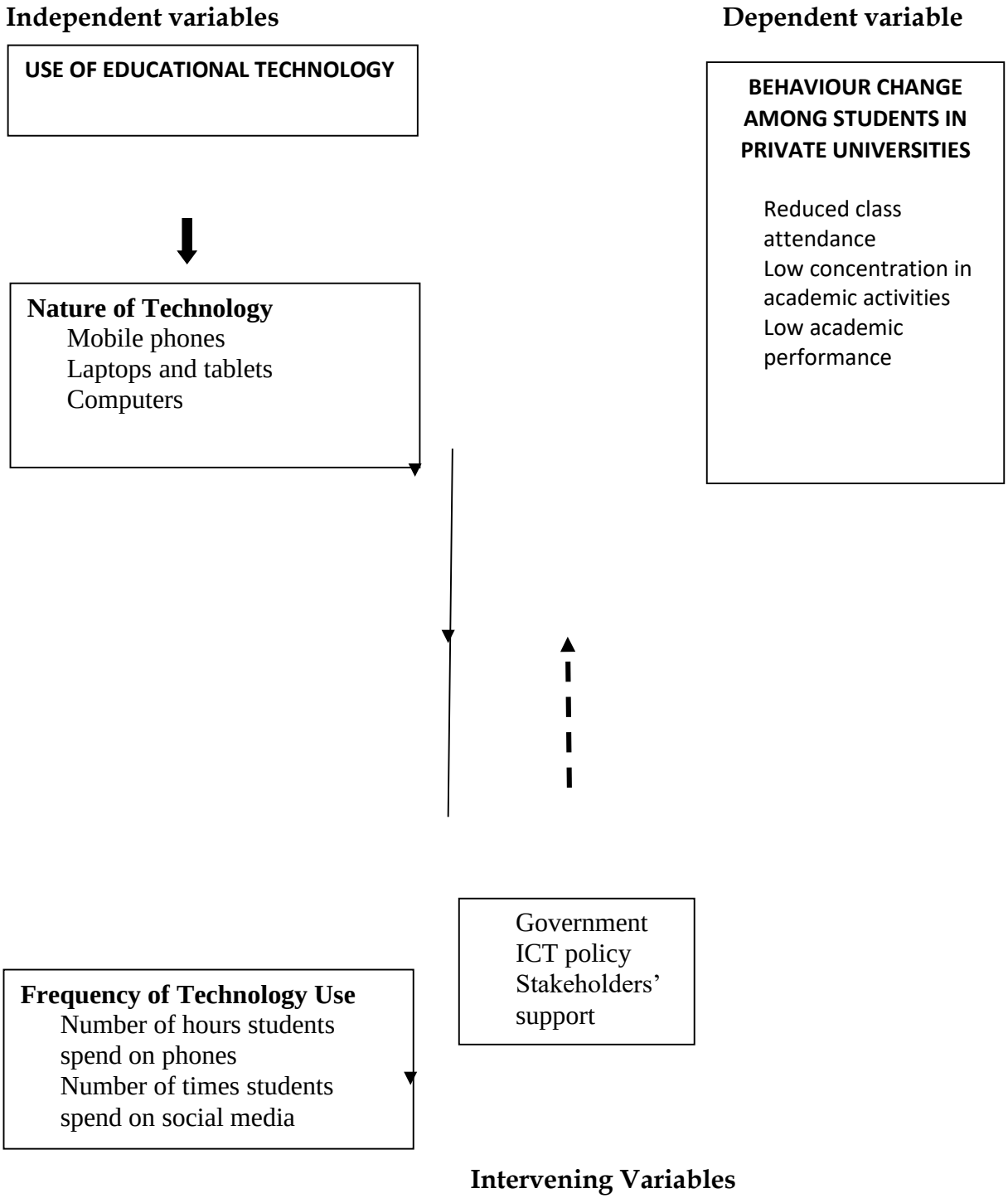

Figure 1: The Conceptual Framework

Source: Researcher (2023)

Research Methodology

The study adopted mixed methodology and applied concurrent triangulation research design. The research targeted 6996 respondents comprising 349 lecturers, 113 Heads of Departments and 6534 students which a sample of 379 respondents (30 lecturers, 12 HoDs and 337 students) was determined using Yamane's Formula. Questionnaires were used to collect data from students whereas interview guides were used to collect data from HoDs and lecturers. Qualitative data was analyzed thematically along the objectives and presented in narrative forms. Quantitative data was analyzed using descriptive statistics such as frequencies and percentages and inferentially using Pearson's Product Moment Correlation Analysis with the help of Statistical Package for Social Sciences (SPSS Version 23) and presented using tables.

Results and Discussions

This section presents the findings of the study based on the objective. It also outlines the methods of presentation of the study findings and discussions.

Response Rates

In this study, 337 questionnaires were administered to students out of which 331 were filled and returned. 10 Heads of departments and 26 lecturers were interviewed. This yielded response rates shown in Table 1;

Table 1: Response Rates

Respondents	Targeted	Participated	Return Rate (%)
Heads of Departments	12	10	83.3
Lecturers	30	26	86.7
Students	337	301	89.3
Total	**379**	**337**	**88.9**

Table 1 shows that heads of departments registered a response rate of 83.3%, lecturers 86.7% and students giving an average response rate of 88.9% which is consistent with the assertions of Creswell (2014) [12] that a response rate above 75.0% is adequate. This information was important since it enabled generalization of the study outcomes to the target population.

Manifestation of Behavior Change among Students in Private Universities

The study sought to assess how often students in private universities have manifested behavior change with the advent of educational technology. Results are shown on Table 2;

Table 2: Extent of Behavior Change among Students in Private Universities

Indicators of Students' Behavior	Number of Students					
	Often		Rarely		Never	
	f	%	f	%	f	%
Use of technology such as mobile phones	241	80.1	35	11.6	25	8.3
Class attendance	134	44.5	160	53.2	7	2.3
Concentration in class	84	27.9	198	65.8	19	6.3
Impressive academic performance	132	43.9	166	55.1	3	1.0

Table 2 shows that 241(80.1%) of the students in private universities often use technology gadgets such as mobile phones, 35(11.6%) rarely use while only a paltry 25(8.3%) stated that they never used technology. On class attendance, 134(44.5%) of students often attend class, 160(53.2%) rarely attend class while 7(2.3%) never.

The study further showed that 84(27.9%) of the students in private universities often concentrated in class, the majority, 198(65.8%) rarely did whereas 19(6.3%) never concentrated in class. A fair proportion, 132(43.9%) of the students often register impressive academic performance, slightly more than half, 166(55.1%) rarely do while a paltry 3(1.0%) never performed well. During the interviews, the heads of departments and lecturers also stated that students use technology gadgets such as mobile phones. The head of the department, HoD1, noted;

Almost all students in my department and the entire university have mobile phones or other forms of technological gadget. Most of them are constantly on their mobile phones chatting. This has often distracted them from academic activities.

On their part, the lecturers also noted that many students are constantly on their mobile phones, and tablets chatting or engaged in internet activities outside their academic programs, sometimes even during lectures. The interviewees noted that students miss class on many occasions, and rarely concentrate on class activities which has occasioned a decline in their academic performance. These findings lend credence to the findings of Agyemang et al (2019) [5] that, in Ghana, 79.4% of institutions of higher learning have embraced the use of technology in teaching and improving interactions between lecturers and students. These findings further support the assertions of Waithaka et al (2018) [7] that, in Kenya, the use of technology has become an integral part of every student's academic and social life. These findings point to the fact that the use of technology has become part and parcel of a student's life, though with a net negative effect on their behavior patterns.

Educational Technology and Behavior Change among Students in Private Universities

The study sought to establish how the use of educational technology influences behavior change among students in private universities. Descriptive data were collected from teachers and results are shown on Table 3.

Table 3: Students' Views on the Influence of Educational Technology on Behavior Change among Students in Private Universities

Test Items	Ratings in %				
	SA	**A**	**U**	**D**	**SD**
The use of technical gadgets such as mobile phones, laptops, tablets, and computers has become a common phenomenon among students in private universities	78.7	9.6	2.3	4.3	5.1

The frequency with which students engage in their technological gadgets has affected their levels of concentration in academic activities	66.8	10.6	3.3	8.6	10.7
Behavior changes among students such as reduced class attendance have been occasioned by increased use of technology	64.8	9.3	5.3	16.3	4.3
In private universities, students' academic performance has gone down since they spend much time on social media and non-academic internet sites	82.7	8.3	2.7	1.7	4.6

Table 3 shows that 237(78.7%) of students were in strong agreement with the view that the use of technical gadgets such as mobile phones, laptops, tablets, and computers has become a common phenomenon among them in private universities 29(9.6%) agreed, 7(2.3%) were undecided, 13(4.3%) disagreed whereas 15(5.1%) strongly disagreed. These findings corroborate the findings of a study carried out in Ghana by Agyemang et al (2019) [5] which established that 79.4% of institutions of higher learning have embraced the use of technology in teaching and improving interactions between lecturers and students. The authors observed that technology has changed the basic idea of education and helped to achieve perfection in the educational field since it has helped to teach staff as well as students in achieving new techniques and ideas of teaching and learning.

Elsewhere, Waithaka et al (2018) [7] noted that, in Kenya, the use of technology has become an integral part of every student's academic and social life and that the use of technology in teaching is stress-free and the classrooms are energetic and full of positive vibes. These findings are indicative of the fact that the use of educational technology has become the in-thing among students as a critical tool for improving pedagogy and learning. Slightly more than two-thirds, 201(66.8%), of the students strongly agreed with the view that the frequency with which students engage in their technological gadgets has affected their levels of

concentration in academic activities while 32(10.6%) agreed. However, 10(3.3%) were undecided, 26(8.6%) disagreed whereas 32(10.7%) strongly disagreed.

These findings support the observations of Faught et al (2017) [4] that, in Canada, many students manifest instances of behavior change with quite a number getting distracted from the academic work, rarely concentrating in class but constantly on their mobile phones attending to issues not related to their academic activities. The authors further observed that institutions of higher learning, 68% of surveyed teachers admit that digital tools make students take shortcuts, instead of investing any effort in writing, 67 % report students have difficulty reading and comprehending complicated texts, and 46 % observed digital tools make students write fast and carelessly.

The majority, 195(64.8%), of the students strongly agreed with the view that behavior changes among students such as reduced class attendance has been occasioned by increased use of technology while 28(9.3%) agreed. However, 16(5.3%) were undecided, 49(16.3%) disagreed whereas 13(4.3%) strongly disagreed. Table 3 shows that most of the students, 249(82.7%), strongly agreed with the view that, in private universities, students' academic performance has gone down since they spend too much time on social media and other non-academic internet sites whereas 25(8.3%) agreed. At the same time, 8(2.7%) were undecided, 5(1.7%) disagreed whereas 14(4.6%) strongly disagreed. These findings lend credence to the assertions of Waithaka et al (2018) [7] that, in Kenya, the use of educational technology has occasioned an immense change in student behavior. This implies that behavior patterns of many students in institutions of higher learning have changed with many spending too much time on their mobile phones and internet thus lowering their time for concentration in academic activities.

In summary, these findings affirm the fact that, though, crucial for improving classroom pedagogy and mastery of content among students, technology has led to negative changes in behavior with a majority of the students rarely attending class, rarely concentrating on their

academic activities which have occasioned low performance in formative and summative assessments.

Inferential Analysis

To verify the influence of the use of educational technology on behavior change among students in private universities, data was collected from the 10 sampled HoDs on how often students spend time on their mobile phones while in class (Very Often = 5, Often = 4, Sometimes = 3, Rarely = 2 and Never = 1) and the number of hours they spend in class activities on a day. Results are shown on Table 4:

Table 4: How Often Students Spend Time on their Mobile Phones while in Class and the Number of Hours they Spend in Class Activities in a Day

How Often Students Spend Time on their Mobile Phones while in Class	Average Number of Hours Students Spend in Class Activities in a Day
5	1
1	8
4	1
5	1
5	8
2	5
5	3
1	7
5	2
2	6

Table 4 shows that students in private universities frequently spend most of their time on their mobile phones while in class which has affected the number of hours they spend in class activities. In other words, the data on Table 4 show that, the higher the frequency of time spent on mobile phones by students, the fewer hours they spend on academic activities in

class. These results were subjected to Pearson's Product Moment Correlation Analysis and the results are shown on Table 5:

Table 5: Pearson's Product Moment Correlation Analysis Showing the Relationship between Educational Technology and Behavior Change among Students in Private Universities

		How Often Students' Spend Time in Mobile Phones in Class	Number of Hours Students Spend in Class Activities
How Often Students' Spend Time in Mobile Phones in Class	Pearson Correlation	1	-.659*
	Sig. (2-tailed)		.038
	N	10	10
Number of Hours Students Spend in Class Activities	Pearson Correlation	.659*	1
	Sig. (2-tailed)	.038	
	N	10	10

*. Correlation is significant at the 0.05 level (2-tailed).

Data on Table 5 indicates that there exists a negative correlation between the frequency of use of technology and behavior change among students in private universities ($r(10) = -0.659$, $p = 0.038$ at $\alpha = 0.05$). This implies that, with the introduction of technology as a tool for classroom instruction, there has been a net negative effect on students' behavior.

From the study findings, students spend too much time on technology gadgets such as mobile phones, miss classes, and rarely concentrate on academic activities which has led to a decline in their academic performance.

Thematic Analysis

During the interviews, however, the heads of departments and lecturers also responded in favor of the view that the use of technical gadgets such as mobile phones, laptops, tablets, and computers has become a common phenomenon among students in private universities. Head of Department, HoD2, stated;

In my department, almost every student has a mobile phone or tablet which he or she uses either for communication or learning activities. Most of the students get notes from the internet owing to a limited number of course books available in the physical libraries in the university.

On their part, the lecturers indicated that, in the current world, learning takes place through the internet and every student is required to have a technology gadget such as a smartphone or tablet with internet connectivity to get more learning materials. Lecturer, L1, observed;

In my lecture, much of the learning takes place through the internet and I recommend sites where my students can get good notes to supplement what I provide them in the physical class.

These views point to the vitality of educational technology in improving classroom instruction and the need for every student to possess a gadget for accessing online information. However, the interviewees noted that the frequency with which students engage in their technological gadgets has affected their class attendance, and levels of concentration in academic activities as well as lowering their academic performance. Just as noted in quantitative findings, these qualitative findings affirm the fact that, despite its noble role in improving classroom teaching and learning activities besides enhancing mastery of content among students, technology has led to negative changes in behavior with the majority of the students rarely attending class, concentrating in their academic activities which have occasioned low performance in formative and summative assessments.

Summary of Findings and Conclusions

From the study findings, it is evident that the use of technology has become a common occurrence in many private universities to improve classroom delivery among lecturers and enhance mastery of content among students. It makes it easier for students to access a lot of information for learning faster. Thus, many students frequently use technological gadgets

such as mobile phones and tablets for academic reasons. However, the integration of technology has had a net negative effect on the behavior patterns among students in private universities.

Many students spend too much time on their gadgets accessing social media information that may not be relevant to their academic activities. They frequently miss class and rarely concentrate on their academic undertakings which has occasioned low academic performance.

6.0 Recommendations

The study recommends that students should embrace responsible use of educational technology for their academic benefit and spend little time on non-academic issues. The university management should formulate and enforce ICT policies that restrict the use of technology gadgets such as mobile phones during lectures.

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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 Szaniszio (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. Luppicini (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 assists 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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