E-ISSN: 2997-9366

American Journal of Management Practice
https://semantjournals.org/index.php/AJMP

| Research Article

Check for updates

Challenges of Technological Innovations in Students Performance in a Selected University in Nigeria

Momoh Suleman Imonikhe
Department of Marketing, Auchi Polytechnic, Auchi

Momoh Nanafatimah Bello (Mrs)
Department of Business Administration, Auchi Polytechnic, Auchi

Abstract: The increasing technological innovation intervention in varsities was still a herculean task, especially with the lack of adequate infrastructures and limited resources in the school, The purpose of the study was to determine the impact of technological innovation on students' performance in a selected federal university. Federal university Lokoja, Kopi State was purposively selected as proxy represented the whole federal universities in Nigeria The study explored the differences in student achievement technology and non-technological innovation using 3 specific objectives as the background philosophy of the study. Such as, to examine the impact of technological innovations on the academic performance of students in the federal university Lokoja Kogi State Nigeria., to investigate the impact of technological innovations on the students moral standards in the federal university Lokoja Kogi State Nigeria and to determine the impacts of technological innovations on crime rate in the 21° century universities in Nigeria. Descriptive survey was adopted as the methodology applied and data were analyzed using the SPSS econometric package and chi-square econometric computations. The results showed strong negative impact of technological innovation on student's performance, such as, the deterioration of the student's competencies, the exchange of human beings to machines thereby leading to the dehumanizing effects of techno-innovation, the isolation state crated by technology, the disparity among the social classes thereby widening the gap between the poor and the rich etc. It is recommended that since the technological innovation exerted a negative influence on the students performance in the school, serious precautions ought to be taken by the government concerning the of computers in the schools. Keywords; Technology, innovation, students, performance and challenges.

This is an open-access article under the CC-BY 4.0 license

INTRODUCTION

Information and communication technology is a tool used in the 21st century to faster learning activities in the school. According to Omatseye (2000), "the school is a social institution

established by members of the society for the purpose of transmitting their culture from one generation to another".

It improves the culture by producing generations of people who are more refined and enlightened than their parents or forefathers. Naturally, the teacher and the education system in which the teacher operates cannot stand aloof from the society. They are part and parcel of it and are both an embodiment and a reflection of culture, traditions, yearnings and aspirations of the people, information and communication technology ([CT) through the use of computer network system, telecommunication devices, internet facilities.

According to World Bank, (2002) ICT cover any product that will store. retrieve, manipulate, transmit or receive information electronically in a digital form. It consists of pardware, software, networks and media for collection, storage, processing, transmission and presentation of information (Voice, data, texts and images). Dev-Net, (2003), information and Communication Technologies are human society. Before the advent of technology in human society, people communicated using various instruments and codes such as: talking drums, flutes, gongs, town offers and village square meetings.

The use of writing materials transformed the type and context of recorded history and communication on a universal scale became possible through the use of books, newspapers, magazines and radio, education, according to Coombs (2006) consist of two components. He classified these two components into inputs and outputs. According to Coombs (2006). inputs consist of human and material resources and outputs are the goals and outcomes of the educational process. Both the inputs and outputs form dynamic whole and if one want to investigate and asses the educational system in order to improve its performance, effects of one component on the other must be examined. Instructional resources which are educational inputs are of vital importance to the teaching of any subject in the school curriculum.

Wales (2005) is of the opinion that the use of ICT as an instructional material makes discovered fact glued firmly to the memory of students. Savoury (2007), also added that a well planned and imaginative use of visual aid in lesson should do much to banish apathy, supplement inadequacy of books as well as arouse students interest in giving them something practical to see and do. And at the same time, helping to train them to think and do things right by themselves. 'Georgia (2004) clearly maintains that the selection of materials which are related to the basic contents of the course or a lesson helps bring about in-depth understanding of such a lesson by the student in that, they make the lesson attractive to them. It is also very vital to have sufficient and adequate human resources in terms of quality for the teaching of all subjects, most especially for the technical subjects. Instructional material Should be provided for the benefit, and the outcome of the lesson, for them to achieve their education goals. Knezeqich (2005) had stressed the importance of having appropriate Personnel and adequate physical facilities to support educational effort. Unfortunately, most subjects especially auto-mechanical were not being taught with use of instructional material in most school. Student have been hearing the names, that the teacher will mention like engine block, craw-shaft key starter, alternator etc., and this is majorly as a result of poor instructional material used in classroom delivery of lesson, also student who are goog with the use of instructional material in

Statement of Problem

Summarily, the poor academic performance, the high cultism rate, the pseudo human capital productions etc could be related to the 21* century technological innovation

(a) Calls upon the Department of Education to create a national strategy to involve technology into all educational programs and the state and local school systems,

(b) Foster understanding of how technology can be used to improve teaching and learning,

(c) Show how technology can be used to create an equal opportunity for all students to be successful while meeting state education requirements, and

(d) Create high-quality professional education opportunities for educators with the ability to integrate technology into their instruction (Goals 2000: Educate America Act, 1994),

The above rationale for techno innovation was defeated hence the aim of the articles was to unravel the challenges of technological innovations and students performance in a selected university Nigeria"

Objectives of the Study

The broad objective of the study is to assess "the challenges of technological innovations and students performance in a selected university Nigeria"

Specific Objectives

c. To examine the impact of technological innovations on the academic performance of students in the federal university Lokoja Kogi State Nigeria.

d. To investigate the impact of technological innovations on the students moral standards in the federal university Lokoja Kogi State Nigeria.

e. To determine the impacts of technological innovations on crime rate in the 21st century universities in Nigeria

1.4 Research Questions

1. What is the impact of technological innovations on the academic performance of students in the federal university Lokoja Kogi State Nigeria?
2. What is the relationship between technological innovations on the students' moral standards in the federal university Lokoja Kogi State Nigeria?
3. What is the relationship between technological innovations and crime rate in the 21% century universities in Nigeria?

REVIEW OF RELATED LITERATURE

The Challenge of Technological Innovations in the 21°' Century Universities in Nigeria Technology is a recent marvel in our everyday life that has taken off. Technology allows the most difficult tasks to become seamlessly easy and more efficient. In education, technology has allowed the dissemination of knowledge to be dispersed instantly and it allows for quicker and more effective communication. Also, technology has allowed students to be engaged and learn in ways that they never have in a classroom setting before. According to Spears (2012) she cites Donovan, Hartley & Strudler (2007)

The goal of ACOT was to promote change in the context of education'(p. 1). Spears continues in her study and describes Microsoft's Initiative through the Anytime, Anywhere Learning (AAL) program. Spears (p. 1) cites the work of Donovan et al. (2007), ""An increase in enthusiasm for teaching and learning with technology, an improvement in student writing skills, an increase of authentic and purposeful use of technology...are some of the benefits of 1:1 technology integration programs like the AAL program." These programs in the 1980's and 1990°s paved the way for presidents, legislators, administrators, and educators to become aware of how positively technology could impact the student and teacher in the classroom, alike..

The Role of Educational Reform in Technology Development The role of technology in the world of education has been ever changing. Most recently, technology has been a new Phenomenon to help motivate, differentiate, and allow students to achieve and excel in ways that they have never been able to before. According to Johnson (2003), the computer and technology, if used correctly,

has-the ability to "invoke dream in the minds of visionary educators who saw endless potential for altering traditional notions of teaching and learning"

(p. 2). Two past presidents saw the need for fundamental change in education to keen American students in competition with technology with other students from around thy world. In 1994, President Bill Clinton signed The Goals 2000: Educate America Act (Goah, 2000: Educate America Act, 1994). There were many parts of this bill that involves technology and education. Part C of The Goals 2000: Educate America Act, Leadership in Technology,

The Benefits and Requirements of Technology Innovation Initiative

Shapley et al. (2011, p. 299) noted, "technology immersion had a positive effect on students' technology proficiency and frequency of their technology-based class activities and small. group interactions." With more and more emphasis being placed on student learning and achievement, schools are looking at making changes and immersing students and teachers with technology. With that, though, comes the ability and responsibility to train and uphold high standards of learning with both teachers and students. Mark Edwards, a superintendent in Mooresville, North Carolina, has successfully launched laptop initiatives in two school districts as acting superintendent. In this article, Edwards (2012) explains the excitement and energy factor that students have when learning due to technology being implemented.

Edwards continues and explains in Mooresville the school district has created a very handson approach and exploratory way of learning with their technology. Edwards describes how teachers feel that even though the technology is in place and they are seeing academic gains in the classroom, most of these teachers would say that teaching is not easier. If anything, implementing

Four Ways Technology has negatively Changed Education

As mentioned in earlier sections of our report, technology is radically changing the way we understand the learning process, defined by Wikipedia as the set of strategies people deploy in "acquiring new, or modifying existing, knowledge, behaviors, skills, values, of preferences." Computer-based instruction is now prevailing throughout the learning environments all over the world, reshaping minds and imposing new roles on both teachers and students. Thanks to the integration of technology in classroom environments, students are active, motived and eager to learn (Al-Hariri & Al-Hattami, 2007; Aloraini, 2012; Eyyam, & yaratan, 2014). They also assume greater responsibility for their learning (Johnson, Schwab, & Foa, 1999).

deterioration of Students' Competencies pespite the widespread that classroom technology generally improves students' academic achievement and enhances their motivation to accomplish their tasks (Al-Hariri & AJdattami, 2017; Bishop & Verleger, 2013; Clarke & Svanaes, 2014, Hafiler, Major. & Hennessy, 2015; Izadpanah & Alavi, 2016 amongst others), much reliance on technology seems to severely affect students' competencies in three skills that are of uncontested importance to them, namely reading, writing and arithmetic. Spitzer (2014) gives a full account of the risks of adopting technology in the classroom and warns against its potential negative effects on students' achievements. He cites literature affirming that handwriting and reading are impaired by typing and that Information Technology (IT) brings about shallow processing of information. That is why, students do not learn a lot from Google Books in the same fashion they do from printed books and magazines. Similarly, Carr (2011) accuses technology of causing our minds to be "shallow" and asserts that students who read linear texts have better understanding and a stronger memory than those who read Internet. He argues (2011, p. 90) that "The shift from paper to screen doesn't just change the way we navigate a piece of writing. The De-humanizing Effect of Technology While the use of technology has increased the quantity of information taught in a shorter time and has definitely made students able to visualize this information in a better way (e.g. via PowerPoint Presentations, maps and charts), the overreliance on technology in classrooms has a dehumanising effect. Kemp et al. (2015, p.4) announces that over the last decade

in particular, “teaching has been ripped from the realm of human endeavours and morphed into a technological leviathan that is slowly usurping the soul of the profession.” Technology and Isolation

One distinctive feature of face to face teaching is collectivism and collaboration whilst the most distinctive feature of technology-based teaching is the lack of any feeling of collectivism or togetherness. The psychoanalytic Theory defines isolation as a defence mechanism undertaken by the mind when individuals are caught in a context that they find threatening or unpleasant. That is why students who frequently use technology gradually develop a feeling of safety and security when “wired” to their gadgets, and start keeping away from all forms of social connections which may get them disconnected. In 2001, Paul &Brier coined the word “friend sickness” to refer to the isolation students feed when moving is college and leaving old school friendships behind.

Technology and the Gap between Social Classes

Another negative aspect of reliance on technology in education is the big gap that technology creates between the rich and the poor. Large differences between developed and developing countries are very clear in the infrastructure of schools. While schools in developed countries are provided with nearly all technological devices (PCS, laptops, tablets, projectors and Internet access), those in developing countries largely lack all these devices. Thus, students in developing countries graduate with limited basic technological skills (e.g., PC literacy) and face huge problems to find a well-paid job, or find it too difficult to compete in the global market. Even in developed countries, there is usually a digital divide (van Dijk & Hacker, 2011); that is, there is a big difference between students coming from different social backgrounds.

Theoretical Framework

Techno-Innovation Complexity Theory

Understanding technologies as complex systems means that one has to define its elements and their interactions. Let N be the number of elements in a system and i an index for each element

(i = 1,...,N).

For example, a car can be described by a number of elements including the engine, brakes, transmission, steering device, etc. To design a technological system, there is generally more than one option for each element.

Assuming (without loss of generality) that there are two options for each element, the total number of possible designs adds up to 2N . Thus, even for systems with a small number of elements, the total number of possible designs is large. The space (hypercube) of possible designs is called the design space of a technology.

Technological innovation can then be understood as a move of an agent (the designer) from its current location in the design space to a new location.

The NK-model

The landscape of fitness values, defining local and global optima, is dependent. on the interactions between elements what is called ‘epistatic relations’. The set, of epistatic relations between elements make up a certain structure, which we call here a technology’s architecture.

Architectures range in complexity from fully decomposable architectures (no epistasis) to fully epistatic architectures (each element affects all other elements). Kauffman (1993) stricted his analysis to particular types of architectures, the complexity of which can be expressed in a single parameter. In his model, he used only those architectures in which each element is epistatically affected by the same number of other elements. The number of elements by which each element is affected, is indicated by parameter K. These so-called NK-systems’ are then defined as systems

with N elements in which each element is affected by K other elements.3 Kauffman's (1993) NK-model simulates the effects of epistasis by constructing a fitness landscape, a concept introduced by Wright (1932) in biological theory. jn the context of technology, fitness landscapes can be taken to refer to efficiency (for production processes) or quality (for products). In a fitness landscape, each string in design space is assigned fitness value.

RESEARCH METHODOLOGY a. METHODOLOGY APPLIED

The case study adopted a descriptive survey method; this method was selected in order to enhance the sampling of opinions' from the people. Federal university Lokoja Kogi State Nigeria was used as proxy for the study and the SPSS econometric package and chi-square was utilized in the analysis of the study, student's performance was decomposed into 3 different variables, such as, academic performance of students in the federal university Lokoja Kogi State Nigeria, the students moral standards in the federal university Lokoja Kogi State Nigeria and crime rate in the 21st century universities in Nigeria. The researcher tries to relates the the above variables vis-avis the 21st century technological innovation among the students in the Nigeria federal universities. A total of 5000 staff working together in the federal university Lokoja was adopted as the target population of the study, since it is not possible to use the whole target population, Taro Yamane's formula of 1965 was used to calculate the sample size as a fair representation of the study scientifically,

n = N/(1+(e)" The formula enabled the investigator to arrive at 500 number of sample size which was divided among the respondents using qualitative sampling techniques.

Due to relatively large and very expensive cost of using aggregated information of entire Population, a purposive sample is necessary in order to give fair representation of the entire Population to study.

In determining the sample size a special consideration is made as to how the whole population can be fairly represented in the result.

Data were collected from two main sources namely:

(i) Primary source and

(ii) Secondary source

Findings

1. Technological innovations negatively impact the academic performance of students in the federal university Lokoja Kogi State Nigeria.
2. Technological innovations dwindled the students' moral standards in the federal university Lokoja Kogi State Nigeria.
3. Technological innovations increases crime rate among the students, many tricks of crime are introduced through the 21" century digital age Conclusion and Recommendations

The deterioration of the students' competencies is via technological innovation, the exchange of human beings to machines thereby leading to the dehumanizing effects of techno innovation, the isolation state crated by technology, the disparity among the social classes thereby widening the gap between the poor and the rich, the moral decay in the 21st century digital age, the serious increase in crimes/banditry etc is via the recent technology which served as navigators to the students.

It is recommended that since the technological innovation exerted a negative influence on the students performance in the school, serious precautions ought to be taken by the government concerning the use of computers in the schools.

REFFERENCES

1. Algerioy, A. M. (1999). The impact of multimedia on the collection of first-grade students in secondary mathematics in Riyadh Journal of King Saud University - Languages and Translation, 24 (2), 75-82 ”
2. Al-Hariri, M., & Al-Hattami, A. (2017). Impact of students’ use of technology on their learning achievements in physiology courses at the University of Dammam. Journal of Taibah University Medical Sciences, 12(1), 82-85.
3. Alhusban, A. M. (2016). The Impact of Modern Technological Tools on Students’ Writing Skills in English as a Second Language. US-China Education Review, 6 (7), 438-443.
4. Aloraini S. (2012). The impact of using multimedia on students’ academic achievement ir the College of Education at King Saud University. Journal of King Saud University, Languages and Translation, 75-82.
5. Ascione L. (2018). Do other countries value classroom technology equally? Available: https://www.eschoolnews.com/2018/12/04/do-other-countries-value-classroomtechnology-equally/ (July 2, 2019).
6. Bahloul, M. (2012). Lights! Camera! Action and the Brain: The Use of Film in Education. Newcastle upon Tyne: Cambridge Scholars Publishing.
7. Bishop, J., & Verleger, M. (2013). The flipped classroom: A survey of the research. 120th ASEE National Conference Proceedings, 30, pp. 1-8.
8. Atlanta, GA. Bronowicki, K. A. (2014). Technology's adverse effects on students' writing: An emphasis on formal writing is needed in an academic curriculum. Master's Thesis: State University of New York.
9. Available:https:/ digitalcommons. brockport.edu/cgi/viewcontent.cgi?referer=https:// www. google.com.eg/&h ttpsredir=I &article=1399&context=ehd_theses
10. Carr, N. (2011). The Shallows: What the Internet Is Doing to Our Brains. New York: W. W. Norton & Company.
11. Carstens, A. & Beck, J. (2005). Get Ready for the Gamer Generation. Tech Trends: Linking Research & Practice to Improve Learning, 49(3), 22-25.
12. Carter, S. P., Greenberg, K. & Walker, W. S. (2017). Should Professors Ban Laptops? Education Next, 17(4), 68-74.
13. Cazan, A., Cocoradd, E., & Maican, C. (2016). Computer anxiety and attitudes towards the computer and the internet with Romanian high-school and university students. Computers in Human Behavior, 55, 258-267.
14. Christensen, K. S. (1999). A Comparison of Student Performance in Human Development Classes Using Three Different Modes of Delivery: Online, Face-to-Face, and Combined. Department of Education: Drake University.
15. Clarke, B., & Svanaes, S. (2014). An updated literature review on the use of tablets in education. Tablets for Schools. UK: Family Kids & Youth.