The Impact of Technophobia on Technology Acceptance among Undergraduates in University of Port Harcourt in the Post Covid-19 Era

Edache-Abah, Odachi. Felicia Ph.D.
Faculty of Education, Department of Science Education
University of Port-Harcourt. Rivers State.
felicia.edache-abah@uniport.edu.ng ; 0803 526 5486

&

Amuji, Chinenye Gertrude.
Faculty of Education, Department of Science Education
University of Port-Harcourt. Rivers State.
nenyegebby@gmail.com

Abstract

This research examined the Impacts of Technophobi on technology acceptance among undergraduate students in the University of Port Harcourt, River State. The research design was a descriptive survey. Three (3) research questions and three (3) hypotheses guided the study, and tested using t-test at 0.05 level of significance. The population of the study comprised of 1200 students from 2 Departments, one each Faculty of Education and Faculty of Science. A random sampling technique was used and a total number of 500 students were sampled. A self-structured questionnaire titled "Questionnaire on the Impact of Technophobia, and Techno-Acceptance on Students Performance (QITTASP)" and a Checklist were used as the instrument for data collection which were structured to answer the research questions, which were randomly administered to students, 200 questionnaires were retrieved.. Data collected were analyzed using percentage and mean as the major statistical tools for this study. The findings showed that 95% of the respondents agreed that on the contrary to technophobia, they enjoy teaching and learning styles that allows them surf the internet while learning is going on.. Result from the table also revealed that the researcher's perceptions about not wanting the use of technology in the teaching and learning of chemistry because they have little or no knowledge about technology with 70% of the response reacting to the NO objection, showed that, a significant majority of the students agreed that there can achieve their academic purpose without using technology due to the high cost, lack of literate teachers. Result of the hypothesis shows that there is no significant difference in the prevalence of technophobia among the undergraduate chemistry students, Hypothesis 2 shows there.is a significant difference in the factors that contribute to technophobia since the calculated t-value is greater than tabulated value of t. In addition to the above findings, lack of internet access, epileptic power supply, inadequate number of digital literate instructors/teachers, lack of well computer laboratories, science practical laboratories and among others were challenges faced. It was therefore, recommended that the government and its agencies should allocate sufficient funds towards purchasing quality and adequate number of technology devices for schools.

Keyword: Impact, Technophobia, Technology Acceptance, Undergraduate Students, Post-Covid 19 Era

Introduction

Education has remained the bedrock of any nation being an instrument for national transformation and development. In this regard, (Etejere and Ogundele 2008) asserted that a

country that toys with the education of her citizens is going to experience dwindled development and will invariably be ranked low among the developed nations of the world. Issues surrounding digital learning in the educational sector have received extensive attention globally especially in the Post COVID-19 era, (Aseel Ajlouni & Saleh Rawadieh 2022). This raised a global concern and necessitated the adoption of digital learning since the COVID-19 has come to stay.

The Government is working hard to build and encourage the development, utilization and sustenance of the ICT manpower required to achieve a Technology-enhanced education and Restructure the environment for teaching and learning as well as education administration for continuous and mandatory professional development of core Technology. The use of technology in teaching generally aims to have students actively participate in learning activity to achieve the set learning outcome (Tofan, I., & Aivaz, K. A. 2022). Nigerian educational sector has been embracing changes in terms of ICT application in the learning process as far back as before the Nigerian independence in 1980 (Ajadi, Salawu. & Adeoye, 2008).

In this digital age, being digital literate means being able to create your own web page, blog or wiki, using mobile devices effectively such as tablet laptops, or cell phones; connect to friends via Facebook, Twitter or other social networks; communicate with your colleagues all over the world simultaneously and instantaneously (Iivari, N., Sharma, S., & Ventä-Olkkonen, L. 2020). All these creations are made possible with digital tools. Education systems cannot be oblivious to these changes in this digital age because at the same time technology has affected people's learning styles. In practice, digital technologies provide new teaching and learning environments and "trigger a different kind of relationship between the teachers, the learners, and what is being learnt (Solberg, E., Traavik, L. E., & Wong, S. I. 2020).). For example, concepts such as online learning, e-learning computer-based instruction, virtual education, multimedia learning, and web/internet-based training are related to digital learning, and they all are digital tools.

Technophobia also known as technofear, is the fear or dislike for advanced technology or complex devices, it extends beyond the boundaries of one country as it is a behavior toward technology issue, in other words, technophobia coexists with technology regardless of physical location. Many studies have examined technophobia in countries like Iran (Sunita Jain 2017): Technophobia closely relates to computer anxiety, but it is distinct from it. Computer anxiety is associated with interacting with computers, while technophobia is a broader concept related to modern or new technologies, not just computers (Martínez-Córcoles et al., 2017). So far, several measures have been developed to evaluate specific

technology influences, such as computer anxiety and negative attitude toward robots (Nomura et al., 2006). Nevertheless, few technophobia measures have been developed. Some are based on the etymology of technophobia (MartínezCórcoles et al., 2017). Approximately 30% of people globally experience technophobia (Subero-Navarro, PelegrínBorondo, Reinares-Lara, & Olarte-Pascual, 2022), and this percentage is expected to rise with the rapid continuous development of technology. It hinders technology integration across all industries; for example, it prevents academic staff from effectively employing information and communication technology (ICT) in the instructional process (Ahmad et al., 2014) and influences employees' usage of new technology, playing a vital role in an organization's success (Show-Hui & Wen-Kai, 2010).

The sudden outbreak of the deadly and a highly contagious virus called COVID-19 overwhelmed the entire world such that World Health Organization (WHO) declared it a public health emergency of international concern (Anake, Aloye, Achuen, & Egbe, 2020). The educational sector was largely affected as the imposition of lockdown became prominent in containing the virus. Educational institutions (schools, colleges and universities) were forcefully closed which has a lot of negative effects on the students such as a detrimental effect on academic performance and the entire sector. Hence, this paved way for the need to continue education through digital modalities. the emergence of COVID-19 affected every area of human endeavor including education. Earlier studies identified potential barriers to effective post COVID-19 digital formative assessment in universities. Some of which are teachers and students unfamiliarity with digital technology and online assessment, lack of policy leadership to guide the use of digitalized assessment in Nigerian universities particularly, in formative assessment. COVID-19 is a menace that has bedeviled and ravaged the world in many ways. It has retarded the economy, ravaged health system, destroyed hospitality business, and disrupted socio-political interaction and now, inducing an unannounced shift away from the traditional classroom settings in the educational sector.

Due to the effect of Covid 19 pandemic, digital learning is met with increasing attention as educational institutions alternatively resorted to various technology modalities and strategies to provide teaching and learning. Today education and technology have become inseparable in our world as information and communication technology are actively used in educational sectors to help build and mold effective learners into becoming digital literate in their career opportunities. Despite all the efforts put in place, some students still have this phobia for learning with technology and that is why the researcher sort to find out the impact of

technophobia, technology acceptance in the post Covid era among undergraduate students of the University of Port Harcourt.

Statement of the problem

The COVID-19 further exposed the worsening educational system in Nigeria and provided the need to improve on the system which serves as the only panacea to the Post covid 19 Era. Nigeria must rise to the challenge of incorporating "technology" into education to improve on digital literacy among learners. Technology in education has created innovative instructional materials and teaching methods such as Virtual classrooms, Virtual Laboratory, Individualized Instruction, Instructional games, among others, thus, giving the learner an opportunity to learn at his / her own pace. The question remains "are science students in Faculty of science and Education, University of Port Harcourt able to understand the benefits of technology in education revolution in their academic advantage? The purpose of this study therefore, is to find out the impact of technophobia and technology acceptance among chemistry students of university of Port Harcourt, River State

Research Objectives

1. To investigate the prevalence of technophobia among the Science students in the University of Port Harcourt in the post Covid-19 era.
2. To explore the factors that contribute to technophobia, among the undergraduate Science students of the University of Port Harcourt in the post Covid-19 era.
3. To examine the impact of technophobia and technology acceptance among the undergraduate chemistry students of the University of Port Harcourt in the post Covid-19 era.

Research Questions

1 What is the prevalence of technophobia among the among the undergraduate Science students of the University of Port Harcourt in the post Covid-19 era?

2 What are the factors that contribute to technophobia among the undergraduate Science students of the University of Port Harcourt in the post-Covid 19 era?

3 How does technophobia affect the student's willingness to adopt and use new technologies in the post Covid 19 era?

Research Hypothesis

1. There's no significant difference in the prevalence of Technophobia among Science Students from Faculty of Science and Faculty of Education in the Post-Covid 19 era.

2. There's no significant difference in the factors that contribute to technophobia among the undergraduate Science Students of Faculty of Science and Faculty of Education in the University of Port Harcourt in the Post-Covid 19 era?
3. **:** There's no significant difference in the level of student's willingness to adopt and use new technologies between Science Students of Faculty of Science and Faculty of Education in the Post-Covid 19 era

Methodology

This is a quantitative study. A self-report survey is used to measure technophobia among the students. The population of the study comprises of all the final year students in the Faculty of Science and Education to be precise, in University of Port Harcourt, River State, a simple random sampling was used and a total number of 500 questionnaires were randomly administered to students and only 200 questionnaires were returned, therefore the sample size for this study is 200. A primary data was collected from a large sample of students, which allows us to generalize the findings from the opinions of people in a broader population, that guided the researcher in making decisions and establish a baseline for future reference. A self-structured questionnaire titled "Questionnaire on the Impact of Technophobia and Techno-Acceptance on Students Performance (QITTASP) and a Checklist were the major instruments used for data collection in this study. The questionnaire items are structured to answer the research questions. Data were collected and analyzed using the mean and percentage as the statistical tools to answer research questions, while t-test was used to test the hypothesis at 0.5 level of significant.

Results and Findings

The research findings were presented based on the study objectives. The quantitative data was analyzed using descriptive statistics. Descriptive statistics was used to describe the views of the respondents on each subscale.

Research Question 1: What is the prevalence of technophobia among the undergraduate Science students of the University of Port Harcourt in the post Covid-19 era?

Table 1: Percentage responses of the prevalence of technophobia undergraduate Science students of the University of Port Harcourt in the post Covid-19 era

S/N	ITEMS	YES	NO	REMARK
1	How comfortable are you with using new technologies?	67%	33%	
2	Do you feel like you have adequate knowledge about new technologies?	90%	10%	
3	Students do not enjoy teaching and learning styles that require them to surf the internet while teaching is going on	95%	5%	
4	Do you feel that new technologies make your life easier?	79%	21%	
5	Do you feel that new technologies improve your productivity?	67%	33%	
6	Do you feel that new technologies make your life more enjoyable?	86%	14%	
7	Do you feel that new technologies make you more efficient?	74%	26%	
8	Do you feel that new technologies are easy to learn and use?	90%	10%	
9	Do you feel that new technologies are worth the time and effort required to learn and use them?	58%	42%	
10	The reason why students do not like the use of technology in teaching and learning of chemistry is because they don't have knowledge about technology	30%	70%	Withdrawn

Above Average percentage of YES responses 73.6%

Below Average percentage of NO responses 26.4%

The data in the table indicated that, 95% of the respondents agreed that on the contrary to technophobia, they enjoy teaching and learning styles that allows them surf the internet while learning is going on. it also shows that 90% agreed to the fact that it is easier to learn and use new technological tools. Result from the table again debunk the researcher's perceptions about not wanting the use of technology in the teaching and learning of chemistry because they have little or no knowledge about technology with 70% of the response reacting to the NO objection.

Research Question 2: What are the factors that contribute to technophobia among the undergraduate Science students of the University of Port Harcourt in the post-Covid 19 era?

Table 2: Mean response of students on the main factors that contribute to technophobia among undergraduate Science students of the University of Port Harcourt in the post-Covid 19 era

S/N	Items	SA(4)	A(3)	D(2)	SD(1)	MEAN	S.D	Decision
1	Individual factor, (example: personal, emotional, mental and behavioral patterns. Influence students' willingness to technology	80	56	46	18	2.25	3.68	Agreed
2	Societal factors (individual's amount of anxiety toward foreign culture, peer pressure and lack of capital) causes lack of interest	76	70	36	18	2.1	3.46	Agreed
3	Lack of infrastructure affects students learning abilities	86	60	34	20	2.66	2.4	Disagreed
4	Lack of experience teachers affects students learning abilities	80	56	52	12	2.26	3.68	Agreed
5	Cost-effective nature of technological devices and maintaining incur a lot of expenditure	80	80	26	14	3.13	2.73	Agreed
6	Lack of innovations	86	79	22	13	1.87	2.5	Agreed
7	Poor management influence students' willingness to technology and epileptic power supply	70	49	59	22	2.35	2.16	Disagreed
8	Geographic feature affects students' willingness to technology and educational level of students.	114	46	23	17	1.83	2.64	Agreed
9	Students previous experience with technology affect the learning abilities	110	45	44	1	2.35	3.82	Agreed
10	Age and gender influence students' willingness to technology	10	33	65	92	2.39	0.39	Disagreed

Average Mean= 3.20

From the result above, students agreed that factors that contribute to the level of technophobia among students could be personal, social factor, lack of experience teachers, cost effective nature of technological devices, maintenance, lack of innovation, students' prior knowledge of technology among others but strongly disagreed to the fact that factors such as age, gender, poor management, lack of technological gadgets causes students to lose interest in the use of technology. Result also showed that, these digital tools are out of reach for students in the University of Port Harcourt. The strength and weakness of students in a

particular subject can be determined with these digital tools as it serves as a means of formative and diagnostic evaluation using Computer Based Testing (CBT)

Research Question 3: How does technophobia affect the student's willingness to adopt and use new technologies in the post Covid 19 era?

Table 3: Mean response of students on their level of willingness to adopt and use new technologies in the post Covid 19 era?

S/N	ITEMS	SA(4)	A(3)	D(2)	SD(1)	MEAN	S.D	Remark
1	Do students prefer submitting assignment online or prefer to submit hard copy?	110	45	44	1	2.35	3.68	
2	Do students perform better when subjected to computer based test?	13	22	49	116	1.79	2.47	
3	Would you prefer that your lecturers adopt blended learning teaching method?	45	50	50	55	2.73	2.22	
4	Do people perceive new technologies more difficult to use?	86	79	15	11	2.0	2.64	
5	Are students with higher levels of technophobia less likely to try out new technologies?	107	50	49	30	1.75	2.23	
6	Do students with higher levels of technophobia have a more negative attitude towards new technologies?	83	66	0	14	2.16	2.25	
7	Do you have a greater fear of the consequences of using new technologies?	92	68	30	10	1.92	2.92	
8	Do you feel less in control when using new technologies?	81	52	50	12	1.98	2.84	
9	Do you feel more anxious when using new technologies?	90	70	26	14	3.13	2.73	
10	Do you think these questions are relevant to researcher? Do you think they will help you better	86	65	43	6	2.09	3.07	Agreed

Average Mean= 3.22

From the result above, students will prefer to submit assignment online than submit hardcopy, but doubt if students will perform better when subjected to computer based test.

Never the less, they all have different opinion as regards the adoption of Blended learning styles. This could be because they perceived that new technologies will more or less be difficult to learn and use, and so wouldn't want to try.

The result also shows that it will actually take time for students to adapt to the new blended learning styles in this post covid-19 era, it needs gradual orientation and sensitization.

Decisions: administrators should encourage and empower students to take charge of their learning and have revolution in students' technological capacities to communicate. It is also particularly interesting to note that learners with a high affinity for technology perform significantly worse in traditional forms of instruction such as a lecture than in technology enhanced instruction.

Research hypothesis

Hypothesis 1: There's no significant difference in the prevalence of Technophobia among Chemistry Students from Faculty of Science and Faculty of Education in the Post-Covid 19 era

Table 4 T-test for hypotheses testing.

S/N	Variables	N	M	SD	T-cal	T-crit	df	P.	DECISION
1.	Faculty of Science students	100	2.00	1.02	1.51	1.97	198	0.05	Accepted
2.	Faculty of Education student	100	1.70	1.62					

Table 4 shows that the calculated t-value of 1.52 for Faculty of science students and Faculty of Education Students was less than the critical t-value of 1.97 at 0.05 significant level. So the null hypothesis is accepted. Thus, no significant relationship between Faculty of science students and Faculty of Education Students

Hypothesis 2: There's no significant difference in main factors that contribute to technophobia among the undergraduate Science Students of Faculty of Science and Faculty of Education in the University of Port Harcourt in the Post-Covid 19 era?

Table 5 T-test for hypotheses testing.

S/N	Variables	N	M	SD	T-cal	T-tab	df	P.	Decision
1.	Faculty of science students	100	2.48	3.19	2.50	1.97	198	0.06	Rejected
2.	Faculty of Education students	100	2.26	2.10					

Table 6 shows that the calculated t-value of 2.50 for Faculty of science students and Faculty of Education Students was more than the critical t-value of 1.97 at 0.05 significant level. So the null hypothesis is rejected. Thus, there is a significant relationship between main factors that contribute to technophobia among the undergraduate Science Students of Faculty of Science and Faculty of Education in the University of Port Harcourt in the Post-Covid 19 era.

Hypothesis 3: There's no significant difference in the level of student's willingness to adopt and use new technologies between Science Students of Faculty of Science and Faculty of Education in the Post-Covid 19 era

Table 6-test for hypotheses testing.

S/N	Variables	N	M	SD	T-cal	T-tab	Df	P.	Decision
1.	Faculty of science students	100	2.12	2.65	1.47	1.97	198	0.05	Accepted
2.	Faculty of Education Students	100	2.25	2.76					

Table 4.6 shows that the calculated t-value of -1.47 for Faculty of science students and Faculty of Education Students was less than the critical t-value of 1.97 at 0.05 significant level. So the null hypothesis is accepted. Thus, there is no significant relationship between Faculty of science students and Faculty of Education Students.

Summary of findings

The discussion of the findings of this study centers on the result of the data analyzed in the study. From the data collected and analyzed in table 4.1, the result reveals that 95% of the are respondents agreed that on the contrary to technophobia, they enjoy teaching and learning styles that allows them surf the internet while learning is going on. The table also shows that 90% agreed to the fact that it is easier to learn and use new technological tools. Result from the table again debunk the researcher's perceptions about not wanting the use of technology in the teaching and learning of chemistry because they have little or no knowledge about technology with 70% of the response reacting to the NO objection

Based on the analysis and discussion; 34% of the respondents own or have access to a digital tool(s) while 66% have little or no access to one at all. The availability of digital tools such as computers, laptop, smart phones, the technical knowledge and right use of digital tools have a positive influence on the academic performance of students. It is also revealed that, wrong use of these digital tools can stall or have a negative influence on student's academic

performance. Furthermore, the right use of this digital tools can help the students to information and media literates and attain digital citizenship.

This finding is in consonance with the submission of Jobe and Peck (2008) who maintained from their study that the use of digital tools in the instruction processes provides students with opportunity to acquire technological skills, develop critical thinking, problem solving and communication skills. They also stated that these tools help students engage in hands-on learning activities and receive immediate feedback. Similar results were obtained by Usman, N. H., Alavi, M., & Shafeq, S. M. (2014). The findings also shows that students who exhibit higher levels of technology affinity tend to embrace technology and are positive about interacting with technology. Students have the ability to access information and resources anytime, anywhere. Also, the use of technology during whole-class instruction can foster student engagement for auditory and visual learners.

Recommendations

Based on these research findings, the following recommendations are hereby put forward:

1. The government should allocate more fund the educational sector, especially in the University and other facilities in the institution, so as, to enable them to acquire these digital tools and ensure that digital tools are actively used or incorporated in the teaching and learning processes.
2. Information Technologists, teachers and parents should help student manage digital distractions. It is true that digital tools and online resources have made learning more effective in many ways, but they have also brought new distractions s with them. Research shows that many students struggle with digital tools which can make them feel distant and drained. So, the ability to manage distraction while utilizing digital tools for educational purposes is a digital literacy skill that is of utmost important and shouldn't be overlooked.
3. The Universities and Ministry of education should encourage in-service training of teachers, administrators and mangers and make sure they enroll and participate in trainings, workshops and seminars on how to harness and use digital technology in their lessons.

Conclusion

Technology literacy and digital tools plays a crucial role in the teaching and learning processes of this modern era or technology-driven world, this enables students to communicate effectively with their peers and teachers through online platforms. Students are provided with better access to information, enhanced creativity and critical thinking and

problem solving in their academic performance by engaging in online platforms and carrying out laboratory experiments using the online laboratory and subsequently apply what they have learned in real life situation thereby their relationship with technology, is s influenced by general attitudes toward technologies, among other factors.

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