
Planning for the Use of Technology in the Education Sector

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ABSTRACT

Traditional teaching environment is becoming obsolete and boring to the present-day students. The reason for this feeling stems from the fact that more engaging and entertaining contents are available and only a click away. The classes also are getting more populated, with many students in developing countries desiring to have certificates and not intending to pursue a career in the field. The researcher proposes a hybrid teaching system, with technology employed in the demonstration and interaction of complex courses. This paper is a part of the preparatory for a technology teaching project. Qualitative analysis is employed to determine the impact of students' gender and field of study on their acceptance of complex technology in teaching. To test for these, a questionnaire is administered and the responses coded and analyzed. The results show that gender has impact on the students' acceptance of technology and field of study has relationship with the students' acceptance of technology in learning. This work contributes to the body of knowledge by providing insight in the planning of education as well as in policy making. Details of the result are presented in the result and discussion section.

Keywords: Education, Planning, Technology in Education, Education Policy

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1. INTRODUCTION

Sequel to UN identification of quality education as the foundation of the success of many other goals, the researcher delved into studying the reason behind the retrogression in the Nigerian SDG. 4 dashboard. Digitization has become expedient and the education sector has seen great advancement following the deployment of various technology-based learning tools. The readiness of Nigerian students to welcome this trend was conducted and the result shows that majority of the students are not only ready to embrace this trend, but ask that it should be fully incorporated into their learning style. Inclusion of technology in existing learning pattern allows the students to have a wider view of the concept under discussion, be able to adopt new problem-solving approaches and preferences.

Technology-based learning can be embraced in different ways: competency-based, student-created content, blended system, problem-solving, active learning (Olebara C.C & Michael Nwanyibuaku, 2018), flipped learning, or collaborative learning.

2. LITERATURE REVIEW

Al-A'Ali(2008) presented a research on the use of software technology and web-based learning to teach mathematics to 13 year old boys. They assessed the expected improvements in learning outcome of the students and the expected improvement in teachers' productivity, experience and qualifications such as enhanced problem solving and grades of the students. In another study, Robson et al (2013) presented a methodology developed by members of the research centre for learning and teaching (RCfLAT) which sought to collaborate with teaching colleagues to produce case studies of innovations in teaching and learning. Similarly, (Xu & Liu, 2009) proposed an experiment where they employed the use of cognitive sense organs for cognitive psychology in seeing, touching and hearing to form long term memory of the activities.

Wang et al(2020) demonstrated the effectiveness of computer in education by conducting a research that tries to describe the modern day innovation in teaching of undergraduates, with college students outperforming their teachers in innovation, the authors compared the rate of internet penetration to the use of internet in competition. For students sponsored in the Chinese government. (Martin & Noonan, 2010) in their work presented the synchronous deployment of some interactive technologies in online teaching. The technologies: PolyCom, PVX, Horizon, Wimba virtual classroom, MediaSite, SharedView and Skype. They advocate the adoption of these technologies by educators so as to maintain interaction in and out of classroom. In Mo (2011), the use of technology brings the teacher's leading role to the fore and also gives the student ability to explore. Hsu (2010) found that the use of Science, Technology and Society TAM (STS TAM) framework in applying technology to electronic teaching environment and providing assessment model results in better planning and learning outcomes.

3. METHODOLOGY

Research Purpose and Design

This paper draws from the result of a study to investigate the acceptance of visual technologies in teaching. The result gives insight into proffering solution to the challenge of poor quality of education in rural areas of Nigeria.

Sampling Technique

Convenience sampling technique was employed in selecting the survey sample for ease of use and cost effectiveness. A total of 524 responses were received and subjected to statistical analysis. Data captured respondents in the arts and sciences study fields.

Research Model

The dependent variable is visual learning acceptance while the independent variables are gender and field of study. Various variables contributed to the dependent variable. Acceptance of technology-based learning was tested with the standard proposed in Technology Acceptance Model [2] with multi-item questions to assess user feelings towards the new technology's perceived ease of use, usefulness, users' attitude towards using the technology, and actual use of the technology.

Research Hypothesis

Two null hypotheses were formulated as follows:

H₀: Gender of students does not have significant effect on their visualized learning acceptance level

H₀: Field of study of students does not have significant effect on their visualized learning acceptance level.

Testing the hypotheses will be a means of providing answers to the research questions.

3. DATA ANALYSIS

This research used a questionnaire that allowed the researcher to collect information on the independent and dependent variables. Section A was used to collect demographic information, section B was used for collecting user perceptions while section c was used to collect information on user reaction towards the technology. Responses were coded and subsequently exported to SPSS analytical software.

4. RESULT AND DISCUSSION

The output from the data analysis will be discussed in this section. The demographic data is presented in table 1 below. The distributions are based on the 524 responses received. In the age variable, those in the first category: 16-18 years, had a distribution of 10(1.9%). The second category captured those between the ages of 19-21, with a distribution of

Table 1: Demographics

Age	Frequency	Percentage
16-18	10	1.9
19-21	246	47.0
22 and Above	268	51.1
Gender		
Male	216	41.2
Female	308	58.8
Field of Study		
Arts	236	45.0
Science	288	55.0

246 (47%). While group 3 captured respondents who are 22 years and above, with a distribution of 268(51.1%). Gender had a distribution of 216(41.2%) for male and 308(58.8%) for female while students' field of study had a distribution of 236(45%) for Arts field of study and 288(55%) for Sciences field of study. These are presented in table 1 below:

Study Field and Visual Learning Acceptance

Chi square tests were conducted to find out the effect of the students' field of study on their level of Visual Learning acceptance. From table 2 below, disparity between the observed counts and the expected counts were noted. In Arts field of study, a count of 75(14.3%) was observed for respondents who have low visual learning acceptance score with an expected count of 88.7 whereas 161(30.7%) in this category showed high visual learning acceptance against expected count of 147.3(approximately 147). The second study field is Sciences. In this category, observed counts of 122(23.3%) were observed for respondents who have low visual learning acceptance score against expected count of 108.3, whereas 166 (31.7%) counts were observed for respondents with high visual learning acceptance score in this category against expected count of 179.7.2(approximately 180).

Table 2: Study Field and Categorized ATVL Score

Field of Study		Categorized ATVL Score		
		Low	High	Total
Arts	Count	75	161	236
	Expected Count	88.7	147.3	236.0
	% of Total	14.3%	30.7%	45.0%
Sciences	Count	122	166	246
	Expected Count	108.3	179.7	246.0
	% of Total	23.3%	31.7%	46.9%
Total	Count	197	327	524
	Expected Count	197.0	327.0	524.0
	% of Total	37.6%	62.4%	100.0%

a. 0 cell (0.0%) have expected count less than 5. The minimum expected count is 88.73

There is disparity between Expected counts and Observed counts. This means that there is an association between study field and technological learning.

Gender and Visual Learning Acceptance Table 4:

Gender and Categorized ATVL Score

Field of Study		Categorized ATVL Score		
		Low	High	Total
Male	Count	90	126	216
	Expected Count	81.2	134.8	216.0
	% of Total	17.2%	24.0%	41.2%
Female	Count	107	166	308
	Expected Count	115.8	179.7	308.0
	% of Total	20.4%	31.7%	58.8%
Total	Count	197	327	524
	Expected Count	197.0	327.0	524.0
	% of Total	37.6%	62.4%	100.0%

Chi square tests were conducted to find out the effect of the age of respondents on their level of Visual Learning acceptance. From table 4 above, disparity between the observed counts and the expected counts were noted. In Male gender category, a count of 90(17.2%) was observed for respondents who have low visual learning acceptance score with an expected count of 81.2 whereas 126(24.0%) in this category showed high visual learning acceptance against expected count of 134.8(approximately 135). The Female gender on the other hand, had observed counts of 107(20.4%) for respondents who have low visual learning acceptance score against expected count of 115.8(approximately 116), whereas 201 (38.4%) counts were observed for respondents with high visual learning acceptance score in this category against expected count of 192.2(approximately 190).

0 cell (0%) have expected count less than 5. The minimum expected count is 81.21

There is disparity between Expected counts and Observed counts. This means that there is an association between Gender and technological learning.

5. CONCLUSION

We conclude that Gender and field of study have relationship with students' acceptance of technology in learning.

6. CONTRIBUTION OF THE STUDY

This study will serve as insight in planning for technology-based learning in the modern education system.

Endnote/Copyright Note

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