

Developing the Computer Skills of Upper Basic Secondary School Students for Excellent Performance in Jamb Computer Based Test in Enugu State, Nigeria

Dr. Nwokike FO^{1*}, Prof. S.G.N. Eze²

¹Department of Technology and Vocational Education (Business Education Unit) Enugu State University of Science and Technology Nigeria

²Department of Physical and Health Education Enugu State University of Science and Technology Nigeria

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*Corresponding author: Dr. Nwokike FO

Abstract

Original Research Article

JAMB CBT brought anxiety to many secondary school students in Nigeria because some of them are not computer literate. This study entitled developing the computer skills of upper basic secondary school students was carried out in Enugu State of Nigeria. Descriptive survey research design was adopted for the study. The population for the study comprised 197 computer studies teachers teaching in public secondary schools in Enugu State. Two research questions and two null hypotheses were utilized for the study. The instrument used for the research was a structured questionnaire developed by the researchers which was carefully validated by research experts from the institution of the researchers. Data collected in respect of the study were analyzed using mean and standard deviation to answer the research questions while t-test hypothesis was used to test the hypotheses at 0.05 level of significance and at the appropriate degree of freedom. The result of the study revealed that upper basic secondary school students in Enugu State need computer literacy skills especially the ability to manipulate the key board for excellent performance in JAMB CBT. The study equally revealed that one of the strategies for developing the computer skills of upper basic secondary school students in Enugu State is effective utilization of computer in preparing the students for CBT. Based on the findings and conclusion of the study, the researchers recommended among others that computer studies teachers should be re-trained on CBT and also, CBT centers should be established in all the public secondary schools in Enugu State of Nigeria.

Key words: JAMB, CBT, Upper basic students and computer studies.

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INTRODUCTION

Joint admission and matriculation Board (JAMB) is an examination body established in 1978 by Act No. 2 of 1978 to conduct unified tertiary Matriculation Examination (UTME). UTME is an examination taken by candidates who want to gain admission into Nigerian Universities, Polytechnics and Colleges of Education.

The main function of JAMB is to conduct entrance examination into tertiary institutions. Between 1978 to 2012, JAMB has been conducting its national examination. Their mode of examination within this period was paper and pencil test (PPT). This examination was usually conducted smoothly until when the examination malpractice reached an alarming rate. In an attempt to curb examination malpractice, Dibu [1] announced the writing of UTME with Computer Based Test (CBT).

Computer based testing is also known as computer based assessment or e-exam. Computer based test is the use of computer in writing and scoring an examination. The testing is done in person in a computer at an approved CBT centre. In the view of Oisen [2], Computer based test is an assessment that are administered by computer in either stand alone or networked configuration or by other technology devices linked to the internet or the World Wide Web. Abubarka and Adesayo [3] noted that there has been a growing concern about the conduct, authenticity and reliability of examinations especially during the process of selecting qualified, prospective candidates into Nigeria Universities. This could be the reason JAMB introduced the CBT with the objective of eliminating all forms of examination malpractice and promoting electronic testing.

Bill and David [4] identified two types of computer based testing. The most familiar type is where

candidates fill in their responses on a paper form which is fed into a computer optical mark reader. The computer reads the form, scores the paper and may likely report on the test reliability. The second type of computer based testing is where the computers provide an assessment interface for students; they put their answers and receive feedback via computer.

Dayo and Tara [5] identified two key advantages of CBT to include

- It will eliminate the attainment of higher degree computer literacy by potential undergraduate of Nigerian Universities.
- It will equally reduce to the barest minimum, case of examination malpractice on the conduct of UMTE.

Notwithstanding, despite the up streams of JAMB CBT, it has also its own down streams such as irregular supply, malfunctional computers, sudden shutdown of computers, low level of ICT illiteracy potential of UTME candidates and double option answers. In order to train Nigerian undergraduates for an ICT dominated 21st century, Upper basic level students need to be encouraged to take advantage of University education in Nigeria and be prepared for digitalized economy through developing their computer literacy skills before they obtain form for UTME. That is to say, catch them young at the upper basic education level. Developing according to Hornby [4] means making somebody to grow gradually. Developing in the context of this study means upgrading, building and training the upper basic secondary school students in computer literacy skills for excellent performance in JAMB CBT.

Upper basic education is one of the components of a year basic education in Nigeria. Upper basic secondary school students are the children that are still within the class of basic 7 to 9 and the ages of the student's ranges from 12 to 14 years. Amina [6] stated that basic education curriculum comprises of 20 subjects including new subjects such as basic science, basic technology and computer studies. Computer studies are one of the core subjects offered at upper basic education level in Enugu State.

Computer studies are the study of the basic principles and rudiments behind the operation and effective usage of the computers. The objectives of computer studies at upper basic level include among others to appreciate the technological development of computers, develop skills in the safe use and care of computer system, develop skills to use application packages, appreciate the role of computer application in carrying out day to day business and organizational tasks. Computer is an important tool in writing UTME and other jobs in Nigeria. Therefore, there is need to train upper basic secondary school students gradually in computer literacy skills.

Computer literacy is the ability of an individual to use computer software efficiently and effectively in an examination and other jobs. In the opinion of Dawn [7], it means having some sort or level of comfort around computers rather than having a look of fear. Dawn identified computer literacy skills to include: abilities to save and open a file, use word processing program, send and receive e-mail. Also there is need to adopt a strategy for developing the computer skills of upper basic secondary school students for excellent performance in JAMB CBT. Such strategies as installation of CBT tutorial software, Installation of computer laboratories and effective utilization of computers in preparing the students for CBT. These strategies may likely lead to their effective performance in JAMB computer based test. It is against this backdrop that the researchers seek to determine the general computer literacy skills needed by upper basic secondary school students and strategies for developing their computer skills for effective performance in computer based test in Enugu State of Nigeria.

Statement of the Problem

The researchers observed that many candidates perform below standard in JAMB computer based test not because they do not know what to write if there were given paper and pen. The reason could be that they were not fortified with the basic computer literacy skills that will help them to perform excellently in JAMB CBT. Shina and Akinlolune [8] noted that awareness campaign of CBT is not enough because students have not been well trained? If this is allowed to continue, it will frustrate many candidates that want to gain admission to higher institutions in Enugu State which will eventually lead to pilfering, Bokoharam, vandalization of oil pipelines, robbery and slow pace in economic and sustainable development in Enugu State of Nigeria.

Purpose of the Study

The general purpose of the study is to develop the computer skills of upper basic secondary school students for an excellent performance in JAMB CBT. Specifically, the study tends to determine the:

- General computer literacy skills needed by upper basic secondary school students for an excellent performance in JAMB CBT in Enugu State.
- Strategies for developing the computer literacy skills of upper basic secondary school students for excellent performance in JAMB CBT in Enugu State.

Research Questions

The following research questions were answered by the study:

- What are the general computer literacy skills needed by upper basic secondary school students for an excellent performance in JAMB CBT in Enugu State?

- What are the strategies for developing the computer skills of upper basic secondary school students for excellent performance in JAMB CBT in Enugu State?

Null hypotheses

The following null hypotheses were tested at 0.05 level of significance

Ho₁: There is no significant difference in the mean ratings between urban and rural computer studies teachers on general computer literacy skills needed by upper basic secondary school students for excellent performance in JAMB computer based test in Enugu State.

Ho₂: Significant difference does not exist in the mean ratings between urban and rural computer studies teachers on strategies for developing the computer literacy skills of upper basic secondary school students for excellent performance in JAMB computer based test.

METHOD

This study was carried out in Enugu State of Nigeria. The study adopted descriptive survey research design with a population of 197 made up of 160 urban and 37 rural computer studies teachers teaching in 291 public secondary schools in Enugu State. Since the population is manageable, the entire population was

used for the study. Three experts from Faculty of Education of Enugu State University of Science and Technology validated the instrument. The instrument used for the study was a structured questionnaire developed by the researchers. The research instrument is made up of two parts, part A and B. Part A was designed to elicit information on the background of the respondents using such variables as urban and rural while part B has two sections, section A and B. section A has 18 while section B has 12 questionnaire items. A total of 24 questionnaire items were used to collect information from the respondents. All the 197 copies distributed with the help of six trained research assistants were retrieved giving 100% return rate. Four point response scale of strongly agree (4), Agree (3), disagree (2) and disagree (1). Data collected from the respondents were analyzed using weighted mean and standard deviation to answer the research questions while t-test hypothesis was used to test the hypotheses at .05 level of significance and 95 degrees of freedom. Any mean above to 2.50 was regarded as agree while any mean below 2.50 cutoff mean was regarded as disagree. The null hypothesis was not rejected if the t-cal is less than the critical t. table at appropriate degree of freedom; otherwise, the null hypothesis was rejected.

RESULTS

Research questions 1: What are the computer literacy skills needed by upper basic secondary school students for an excellent performance in JAMB CBT

Table-I: Mean ratings and standard of computer studies teachers on computer literacy skills needed by upper basic secondary school students for an excellent performance in JAMB CBT in Enugu State

S/N	Computer Literacy Skills needed by upper basic Secondary School Students include abilities to:	\bar{X} = 160	SD ₁	\bar{X} n= 37	SD ₂	G \bar{X}	GSD	Decision
1.	Manipulate the keyboard	3.76	0.61	3.78	0.59	3.97	0.60	Agree
2.	Use numbers and punctuation keys	3.54	0.64	3.62	0.55	3.55	0.63	Agree
3.	Use mouse to right click	3.62	0.64	0.65	0.63	3.62	0.64	Agree
4.	Use mouse to left click	3.61	0.75	3.68	0.67	3.62	0.72	Agree
5.	Use mouse to select text	3.78	0.50	3.78	0.48	3.78	0.50	Agree
6.	Use mouse to scroll up	3.62	0.78	3.73	0.56	3.63	0.74	Agree
7.	Use mouse to scroll down	3.43	0.82	3.46	0.80	3.44	0.82	Agree
8.	Use mouse to scroll left or right	3.08	1.01	3.11	0.99	3.08	1.00	Agree
9.	Use the screen navigation command such as previous or next	3.08	0.90	3.08	0.89	3.08	0.89	Agree
10	Navigate between multiple window	3.01	0.61	3.11	0.46	3.03	0.54	Agree
11	Navigate tool bars and drop down menus	3.07	0.80	3.05	0.81	3.07	0.80	Agree
12	Navigate screen tabs	3.12	0.62	3.11	0.61	3.42	0.69	Agree
13	Use the undo and redo operations	3.17	0.90	3.24	0.80	3.18	0.88	Agree
14	Use on screen key such as calculators, rulers and pencil	3.01	0.63	3.00	0.62	3.02	0.63	Agree
15	Navigate through web pages	3.21	0.81	3.24	0.80	3.32	0.81	Agree
16	File document on the net	3.00	0.77	3.05	0.78	3.02	0.77	Agree
17	Submit documents on the net	3.37	0.78	3.38	0.79	3.37	0.78	Agree
	Grand mean/standard deviation	3.35	0.72	3.38	0.67	3.37	0.71	Agree

Table I shows that all the identified 18 items are the computer literacy skills needed by upper basic

secondary schools students for an excellent performance in computer based test. The mean ranges

from 3.00 to 3.01 while the standard deviation ranges from 0.39 -1.00. The grand mean of 3.37 attest to that

while the grand standard deviation of 0.71 shows that the respondents are very close in their responses.

Table-2: The t-test comparison of the mean ratings between the urban and rural computer studies teachers on general computer literacy skills needed by upper basic secondary school students for excellent performance in computer based test

Variable	No	\bar{x}	SD	t.crit	t.cal	Dec.
Urban	160	3.22	0.69			
Rural	37	3.40	0.64	1.96	-1.52	Not significant

t.cal (-1.52) < t.table ((1.96) not significant

The result in table 2 shows that t. calculated of -1.52 is less than critical table t-value of 1.96 at 0.05 levels of significance and 195 degree of freedom. Hence, there is no significant difference the mean ratings of urban and rural computer studies teacher in Enugu State on general computer literacy skills need by

upper basic secondary school students for an excellent performance in computer based test.

Research question 2: What are the strategies for developing computer skills of upper basic secondary school students for excellent performance in computer based test.

Table-3: Mean ratings and standard deviation of computer studies teachers on strategies for developing the computer skills of upper basic secondary school students for excellent performance in JAMB computer based test

S/N	Computer Literacy Skills Abilities to:	\bar{x} n= 160	SD 1	\bar{x} n= 37	SD 2	\bar{x}_G	SD G	Decision
1.	Installation of computer laboratories	3.91	0.28	3.91	0.28	3.91	0.28	Agree
2.	Effective utilization of computers in preparing the students for CBT	4.00	0.00	4.00	0.00	4.00	0.00	Agree
3.	Employing of CBT professionals	3.67	0.47	3.65	0.48	3.66	0.48	Agree
4.	Hiring CBT professionals	3.08	0.74	3.00	0.75	3.04	0.75	Agree
5.	Installation of CBT tutorial software	3.91	0.28	3.92	0.28	3.92	0.28	Agree
6.	Frequent practice by the students using the tutorial application software	3.71	0.37	3.78	0.42	3.75	0.50	Agree
7.	Installation of powerful standby generator	3.91	0.28	3.92	0.28	3.92	0.28	Agree
	Grand Mean/ standard deviation	3.74	0.37	3.74	0.36	3.74	0.37	Agree

Table 3 Shows that all the identified items are the strategies for developing the computer skills of upper basic secondary school student for excellent performance in computer based test. The grand mean ranges from 3.04 to 4.00 while the group standard deviation ranges from 0.00 to 0.75. The grand mean of 3.74 is evidence that the respondents agree that all the identified strategies by the researchers can be very effective for developing the computer skills of upper basic secondary school students for excellent

performance in computer based test. The grand standard deviation of 0.37 shows the homogeneity of the respondents in their responses.

Ho2: Significant difference does not exists in the mean ratings between urban and rural computer studies teachers on the strategies for developing the computer skills of upper basic secondary schools students for excellent performance in computer based test.

Table-4: t-test comparison of the mean ratings of the urban and rural computer studies teachers on the strategies for developing the computer skills of upper basic secondary school students for excellent performance in commuter based test.

Variable	No	\bar{x}	SD	t.crit	t.cal	Dec.
Urban	160	3.74	0.37			Do not
Rural	37	3.74	0.37	1.96	0.00	Reject

Table 4 reveals that the t.calculated of 0.00 is less than the critical t. of 1.96. Since the t. calculated is less than the critical t, HO₂ shows that significant difference does not exist in the mean ratings between urban and rural computer studies teachers on the

strategies for developing the computer skills of upper basic secondary school students from excellent performance in computer based test.

DISCUSSION OF RESULTS

Research question one in table one showed that upper basic secondary schools students in Enugu State need computer literacy skills for excellent performance in JAMB CBT. Adamu [9] noted that CBT would encourage future candidates to upgrade their computer skills. Adamu equally expressed worries over candidates who are not computer literate. Admau's worries support the findings of this study that upper basic secondary school students in Enugu state needs computer literacy skills for excellent performance in computer based test.

The hypothesis tested as shown in table 3 revealed that there is no significant difference between the mean ratings of urban and rural computer studies teachers on the general computer literacy skills needed by upper basic secondary school students for excellent performance in CBT. This finding is in line with the finding of Dangut & Sakiyo [1] that there is no significant difference in computer literacy skills (CLS) of urban and rural secondary school students in Admawa and Taraba State.

Furthermore, the findings of the study revealed that the respondents agreed that the items identified by the researchers are the strategies for developing the computer skills of upper basic secondary school students for excellent performance in JAMB CBT. One of the strategies includes effective utilization of the computers in preparing the students for CBT. This entails that computer studies teacher need to use computers extensively in learning the students. In other word, learning computer studies should be more of practical than theory. The low utilization of computers in teaching could be the reason of the low literacy level of students in computer literacy. This finding could be the reason Teacher's Registration Council of Nigeria (TRCN) stated that all Nigeria teachers need to undergo mandatory computer Based test before they are registered. TRCN added that the essence of CBT is to produce 21st century teachers who would deliver.

The result of the finding in hypothesis two revealed that significant difference did not exist in the mean ratings between urban and rural computer studies teaching on the strategies for developing the computer skills of upper basic secondary school students for excellent performance in JAMB CBT in Enugu State. The findings of this study is in agreement with the findings of Nwanze [4] that there were no significant difference among the response of principals, vice principals, teachers on the strategies for improving the availability of and quality of human resources required for the teaching of computer studies in Delta State.

CONCLUSION

Computer is becoming fundamental to the teaching and learning process in Nigerian educational

system and JAMB maintained that there is no going back on CBT. Therefore the researchers advocate that the upper basic students in Enugu state need to be exposed to CBT early enough and train them gradually in computer studies. That is to say, 'catch them young'.

RECOMMENDATIONS

Based on the findings and conclusion drawn, the researcher's hereby made the following recommendations

- Computer studies teachers should be trained and re-trained on CBT so that they can develop the computer skills of upper basic secondary school students for excellent performance in computer based test'
- CBT centers should be established in all the public secondary schools in Enugu State.
- Computer studies teachers should try as much as possible to utilize computer in teaching /learning.

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