

Effect of computer assisted learning methods on facilitating continuing education in Lagos State, Nigeria

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ABSTRACT

Society is rapidly transforming into one which is based on information requiring its citizens to be familiar with information based resources and manipulations. This paper focuses on the continuing education and relevance of educational technology for adult learners; explains the using of computer based educational technologies such as Computer Assisted Instruction (CAI), computer assisted interactive learning and Computer-Mediated Communication (CMC) in adult education; and examines the advantages and suitability of these methods from the point of the adult learning characteristics. A descriptive survey research design was adopted; using simple random sampling technique to pick 50 adult teachers and 50 adult learners in Ojo Local Government Area of Lagos State. The data collected were analyzed using descriptive statistics of frequency counts and percentages for demographic data, while inferential statistics of chi-square was used to test hypotheses. Three hypotheses formulated and tested. It was deduced from the findings that continuing education is a process of self-directed inquiry through which individuals systematically learn from their daily experiences and other resources and educational technologies in their environment. Technologies offer ways of individualizing instruction to meet the needs of adult learners and can offer opportunities to individualize instruction; reaching all adult learners in ways they learn best.

Keywords: Continuing education, computer assisted education, interactive learning.

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INTRODUCTION

There are minor differences of opinion as to what continuing education is and what it should do. The term continuing education can be used as a field of operations that encompasses all the organized activities in which mature men and women engage for the purpose of learning, usually under the auspices of an institution, a process of self-directed inquiry through which individuals systematically learn from their daily experiences and other resources in their environment and as a social movement that encompasses the whole spectrum of mature individuals learning in infinite ways under innumerable auspices the many things that make life richer and more civilized and is dedicated to the improvement of the process of adult learning, the extension of opportunities for adults to learn (Akinyemi 2007; Adebola, 2008).

In this part of this study, the researcher review the computer based educational technologies such as Computer Assisted Instruction (CAI), Computer Assisted Interactive Learning (CAIL), and Computer Mediated Communication (CMC) from the point of the characteristics of adult learning. The computer's capacity to allow learners choices over content as well as provide immediate feedback on the learner's responses makes it particularly well-suited to maintaining the motivation of a student as he or she progresses. These features are particularly important for adult learners who often feel that learning is difficult and may need to re-experience themselves as successful learners (Bakare, 2007).

Computers give students a sense of empowerment and control. Students can control the pace and repeat lessons when they feel the need to do so; thus, they can progress

at a learner defined pace and move ahead when they feel that they are ready. More important, the computer's capacity to interact with the student changes the instructional process. Traditionally, it is the teacher who controls the interaction (Bello, 2004).

Working with computers also helps to bring adult students into the technology age. Often, the environment of low-income adults, older adults, and illiterate and functionally illiterate adults does not afford experiential access to technology (Edwards, 1993; Tousignant, 1996).

As well as enabling students to achieve at higher levels, researchers have also found that CAI enhances learning rate. Student learning rate is faster with CAI than with conventional instruction. If students receiving CAI learn better and faster than students receiving conventional instructions alone, do they also retain their learning better? The answer, according to researchers who have conducted comparative studies of learning retention, is yes. Most of the research that examines the effects of CAI and other microcomputer applications on student learning outcomes also investigates effects upon student attitudes (Cotton, 2002).

Patience is a virtue that the computer offers. During instruction, students' responses are not timed (unless the program has a timer that the teacher can set); hence, students can move at their own pace (Finnegan and Sinatra, 1991). Utilizing CAI also allows students to receive instant feedback, which is beneficial for the adult student because it reinforces successful instructional behaviors.

Many software programs also enable instructors to individualize instruction. Individualization is essential in adult education because more often than not, adult education classrooms are filled with students working on a range of educational levels with a diverse of personal backgrounds and educational experiences.

Moreover, not only do these patrons bring a wealth of personal experience but also their reasons for attending adult education programs vary (Askov and Bixler, 1996). Computer-assisted instruction (CAI) delivered on a personal computer has been viewed optimistically by many researchers since its introduction in the 1970s, it has been claimed that if judged by a number of criteria that include achievement gains most CAI uses one or a combination of the following techniques such as tutorial, drill and practice, learning games, simulation, problem solving, assessment, and demonstration/presentation.

The most common of all techniques is the tutorial. It is used to introduce new information when objectives must be taught in a sequential manner. Another commonly used technique is known as drill and practice. It provides opportunities for practice when mastery of a new skill or information is desired. It should be used after initial instruction. Learning games supplement other instruction and are used to provide motivating and engaging opportunities for practice after a skill or new information is taught. The technique of simulation is most often used

when practicing a skill in its real context is too costly or dangerous to undertake. It provides an opportunity for experimentation, and builds realism and relevance into the learning situation. One of the most challenging techniques used in CAI is problem solving. It helps students develop skills in logic, solving problems, and following directions, and is generally used to augment higher order thinking skills. Assessment is a valid part of any learning experience. Computer-based assessment can be used to initially place and then monitor students' progress within a curriculum. Demonstration or presentation is best used to support the introduction of new information. It can also be used as a review tool.

Statement of the problem

The relevance of computer in facilitating continuing education cannot be underestimated. In Nigeria, continuing education programmes have depended primarily on printed instructional materials for impacting literacy rather than computer assisted instruction and this has hampered the effectiveness of the teaching and learning programmes.

The most challenging aspect of the post industrial era is how to meet the demand of the information society. As society changes, the educational system has to change accordingly.

Purpose of the study

The purpose of this research work is to:

- i) Examine how best to fully integrate Computer Assisted Learning in continuing education programmes in Nigeria;
- ii) Examine the level of (Computer Assisted Learning) literacy among adult learners;
- iii) Examine the relevance of Computer Assisted Learning to effective teaching and learning of adult education;
- iv) Assess if Computer Assisted Learning of teaching and learning adult education will be a great advantage.

Research questions

This research was carried out to provide answers to the following research questions:

- i) Is there any significant relationship between the use of Computer Assisted Learning (CAL) in teaching and learning process of adult learners' and academic performance?
- ii) Is there any significant relationship between the academic performance of adult learners who are computer literate and learners who are not?
- iii) Is there any significant relationship in the academic performance of adult learners in continuing education

centres with adequate ICT tools and continuing education centres with inadequate ICT tools?

Research hypotheses

The hypotheses for this study are as follows:

H₀₁: There is no significant relationship between the use of Computer Assisted Learning application and academic performance of adult learners.

H₀₂: There is no significant relationship between the academic performance of adult learners who are computer literate and learners who are not

H₀₃: There is no significant relationship between Computer Learning tools in schools and academic performance of adult learners.

Significance of the study

Computer-assisted instruction (CAI) is utilized because of the benefits it offers to adult learners. Not only does CAI assist students in developing skills in logic, problem solving, and following directions, it also aids in improving academic proficiency in areas such as reading and vocabulary, language, writing, and listening (Askov and Bixler, 1996; Tousignant, 1996).

CAI also has several attributes useful to adult students; it offers privacy, patience, feedback, individualization, and control. Most adult learners do not want others to know about their academic deficiencies. They also take errors more personally and allow mistakes to effect their self-esteem. CAI not only provides privacy, the computer is nonjudgmental and allows low-level ability students to work on improving their skills without divulging their ability level to classmates (Edwards, 1993).

Limitations of the study

Large numbers of the respondents were found all over the nation owing to time constraint but the study was limited to Ojo Local Government Area of Lagos State.

METHODOLOGY

Research design

The study adopted a descriptive survey research design. The survey research design elicit data of large magnitude at the same time reduce time lag. This accounted for the choice of this design.

Population of the study

The population of the study consisted of all the Adult learners and teachers in all the Continuing Education Centres in Ojo Local Government Area of Lagos State.

Sample and sampling technique

The sample for the study consisted of 50 Adult learners and 50 Adult teachers in Ojo Local Government Area of Lagos State.

The random sampling technique was adopted. This was adopted in order to cover all parts of the study area and also to give all units of the population an equal chance of being selected. This technique ruled out bias and created room for credibility, reliability and validity of the study.

Instrument for data collection

A self developed questionnaire was used to collect data from the respondents in order to give direct information on the subject under study. This formed the primary source of data. The secondary sources of data included books, journal articles, magazines, newspapers, internet and other publications. All these sources were referenced at the end of the day.

Validity and reliability of instrument

The content validity and reliability of the instrument was ascertained by using expert opinion in the various departments of continuing education centres and other specialists in the areas of the study. The instrument was designed in consonance with the comments and suggestions from the experts.

Data analysis

The study employed both the descriptive and the inferential statistical methods. In this, the simple percentages and frequency table were used for descriptive inferences to be made.

RESULTS AND DISCUSSION

The data collected through the questionnaire were collated and subjected to statistical test. The percentage distribution method was used to analyse the bio-data and Chi-square Statistical analysis was used to test the hypothesis at 0.05 level of significance.

Table 1 presents the gender of the respondents, 65 (65%) were female while 35 (35%) were male. This shows that the female proportion is higher than the male proportion.

From Table 2, 20 (20%) respondents within the age range of 25 to 30 years, 24 (24%) respondents within the age range of 31 to 35 years, 30 (30%) respondents within the age range of 36 to 40 and 26 (26%) within the age of 40 years and above.

From Table 3, a total of 5 (5%) were single, 78 (78%) were married, 8 (8%) were divorced, while 9 (9%) were separated.

From Table 4, work experience of the respondents shows that 5 (5%) of the respondents work between 0 and 5 years, 5 (5%) of the respondents work between 6 and 10 years, 5 (5%) of the respondents work between 11 and 15 years, 65 (65%) of the respondents work between 16 and 20 years while 25 (25%) of the respondents work between 20 and above.

Table 1. Distribution of respondents by gender.

Gender	Frequency	Percentage
Male	35	35
Female	65	65
Total	100	100

Table 2. Age distribution of respondents.

Age	Frequency	Percentage
25-30 years	20	20
31-35 years	24	24
36-40 years	30	30
40+	26	26
Total	100	100

Table 3. Marital status of the respondents.

Marital status	Frequency	Percentage
Single	5	5
Married	78	78
Divorced	8	8
Separated	9	9
Total	100	100

Table 4. Work experience of respondents.

Work experience	Frequency	Percentage
0-5 years	5	5
6-10 years	5	5
11-15 years	5	5
16-20 years	65	65
20 and above	25	25
Total	1000	100

Table 5. Result showing the relationship between the use of Computer Assisted Learning application and academic performance of adult learners.

Groups	A	D	U	Total	df	P	Cal X ²	Table X ²	Decision
Adult teachers	40	10	-	50					
Adult learners	29	20	1	50	2	0.05	6.10	5.99	Reject
Total	80	18	2	100					

Table 6. Result showing the difference between the academic performance of adult learners who are computer literate and learners who are not.

Group	A	D	U	Total	df	P	Cal X ²	Table X ²	Decision
Adult teachers	41	6	3	50					
Adult learners	35	15	-	50	2	0.05	7.28	5.99	Reject
Total	76	21	3	100					

Testing of hypotheses

Hypothesis 1: There is no significant relationship between the use of Computer Assisted Learning application and academic performance of adult learners.

Table 5 shows that calculated value is greater than the table value, thus null hypothesis is rejected. This implies that the use of Computer Assisted Learning applications has significant relationship with academic performance of adult learners.

Hypothesis 2: There is no significant relationship between the academic performance of adult learners who

are computer literate and learners who are not.

Since the calculated value 7.28 is greater than the tabulated value 5.99, the null hypothesis is rejected (Table 6). This implies that there is a significant difference between the academic performance of adult learners who are computer literate and learners who are not.

Hypothesis 3: There is no significant relationship between Computer Learning tools in schools and academic performance of adult learners.

Since the calculated value 11.08 is greater than the

Table 7. Result showing the relationship between Computer learning tools in schools and academic performance of adult learners.

Group	A	D	U	Total	df	P	Cal χ^2	Table χ^2	Decision
Adult teachers	42	8	-	50					
Adult learners	27	21	2	50	2	0.05	11.08	5.99	Reject
Total	72	19	9	100					

tabulated value 5.59, the null hypothesis is rejected (Table 7). This implies that the use of Computer Learning tools in schools have significant relationship with academic performance of adult learners.

CONCLUSION

Adult education is a process of self-directed inquiry through which individuals systematically learn from their daily experiences and other resources and educational technologies in their environment. Technologies offer ways of individualizing instruction to meet the needs of adult learners and can offer opportunities to individualize instruction; reaching all adult learners in ways they learn best. The unlimited benefits and advantages of technologies are the following; reaching learners outside of classrooms, using learning time efficiently, sustaining motivation, individualizing instruction and providing access to information tools.

RECOMMENDATION

1. Government should provide computer learning tools in all continuing education centres and adult learners and teachers should have access to them.
2. Government should endeavour to revise the curriculum with a view to incorporate the use of computer and ICT assisted instruction in teaching adult students.
3. Government should ensure to enact policies guiding the provision of appropriate materials.
4. Teachers and adult learners should be exposed to regular seminars and computer literacy workshops to keep them abreast of computer and ICT based instruction.
5. Adult learners should put in their best to make adequate provision for themselves so as to foster their education.

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