

TEACHERS' VARIABLES AND USE OF COMPUTER ASSISTED INSTRUCTIONAL MATERIALS (CAIM) IN SENIOR SECONDARY SCHOOLS CHRISTIAN RELIGIOUS STUDIES IN ONDO STATE, NIGERIA

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Abstract

Education is the back bone in the development of any society, and the teacher has a prominent role to play in achieving the objectives of educational enterprise. Teachers' variables also go a long way in making the teaching-learning process successful. The researchers examined Christian Religious teachers' variables and use of Computer Assisted Instructional Materials (CAIM) in Senior Secondary Schools in Ondo State, Nigeria. The study adopted a descriptive survey design. The population for this study comprised all the Christian Religious Studies (CRS) teachers in the Senior Secondary Schools in Ondo State. The target population were 75 respondents sampled through a stratified random sampling technique. A ten-item questionnaire titled 'Computer Assisted Instructional Materials in Christian Religious Studies (CRS) Assessment' was used to elicit information from the respondents with a reliability index of 0.76. The data collected were analysed using percentages and mean to answer the research questions while hypotheses were tested using t-test statistic. The findings showed that majority of the CRS teachers used instructional media in the teaching-learning process, and recommended that teachers should be encouraged to go for ICT training to enhance their teaching

Keywords: Teachers' Variables, Computer Assisted Instruction, Information and Communication Technology (ICT)

Introduction

Education is one of the most indispensable needs of man. It is through this means that man acquires knowledge and experiences that enable him to strive with complexities of life. Indeed, at the Senior Secondary School levels, the teachers, the learners and instructional materials form the pivot through which this knowledge and expressions are articulated with a view to influencing students' performance. Christian Religious Studies (CRS) is one of the subjects that is included in secondary school curriculum not only for academic purposes and development but for the spiritual and moral upliftment of the youths in the society. The subject (CRS) has the potential to inculcate in learners, values and moral that will make them to be effective citizens and contribute positively to the development of their society or country.

Teaching of Christian Religious Studies at the Senior Secondary School level is aimed at achieving the objectives of the discipline at that level which includes individual preparation for useful living within the society, and preparation for higher education (FRN, 2004). The overall objectives of Christian Religious Studies at the Senior Secondary School level as stated by Nigerian Educational Research and Development Council (NERDC, 2007) include:

- (a) To provide more opportunity for the Nigerian youth to learn more about God and thereby develop their faith in God;
- (b) To enable youth to accept Christ as their Saviour and Redeemer;
- (c) To enable the youth to recognize Jesus as the founder and sustainer of the Christian Church;
- (d) To enable the youth to accept the guidance of the Holy Spirit in their daily lives and activities;
- (e) To help the youth to understand the basic teachings of Christ and to apply these to their daily lives and work;
- (f) To help develop in the youth Christian attitudes and moral values, such as humility, respect, love, kindness, justice, fair play, spirit of forgiveness, obedience, orderly behaviour or discipline, hard work and devotion to duty, selfless service to God and humanity;
- (g) To prepare the youth for higher education, self-reliance, critical thinking and for selfless service within community;
- (h) To instil in the youth the spirit of tolerance, reconciliation, peaceful co-existence and non violence;
- (i) To develop and foster in the youth the spirit of respect for all people and human life.

These objectives could only be achieved when the subject is properly taught by teachers with appropriate instructional media, and one of the requirements for effective teaching is resourcefulness. CRS teachers need to be acquitted with ICTs that would help them optimally in the teaching and learning process. Agukuogbuo(2000) is of the view that the way to teach effectively is for the teachers to engage in human capacity building which will involve the use of variety of strategies and techniques in his/her teaching.

It has been observed that teachers not only teach learners with basic knowledge of CRS content, but also with higher cognitive skills, such as problem solving and thinking skills that allow for self-development, continuous learning and Information and Communication Technology (ICT) skills in order to meet up with global challenges. Christian Religious Studies is not left out in these challenges. To meet up with these, there is a movement from direct teaching as in the lecture method, bible reading, note copying and dictations, where the learners are given contents to memorize and regurgitate to constructive instructional approach like Computer Assisted Instruction (CAI), and how they could constructively use the approach for effective teaching and learning of CRS. The new approach is pupil or learner-centered. The learners are not treated as an empty vessel. They are credited with knowledge, skills and attitudes from the day they were born which requires development, encouragement, and motivation (NTI, 2010).

Teachers are the most important agents for the successful implementation of educational programme. For creative teaching, teachers must necessarily be conversant with educational innovations, new media and their application in learning process to assist learners in the acquisition of concrete and rewarding school experience. The National Policy on Education (FRN, 2013) succinctly put it that “no education system is expected to rise above the quality of its teachers” that is, the qualification and experiences of teachers are considered to be of paramount important in the implementation of school curriculum.

The current age is the information age, which requires information and making relation for getting required information (Block, 2002). Many researchers view information society as multi-structural and multi-dimensional society in which all layers and levels require information (Jenkins, 2003). Information and Communication Technologies (ICTs) are generally accepted as a modern education instrumental tool that enables the educators to modify the teaching methods they use in order to increase the students performance. Ibe-Bassey(2000) and Inyang –Abia (2004) noted that media mediate in a continuum between stimulus response learning and cognitive learning to concretize ideas, concepts, and facilitate learning. This reveals that ICT is capable of facilitating the collection, preparation, presentation, storage, retrieval, conveyance and dissemination of information. Nowadays, schools or learning institutes provide computers and Information Technology as the learning material to gain knowledge and experience. Students now have more understanding during teaching process. Internet especially provides many kinds of information and also learning tools in educational lines. The objective of the exercise is to prepare them in solving problems. One of the methods is by using multimedia activities. The idea is that students will be active participants rather than spectators in teaching and learning process

Effective learning of the subject is also determined by teachers' skillfulness and resourcefulness in identifying and selecting method and instructional materials to teach the content of the subject. Therefore, it becomes imperative for teachers to possess a store of

modern technology, practice and expertise in designing and use of the appropriate instructional materials for a particular lesson. Oni (2005) pointed out that the availability, adequacy and quality of instructional media promotes effective teaching and learning activities in school, while their inadequacy affects academic performance negatively.

One of the reasons attributed to the negative performance of students in CRS is the abstractness of the subject. To buttress this assertion, Eze (2012) and Ojo (2016) stated that CRS is an art subject which is so abstract that learners most of the time, do not gain enough experience from its oral teaching alone. This implies that the use of computer assisted instructional media will go a long way in making the teaching and learning exercise more concrete and true to life experience. Onasanya and Adegbija (2007) agreed that instructional media act as an integral part of the teaching-learning situations which help to bring about meaningful experience.

Computer-Assisted Instruction (CAI) is an instructional approach where a computer is used to communicate the instructional materials and evaluate the learning outcomes. It uses a blend of graphs, texts, sounds and videos for learning process (Beserseker & Singhari (2017). CAI refers to virtually any sort of computer application in instructional settings comprising of drill and practice, simulations, instructional exercises, supplementary exercises, instructional management, database development, programming, composing using word processors, and other different applications (Cavas & Kesercioglu(2003). The challenge is how to optimize usage. Hew & Brush(2007) ascertain that computer-assisted learning has the ability to promote active learning in a wide variety of disciplines from literature to the social sciences and beyond. Omeriba, Gitau & Ayot (2016) opined that the utilization and growing development of technology in the classroom gives new chances for delivering instruction. Educators use technology to enhance instruction, and this method has turned out to be more powerful and effective. (Jenkins & Springer (2002).

Research has revealed that technology in the classroom can be valuable in the management of instructional method and an effective teaching improvement. The advantages of CAI method according to Orjika (2012) include: ensuring the application of proven teaching methods to students; offering equal educational opportunities for students by using the same programme; changing the role of the teacher from teaching capacity to that of a guide; also when properly handled, removing fright and embarrassment on students and bringing about meaningful learning and academic achievement (Orjika, 2012).

The potential benefits of Computer Assisted Instruction (CAI) cannot be under-estimated in the contemporary world. There is a plethora of established findings on the instructional value of computer, particularly in advanced countries. There are now several CAI packages on different subjects. It is obvious that the current trend in research all over the world is the use of computer facilities and resources to enhance students' learning. This may be the reason why Handelsman, Ebert-May, Beichner, Bruns, Chang, et al (2004) opined that “many exercises that depart from traditional method are now readily accessible on the

web”, even though teachers do not use these facilities. They further showed that the interactive approaches to lecturing significantly enhance learning.

Gender, teaching qualifications and experience have been identified as major factors influencing the use of instructional materials in schools (Ross, Hogaboam-Gray, & Hannay, 1999; Okonkwo, 2002; Yusuf, 2007; Adekeye, 2008 & Umar, 2010). Jimoh (2002) opined that complete education process of teaching and learning cannot be accomplished without the experience, quality and quantity of teachers that are involved in it. He viewed teaching as a profession of experience, the main yardstick in the implementation of any curriculum. This is in support of Ross, Hogaboam-Gray, and Hannay (1999) who reported that access to technologies increased teachers' opportunities for successful teaching experiences, thereby contributing to greater confidence in their instructional ability.

Adekeye (2008) and Umar (2010) discovered that a significant difference exists in the use of instructional resources between male teachers and female counterparts in the teaching of Social Studies and Islamic Studies in the use of instructional media. Okonkwo, (2002) worked on the relationship between schools and teacher variables and students' achievement in Mathematics. His findings showed that in terms of teachers' qualification, teachers with degree made a better use of instructional media thereby produced the highest scoring while the NCE holders followed. Kolawole (2002) was of opinion that a professional becomes more efficient and more effective as he stays longer in his profession by learning more and more about the difficulties that students encounter while learning. His growing experiences help students to gain insight into ways to overcome difficulties in learning. He sees experienced teachers as those that have spent more than five years in the teaching profession while Yusuf (2007) discovered that there is no significant difference between the experienced and less experienced Social Studies teachers in their use of community resources.

Therefore, this study investigated whether the teacher' variables have influence on the use of Computer Assisted Instructional Materials (CAIM) in senior secondary school Christian Religious Studies. The teachers' variables considered in the study are gender, teaching qualifications and experience.

Research Questions

1. To what extent do Christian Religious Studies teachers use Computer Assisted Instructional Materials (CAIM) for Christian Religious Studies in senior secondary schools?
2. Do Christian Religious Studies teachers differ on the use of Computer Assisted Instructional Materials (CAIM) in Senior secondary schools based on gender?
3. Do Christian Religious Studies teachers differ on the use of Computer Assisted Instructional Materials (CAIM) in Senior Secondary schools based on educational qualification?

4. Do Christian Religious Studies teachers differ on the use of Computer Assisted Instructional Materials (CAIM) in Senior Secondary schools based on teaching experience?

Research Hypotheses

HO1: There is no significant difference between male and female CRS teachers on the use of Computer Assisted Instructional Materials (CAIM) in Senior Secondary Schools.

HO2: There is no significant difference between the educational qualifications of CRS teachers on the use of Computer Assisted Instructional Materials (CAIM) in Senior Secondary Schools.

HO3: There is no significant difference between experienced and less experienced and more experienced CRS teachers on the use of Computer Assisted Instructional Materials (CAIM) in Senior Secondary Schools.

Methodology

The descriptive survey research design was used in the study. This is necessary to be able to explain the variables in the study based on information gathered. The research was conducted in Akure which is the capital of Ondo State, Nigeria. The population was all senior secondary schools teachers in the metropolis. A sample of seventy –five Christian Religious Studies teachers were purposively sampled using stratified random sampling technique. A questionnaire titled “Computer Assisted Instructional Materials (CAIM) in Christian Religious Studies Assessment (CAIMCRSA)” was used for data collection. The questionnaire was divided into two sections. Section A deals with information about demographic data of the respondents while Section B contains items on Computer Assisted Instructional Materials on a four point Likert scale. To validate the instrument, copies of the questionnaire were given to experts in Measurement and Evaluation as well as experts in the Department of Social Sciences Education, University of Ilorin, Nigeria to ensure content validity. Its reliability was established using test-retest technique and a reliability index of 0.85 was obtained. Frequency counts, percentage and mean were used to answer research question 1 while research questions 2, 3 and 4 have corresponding null hypotheses tested using t-test statistic at 0.05 significant level and Analysis of Variance (ANOVA)

Results

Questions 1: *To what extent do Christian Religious Studies teachers use Computer Assisted Instructional Materials (CAIM) for Christian Religious Studies in senior secondary schools?*

In order to answer research question one, responses of Christian Religious Studies teachers on items 1 to 10 of the questionnaire on the extent of using CAIM were analysed using percentage to determine the extent. The result is shown in table 1.

Table 1: Usage of Computer Assisted Instructional Materials in Senior Secondary School Christian Religious Studies in Ondo State.

S/N	ITEMS	Often%	Sometimes%	Rarely%	Never%	Mean
1.	Multimedia	2(2.7)	10(13.3)	12(16.0)	51(68.0)	1.51
2.	Video	6(8.0)	38(50.7)	16(21.3)	15(20.0)	2.47
3.	CRS computer based documentaries	2(2.7)	6(8.0)	17(22.7)	50(66.7)	1.47
4.	Computer System	2(2.7)	6(8.0)	19(25.3)	48(64.0)	1.49
5.	Projectors	10(13.3)	11(14.7)	52(69.3)	2(2.7)	2.39
6.	Digital learning materials	10(13.3)	47(62.7)	10(13.3)	8(10.7)	2.79
7.	Internet Facilities	5(6.7)	40(53.3)	20(26.7)	10(13.3)	2.53
8.	Software in CRS	5(6.7)	40(53.3)	20(26.7)	10(13.3)	2.53
9.	Computer based animation /images on CRS topics	7(9.3)	38(50.7)	11(14.7)	19(25.3)	2.44
10.	CRS simulated materials	2(2.7)	7(9.3)	12(16.0)	54(72.0)	1.43
Weighted Mean Average						2.1

The analysis from table 1 shows the extent of usage of computer assisted instructional media in the teaching of CRS. From the findings, some instructional materials had mean score of 2.1 and above, while multi-media, CRS computer based documentation and CRS simulated materials had low score of 1.51, 1.47, and 1.43 respectively. Based on the result of the findings, CRS teachers often use computer assisted instructional materials to a large extent

Hypothesis One : There is no significant difference between male and female Christian Religious Studies teachers on the use of Computer Assisted Materials (CAIM) in senior secondary schools

Table 2: t-test analysis of Male and Female Christian Religious Teachers' use of Computer Assisted Instructional Materials

Variables	No	Mean	Sd	Df	t-value	Sig	Decision
Male	22	20.7727	5.13561	73	-.328	.744	Not rejected
Female	53	21.1509	4.28502				

Result in table 2 showed that the calculated t-value -.3238 was obtained with p-value .744 at alpha level of 0.05. Since the p-value is greater than 0.05 alpha value (.744 > 0.05), therefore null hypothesis 1 is hereby accepted. This implies that there is no statically significant difference between male and female Christian Religious Studies teachers on the use of Computer Assisted Materials in Senior Secondary Schools in Ondo State.

Hypothesis Two: There is no significant difference between educational qualifications of Christian Religious Studies teachers on the use of Computer Instructional Materials in senior secondary schools

Table 3: Analysis of variance Educational Qualification

Variables	Sum of Squares	Df	Mean of Squares	F-ratio	Sig
Between Groups	206.444	3	68.815	3.764	.010
Within Groups	1304.436	71	18.372		
Total	1510.880	74			

Table 3 showed the f-ratio value of 3.764 at 3 degrees of freedom which is greater than 0.05, thus the assumption that teachers with varying educational qualifications will not differ in their usage of CAIM was therefore accepted. This means that all the teachers inspite of educational qualification use computer assisted instructional materials in their classroom teaching.

Hypothesis Three: There is no significant difference between experienced and less experienced teachers on the use of Computer Instructional Material in teaching Christian Religious Studies in senior secondary schools

Table 4: Analysis of Variance on Teaching Experience

Variables	Sum of Squares	df	Mean Square	F	Sig
Between Groups	210.372	1	210.372	11.809	.001
Within Groups	1300.508	73	17.815		
Total	151.880	74			

Table 4 showed calculated f-value of 11.808 and P –value of .001 which is lesser than 0.05. Since the value is lesser than 0.05 alpha value ($.001 < 0.05$) therefore the null hypothesis is hereby not accepted. This implies that there is significant difference between the experienced teachers as well as the less experienced teachers in the usage of CAIM in the teaching and learning situations.

Discussion of Findings

This study on the teachers' variables and use of Computer Assisted Instructional Materials (CAIM) in Senior Secondary Schools has provided some findings. Findings of the study revealed that majority of the teachers use Computer Assisted Instructional Materials in teaching Christian Religious Studies but rarely use the multi-media computer based documentation, and simulated materials. This finding corroborates Adekeye (2008) who discovered that audio-visual instructional materials such as CRS softwares, computer based animated materials and internet are not so available despite the fact that these resources are very important for the successful teaching and learning of Christian Religious Studies. This finding is also in line with that of Ukpebor and Emwata (2012) who established that computers and internet are not adequately available and use in schools. Many schools may have computers and smart phones but only few of them have access to the internet. Moreover, power supply is another problem being faced in these schools.

The study further revealed that teachers' gender is not a significant variable in the use of Computer Instructional Materials in Senior Secondary Schools. The findings disagreed with Adekeye (2008) who discovered that a significant difference exists in the use of instructional resources between male and female teachers in the teaching of Christian Religious Studies and Umar (2010) whose findings also showed that a significant difference exists between male and female social studies teachers in the use of instructional media.

Finding of the study also revealed that teachers' educational qualification is not a significant variable in the use of computer Assisted Instructional Materials in Senior Secondary Schools. The findings disagreed with Umar (2010) whose finding showed that a significant difference exists between qualified and unqualified teachers of Islamic Studies in the use of instructional media and Okonkwo (2002) who found out that teachers with degree certificate made a better use of instructional media thereby produced the highest scoring while the NCE holders followed

In this study, the finding also showed that teaching experience is not a significant variable in the use of computer assisted instructional materials (CAIM) in senior secondary schools for the teaching of Christian Religious Studies. The finding corroborates Yusuf (2007) finding who discovered that there is no significant difference between the experienced and less experienced and more experienced Christian Religious Studies teachers in their use of instructional

resources while it disagreed with that of Adekeye(2008) who established that experienced Islamic studies teachers use instructional media more than the less experienced teachers.

Conclusion

Based on the findings of this study, the following recommendations were made:

1. All senior secondary school teachers should be encouraged to be computer literate and use Computer Assisted Instructional materials for teaching.
2. Regular workshops, seminars and in-service training should be organised for teachers to enable them acquire the necessary skills and update their knowledge on the importance and proper use of instructional software in teaching Christian Religious Studies.
3. Curriculum developers and other policy makers should include internet, information retrieval skills in the school syllabus/curriculum for teachers to facilitate teaching and learning of Christian Religious Studies.
4. Capacity building on the use of CAIM should be mounted for teachers.

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