Effects Of Computer-Assisted Oral English Instructional Program On High School Students In Rural Areas In Nigeria

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Abstract

One of the key criteria to evaluate the development of any country is by her ability to explore computer knowledge. Based on this assertion, this paper examined the effects of Computer-Assisted Oral English Instructional Programme (CAOEIP) on the performance of high schools students in the rural areas of Nigeria. The study focused on two aspects of information and communication technology (ICT) namely animation and digital Video compared with conventional method of teaching. Two hundred and seventy (270) students were drawn from 6 high schools within the rural areas. The experimental groups were administered a Pretest and Posttest with the use of animation and digital video while control group was taught using conventional method. After six weeks of intensive teaching with animation and digital video instructional media, the students were assessed using Oral English Concept Achievement Test (OECAT), an instrument developed by the researcher. ANOVA and t-test were used for the data analysis. Results show that the experimental group taught with animation and digital video (CAOEIP) performed better than those with conventional method. Recommendations were made based on the findings of the study.

Keywords: *Computer; ICT; CAOEIP; Nigeria*

1.0 Introduction

With the increasing accessibility of technology in our everyday life, the utilization of Information and Communication Technology (ICT) cannot be over emphasized. Studies have revealed great improvement when multimedia instruction was administered on learners. Furthermore, researchers have found that there is significant difference between the performances of students taught with 3-D animation ofcomputer and manual animation in sound effects(Onasanya, 2002). In addition, Bell and Bull (2010) observed that there is great improvement on the performance of students when animation and digital video were used as multimedia instructional package. It is no doubt that computer animation and digital video were aimed at individualized learning since it creates room for learners to learn at their own pace.

Over a decade, rural areas have been posed with various challenges ranging from political, economic and educational amongst others. This study is focused on the educational challenges, particularly in the aspect

of teaching and learning of Oral English. One major challenge towards the development and growth of rural schools is their locations. Others include inadequate infrastructures, few number of qualified teachers, poor method of teaching and nonchalant attitude of the students in the subject. As a result schools in rural areas have always been left out when it comes to the use of computer assisted instruction. In addition, environmental factor has been another vital reason for students' poor performance in Oral English. These problems have demoralized the efforts of the teachers of English in the rural areas. This study is an attempt to seek a plausible solution towards effective teaching and learning of Oral English in the rural areas of Nigeria.

1.1 Research Questions

(1) Is there any difference in the performance of students exposed to the CAOEIP and those taught using conventional instruction in the rural areas?
(2) What is the general attitude of rural students towards CAOEIP?

1.2 Research Hypotheses

Based on the research questions the following null hypothesis was formulated

HO_1: There would be no significant difference in the performance of the students exposed to CAOEIP and those taught using conventional instruction methods.

1.3 Significance of the Study

The success of any programme requires the active participation of every user and not just the tolerance of its functioning. Therefore, an empirical evidence of developing and evaluating a CAOEIP for teaching of Oral English could justify its innovation if use by teachers and all other personnel including the students to whom it was designed for.

2.0 Literature Review

In order to be able to develop a meaningful instructional package, its basis must be deeply rooted in the instructional system designed by experts via learning theories and instructional models. Learning theories are theoretical frameworks that describe how information is absorbed, processed and retained during learning. It brings together cognitive, emotional, environmental influences and experiences for acquiring, enhancing or making changes in one's knowledge, skills, values and world views (Brooke, 2006). Hence, is necessary to design an instruction that will meet up with the need of its environment as it is more suitable to the learner`s control of such environment.

There are over 40 models and any of these design models would greatly enhance the educational process. Whether it is ADDIE's (2005), Dick and Carey (2005) or Morrison, Ross and Kemp's (2000), the important thing is to remember that learning should be the focus. Any good instructional material should put individual differences into consideration (Thompson, 2001). The Dick and Carey approach took into consideration the learners and their environments, as well as the need to constantly examine and readjust instruction to ensure improvement in the instruction itself. It enables designers to be thorough and appropriately steered through the instructional design process. Nevertheless, three main principles are identified for every approach:

(I) Identify target audience and develop strategies for meeting their needs (Analysis and Design)
(ii) Develop materials and pilot it (Development and Implementation)
(iii) Finally checking the piloted materials to see its effectiveness (Evaluation). Whatever the approach,

they are all based on the principles of one or more learning theories such as behaviourism, cognitivism and constructivism.

Ertmer and Newby (1993) compared and contrasted behaviorism, cognitivism and constructivism. It was felt that the instructional approach used for novice learners may not be efficiently stimulating for a learner who is familiar with the content. They do not advocate one single learning theory, but stressed that instructional strategy and content addressed depend on the level of the learners. Recently, Mayer (2001) multimedia theory suggested seven design principles.According to Mayer (2001) (a) visuals for low knowledge and high-spatial learners. (b) using words and pictures rather than words alone, placing words and visuals close together,simultaneously presenting words and pictures (c) Excluding extraneous words, pictures and sounds (d) using animation and narration rather than animation and on-screen text or animation, on-screen text and narration that focus specifically on the interaction of audio, text, and visuals in a number of controlled experiments.

Based on the Multimedia principle the use of video and animation instructional media in the CAOEIP package is aimed at captivating and instilling long lasting learning experience on the learners. Clark and Mayer (2003) observed that when pictures and graphic designs are meaningfully combined to coordinate information, processing activities cognitively will improve users' learning abilities

Rhodes (2004) found that standard variety, which is the standard English being spoken by the elites, is facing the problem of contention from the non-standard variety. This problem is common to all Anglo-phone countries. Hedge (2000) observed that despite various problems facing Oral-English, urgent attention needs to be given to the area of fluency and accuracy in speech. Brown (2001) discovered that the risk of making mistakes in their utterances caused anxiety. Kang (2002) stated that age, social-cultural and affective factors are identified as contributive factors to failure in English Language. .

Today, advancement in technology has made it possible to produce materials and devices that could be used to minimize teachers talk and at the same time, make the message clearer, more interesting and easier for the learners to assimilate (Onasanya, Adegbija, Olumorin&Daramola, 2008).Nigeria is a country and just like other neighboring countries, she is faced with problem of interference of L1 with L2, which has been the major hindrance to the learning of Oral- English (Otegbayo, 2006). Furthermore, Tony (2004) observed that learners' failure was as a result of crude method of teaching and lack of adequate knowledge of the Oral-English by the teacher. Lawal (2001) revealed that inability of the teachers, learners and parents to view the learning of Oral-English from hearing and listening perspectives makes teaching and learning difficult. If Computer-Assisted Instruction is developed to teach it, there will be improvement.

Tony (2004) reported that the use of audio tape and video tape as instructional media on Oral English enhanced performance in learners. Ikwuka, (2010) revealed that the aim of teaching Oral English is to enhance communicative competence in learners. Oral expression boosts eloquence, articulation, enlightenment, education, and entertainment. Tswanya (2006) reported that Computer-Assisted Language Instruction (CALI) is moving fast to meet the demand of the digitalized world by integrating technology into teaching and learning of English as a second Language (TLESL). The aim of this study is to scrutinize the effects of Computer-Assisted Oral English Instructional Programme (CAOEIP) on rural areas' students.

3.0 Methodology

This study was an experimental research which employed a quasi-experimental pretest and post-test control group design. The population for this study comprised of 270 students. All from high schools from six various rural areas in the Southwestern part of Nigeria. Three schools each were purposefully selected for experimental and control groups. 45 students were the target respondents randomly selected from each school. A total number of 135 students were randomly selected for experimental group. The students' age ranges from 15-19 years.

The research instruments used for data collection were (i) Treatment instrument CD-ROM of CAOEIP (ii) Students' Response Opinionnaire (iii) Oral English Concept Achievement Test (OECAT). The instrument consist of fifty (50) multiple choice questions drawn from West African Examination Council (WAEC) and National Examination Council (NECO) past questions.

The study used Computer Assisted Instructional medium to administer individualized learning to the students. The pre-test was administered before the learning took place and after six weeks of lessons,post-test was administered. After the lessons, the students were given the designed instrument known as "Students' Response Opinionnaire". It comprised of ten items requesting for learners' opinion about the package used for them. Selected teachers were used to carry out the teaching at the other schools using conventional method at the same time and pre-test was administered with the use of the designed 'Oral English Concept Achievement Test' OECAT before the lessons commenced and after six weeks of teaching, post-test was carried out with the use of OECAT. The reliability of the instruments was valued as follows: "Students' Response Opinionnaire" 72.5and OECAT 81.06

4.0 Results

Research Question1:Is there any difference in the performance of students exposed to the CAOEIP and those taught using conventional instruction in the rural areas?

There will be no significant difference between the mean scores of rural students taught Oral English expression with the use of CAOEIP and those taught with Conventional method.

Table 1 shows the comparison of mean scores of School I experimental group 1, pretest and posttest ranges from 13.04 to 35.21. School I1 and control group I pretest and posttest ranges from11.14 to 25.42. School III experimental group II ranges from 14.87 to 56.23. School IV control group II ranges from12.05 to 26.64 and School V experimental group III ranges from 14.51 to 55.18 while School VI control group III pretest and posttest ranges from 12.02 to 27.35 The result revealed that students taught with CAOEIP in all the rural schools performed better than those taught with Conventional method. Therefore, the research hypothesis rejected the null hypothesis at the 0.05 level of significance.

Table 1: Inferential statistics comparing mean standard deviation and t-test of experimental groups I, II, III and the three control groups on pre-test and post-test.

			Pretest		Posttest				
Variable Rural Schools I-VI	N	df	Mean X	SD	Mean X	SD	t-value calculated	t-value critical	Significant level
School I ExpI	45	88	13.04	2.02	35.21	6.42	0.571	1.67	0.000
School II Control I	45		11.14	2.07	23.42	3.22			
School III Exp II	45	88	14.87	1.53	56.23	7.06	0.516	1.68	0.000
School IV Control II	45		12.05	2.05	26.64	7.74			
School V Exp III	45	88	14.51	1.39	55.18	7.04	0.571	1.68	0.000
School VI Control III	45		12.02	2.03	27.35	7.65			

*****Significant at 0.05 level.

Research Question 2: What is the attitude of students towards CAOEIP?

In order to answer research question 2, the attitude of rural students towards *CAOEIP* were sorted and subjected to percentages as shown in Table 2.

Table 2 shows that out of the 135 students that were involved in students opinionaire on CAOEIP, 105(77.8%) believe that the package was very appropriate 28(20.7%) opined that the package was appropriate while 2 (1.5%) opined that it was fairly appropriate. Therefore, the total positive response was 135 (100%) and total negative was 0 (0%). This implies that the use of CAOEIP facilitates positive attitude towards learning of Oral-English in the rural areas.

Table 2: ***The Students' Responses on 'Students Opinionnaire' (SO)***

SN	**sstatement Items**	**4. V. APP**	**3. APP**	**2.F/APP**	**1.INAPP**
1	The instruction using software held my attention more than the method my teacher uses to teach me	108(80%)	27(20.0%)	0(0%)	0(%)
2	The messages in the package are easy to understand	99(73.33%)	36(26.67%)	0(0%)	0(0%)
3	The content of the software has been well sequenced	63(46.67%)	72(53.33%)	0(0%)	0(0%)

4	The illustrations in the software are very clear to me	126(93.34%)	6(4.44%)	3(2.22%)	0(0%)
5	The examples used in the various cases in the software are very relevant.	111(87.42%)	21(15.56%)	3(2.22%)	0(0%)
6	There is a proper transition between Conceptsi.e. simple ones lead to more complex ones.	114(84.44%)	21(15.56%)	0(0%)	0(0%)
7	The colors used for the various presentations are quite appealing.	117(86.67%)	18(13.33%)	0(0%)	0(0%)
8	The tests and exercises in the software measure the knowledge and skills taught.	129(95.50%)	6(4.44%)	0(0%)	0(0%)
9.	Package makes learning real to me	96(71.11%)	39(28.89%)	0(0%)	0(0%)
10.	Package is accessible on internet	78(57.78%)	57(42.22%)	0(0%)	0(0%)
	Total	1041(77.1%)	303(22.4%)	6(0.5%)	0(0%)
	Average	105(77.8%)	28(20.7%)	2(1.5%)	0(0%)

5.0 Discussions

Studies by Hardison (2004) and Pennington and Ellis (2000) have shown that computer technology can help second language learners learn prosodic patterns if the computer tasks focus learners' attention on developed packages. Miller (2006) Hahn and Hahn 2007, Sardegna and Molle (2008) all agreed on the strategy of individualized learning that the use of computer-assisted instruction in instruction on pronunciation enhanced performance in learners. It was reported that the treatment groups exposed to self-directed computer-assisted practice using the Cued pronunciation performed better than the control groups that were not exposed to any treatment. Belcher (2004) gave a brief example of the integration supported with the use of new technologies such as video cameras, network computers and the internet facilities proved that technology facilitates learning.

Several researchers have developed and utilized various computer-assisted instructional media in New York, Seattle and West Africa respectively to enhance effective learning and teaching. Their aims were to determine whether (CAI), (CALL) and (CAP) will promote teaching and learning of Oral-English in high schools. Plass and Jones (2005) revealed that multimedia instruction enhanced effective learning of second language acquisition. Warschauer (2002) revealed that CALL is an integrative medium which bridges the gap between learners and learning itself. Hence, outperform the traditional instruction method. Other researchers with similar opinion are Schnotz 2005, Rocap 2003 and Mayer2005.

When CAOEIP was used on the experimental group in the rural and urban settings the students' performances were significantly influenced. The pre-test and posttest scores of the students in the groups indicated the effectiveness of the CAOEIP over Conventional Instruction. The results established that CAOEIP instructional media has brought ample and significant improvement in the teaching and learning of Oral-English than conventional instruction.The better performance of the experimental groups over the control groups can be due to their exposure to information or resources on the internet which gives students an active role of individualized learning. The results obtained were consistent with the previous research on the pronunciation

instructional materials that enabled students to learn at their own pace during learning of pronunciation outside the classroom.

Britain et al (2004) cited that when students were exposed to computer-assisted learning, attention of the learners were more on learning and effective learning was enhanced AECT (2008) reported that exposure of learners to computer-assisted instruction permit learners to learn at their own pace thereby enhancing performance. However, it further said that it encouraged laziness in learners and made learners' computer friendly. Nonetheless, this research has created sensitivity in learners through the interactivity with computer inform of self-assessment and provision for further trial until mastery is proved. Like any other computer based instruction this research makes learning conducive to learners irrespective of the prevailing factor like environmental or instructional materials. This result shows that the CAOEIP is interactive and exciting, hence it can reinforce desirable behavior or positive attitude towards learning of Oral-English. It implied that the CAOEIP met up with the purpose for which it was designed.

6.0 Implication of the Findings

Based on the findings of this study, there are strong implications for teaching and learning of Oral-English concepts in high school students in Southwest Nigeria. It is an indication that performance of students in learning Oral-English concept would be greatly improved if students are exposed to computer-assisted instructional strategy such as CAOEIP. Furthermore, it makes learning real and improves the integration of ICT in the rural high schools not only in English language but also in all other subjects.

7.0 Conclusion and Recommendations

This research has led to development of multi-media integrated model as one of the major contributions to the body of knowledge. Other researchers can study it, adopt or adapt it. It can be used by both rural and urban students and teachers of English**.** The government through the Ministry of Education should improve on funding ICT. Facilities for instruction that enhances effective teaching and learning should be provided. Effort should be made to install ICTinstruction materials in both rural and urban high schools in Nigeria. It is expected that such effort will result in the success of integration of computer education.

The following conditions should be met to ensure effectiveness of ICT integration in the teaching and learning of Oral English expression:

1. Rural schools should be provided with ICT facilities to enable them have direct access to its use.
2. To train teachers to be computer literate.
3. Workshop and seminar should be organized to update the teachers' knowledge periodically.
4. Computer training should be one of the pre-requisite for giving teaching appointment in the both rural and urban.
5. National Union of Teacher should invest the union's money soft loans for purchase of laptops and desktops for teachers both in the rural and urban areas
6. Government should provide schools with language laboratory to enable them carry out practical aspect of the subject.

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