

Effect of Communicative Language Teaching Approach on SS 2 Science Students' use of English Passives in Katsina-Ala Lga of Benue State, Nigeria

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Abstract— This article reports a study that sought to determine if the communicative language teaching approach was more effective than traditional grammar translation in enabling SS II science students to make use of the passive voice to report science experiments. 150 SS II science students consisting of 62 male and 88 female students in two schools in Katsina-Ala, Benue State, Nigeria participated in the experiment which lasted for six weeks. Two intact classes with a similar English proficiency levels were used and one each group received a total of twelve lessons each lasting for forty minutes. Two research questions were asked and hypotheses tested at $P < .05$ level of significance to confirm the answers. Data were collected through an Achievement Test on English Passives (ATEP) designed by the researcher and analyzed using descriptive statistics, ANCOVA and paired-sample *t*-test. The findings indicated statistically significant difference between the experimental and control groups with the experimental group showing better performance in all the two variables namely (a) sentence transformation from the active to the passive voice, and (b) use of passives to report science experiments. Based on the findings it was concluded that students learn the passive voice better through the communicative approach than with traditional grammar translation. The researcher therefore, recommended that communicative language teaching should be adopted in secondary schools since it was found to enhance the learning of the English passives.

Keywords— English Passives, teaching approach, SS II science.

I. INTRODUCTION

The nations of the world attach a lot of importance to the study of science since most of man's discoveries, which aim at improving the quality of life and fostering development are pioneered by scientists. One of the basic learning

activities for science is report writing. Students learning science are required to write reports in English to describe the experiments they conduct in school. For such students to satisfy the requirements of the subjects as well as be understood by their readers, they must demonstrate some familiarity with the language of science, the layout of science reports, the conventions regarding what should be included in the different sections of such reports (Dudley-Evans, 1989). Proficiency in English language will guarantee good report writing and also enhance the learning of other subjects.

The passive voice is a prominent and regular feature of the language of science and technical writing. In fact, the passive voice is considered mandatory in report writing because it is used to convey objectivity in presentation. Since the focus of science is to de-emphasize action but stress results of actions, the passive voice is considered more appropriate than the active voice. Furthermore, the passive voice is used to conceal information about the person carrying out the action.

Unfortunately, we have seen evidence from research (Aliyu, 2001; Iwuala, 1986; Zhiko, 1990) and this is also supported with classroom experience that students not only find the learning of the passive voice difficult, but the passive voice itself is one of the prominent language forms neglected in many language textbooks.

II. THE PROBLEM

There is research (Aliyu, 2001; Iwuala, 1986; Zhiko, 1990; Hinkel, 2002) and classroom evidence that many learners of English as a second language find the learning and use of the passive voice extremely difficult. Having marked students' WAEC and NECO scripts for many years, the researcher has found proof that many students cannot clearly distinguish between active and passive sentences let alone convert active sentences to passive ones or from the

passive to the active voice. A large number of students cannot justify why the active voice is more appropriate in one situation than the passive voice and vice versa. Another aspect of the problem lies with students' inability to correctly identify pattern of agreement between the subject of a sentence and a verb when a sentence is transformed from its active to the passive form.

Research investigation by Tafida (2006) has shown that sometimes the learner's L1 accounts for the difficulty experienced by L2 learners in the learning of the passive voice. Tafida (2006) explains that many Nigerian languages have only the active voice, a feature which makes active-passive transformation a difficult area. Again, she notes that the past participle form which constitutes a major component of the passive verb is absent in most Nigerian languages.

III. THEORETICAL/CONCEPTUAL FRAMEWORK

This study is anchored on the theory of communicative competence which according to Wardhaugh (1998) was developed by Dell Hymes. This theory emphasizes that the most effective way to learn a language is by using it. Hymes (1972) defines communicative competence in terms of the capability of a person which embraces both (tacit) *knowledge* and (ability for) *use*. Communicative competence embraces one's knowledge of syntax, morphology, phonology as well as the knowledge about how and when to use utterances appropriately. In summary, communicative competence means the ability to use language to do the things that people do with language. This theory was developed as an opposition theory to 'linguistic competence' believed to centre on the speaker's ability to produce grammatically correct sentences. Whereas linguistic competence aims at competence for grammar, communicative competence aims at competence for use.

Hymes (1972) justifies why he developed the communicative competence theory that has become the pedestal for the communicative language teaching approach and this has been well captured in Richards and Rogers (1986, p.72) to cover the communicative principle (i.e. activities that involve real communication promote learning), the task principle (activities in which language is used for carrying out meaningful tasks that promote learning), and the meaningfulness principle (language that is meaningful to the learner supports the learning process).

Some studies (Li, 2003; Rao, 2002; Al-Twairish, 1990; Dandam, 2002; and Rinji, 2006) have found evidence that students taught with the communicative language

teaching approach perform better than those taught with traditional teaching method.

PURPOSE OF THE STUDY

The purpose of this study is to investigate the effectiveness of using the communicative approach in improving SS II science students use of the English passives in Katsina-Ala LGA of Benue State.

RESEARCH QUESTIONS

This study was designed to provide answers to the following questions:

1. What is the relative effect of using the communicative approach and conventional method on students' mean achievement scores in a test on sentence transformation from active to passive voice?
2. What is the relative effect of using the communicative approach and conventional method on students' mean achievement scores in a test on use of passives to report science experiments?

Hypotheses

To seek answers to the aforementioned questions, the following hypotheses (H_0) were generated for testing:

1. There will be no significant difference in the mean achievement scores of the experimental and control groups in a test on sentence transformation from active to passive voice.
2. There will be no significant difference in the mean achievement scores of the experimental and control groups in a test on use of the passive voice to report science experiments.

IV. METHOD

This study is a non-equivalent quasi experiment that makes use of the pre-test post-test design. The researcher used this method because it was difficult to randomize the subjects. Ali (2006) recommends that when it is not possible to randomly sample and assign subjects to groups, the researcher may use groups already in existence. The researcher used four intact classes and randomly assigned them to experimental and control conditions by deciding through the flipping of a coin which group should be experimental and which should be control.

Population

A sample of 150 male and female science students aged 13—18 were drawn from all the three arms of SS II class of

secondary schools in Katsina-Ala Local Government Area of Benue State. The study involved SS II students during the 2011/2012 academic session. The researcher chose this class because the class was not due to take any external examination like WASSCE or NECO during the period of the study; hence the problem of interfering with these public examinations was eliminated.

Research Instrument

The researcher constructed an Achievement Test on English Passives (ATEP) following Lien’s (1976) principles of test construction namely (a) preliminary steps (b) actual steps (c) evaluation of actual steps. The ATEP consisted of 50 structured questions the aim of which was to measure cognitive knowledge and skills on the passive voice. The ATEP was divided into two major parts (descriptive and analytic). The descriptive part elicited demographic information on the participants such as name of school, sex, and age. The analytical part consisted of two major tasks to test different skills on the passive voice. The ATEP tested application of the knowledge of grammar in a real language situation (i.e. using it in reporting science experiments). Total score was 100%. A training programme on the various aspects of the passive voice was designed for the experimental group, which lasted for two weeks was made up of twelve (12) written lesson plans while each of the lessons lasted for forty minutes. The control group however was taught topics in English using the conventional method. The researcher enlisted the assistance of two of the teachers teaching in the two schools selected to assist the treatment and data collection. On the validity of the instrument, three experts in the fields of language education and educational measurement evaluated the suitability of the instrument. The reliability coefficient of the achievement test using Cronbach alpha was 0.70. This value was considered

appropriate because it conforms to the benchmark value recommended by Nunnally (1978) and Pallant (2005). This provided enough grounds to conclude that the instrument was reliable to use for data collection for the study.

Method of Data Analysis

Data for this study were analyzed using descriptive statistics, Analysis of Covariance (ANCOVA) and paired-sample t-test. The pre-test to post-test intervention differences for each group was tested with 2-tailed paired-samples t-test. For all analyses, an alpha level of 0.05 was chosen to indicate statistical difference. All statistical analyses were performed by means of the Statistical Package for the Social Sciences—SPSS (Windows version 11.0, Chicago, IL, USA) and presented in tables. All hypotheses were tested at a probability level of 0.05 to indicate statistical significance.

V. RESULTS

Sentence Transformation from the Active to the Passive Voice

The effects of the communicative approach on students’ mean achievement scores in a test of sentence transformation from active to the passive voice were assessed by comparing the changes in scores obtained by the participants from pre-test to post-test. The results which were used to answer research question 1 are presented in Table 1 below.

Question 1:

What is the relative effect of using the communicative approach and conventional method on students’ mean achievement scores in a test on sentence transformation from active to passive voice?

Table.1: Mean Scores and Standard Deviation of Participants in an Achievement Test on Sentence Transformation from Active to the Passive Voice

Group	Variable	Time period	N	Mean	SD
Exp.	sentence transformation	Pre-test	76	12.0	4.5
		Post-test	76	13.2	4.2
Control	Sentence transformation	Pre-test	74	10.3	5.3
		Post-test	74	10.1	5.1
Total			150		

Table 1 presents the performance of the participants in the achievement test on sentence transformation from the active to the passive voice and vice versa. The result indicates that the mean achievement scores of the experimental group in the pretest was 12.0 (SD=4.5), while at post-test it was 13.2 (SD=4.2). Here, there was a percentage change of 10%. For

the control group, their mean achievement score in the pretest was 10.3 (SD=5.3) while at post-test, it was 10.1 (SD=5.1) accounting for only -1.9%. Here too, the post-test mean score of the experimental group was higher than the pre-test. The difference between the means can be attributed

to the effect of the intervention. Hypothesis 1 was therefore tested to confirm our answer. The analyzed data for testing hypothesis 1 are presented in Table 2 below.

Hypothesis 1
 H₀1: There will be no significant difference in the mean achievement scores of the experimental and control groups in an achievement test on sentence transformation from active to passive voice.

Table.2: ANCOVA Summary on the Effectiveness of Sentence Transformation Using the Communicative Approach

Source of Variation	SS	df	MS	F-ratio	P-value	ES
pre-test	1871.4	1	1871.4	203.8	0.0005	0.58
between group	122.6	1	122.6	13.4	0.0005	0.08
within group	1349.7	147	9.2			
Total	24159.0	150				

Table 2 presents the analyzed data for testing hypothesis 1. A One-way between group ANCOVA was conducted to compare the effectiveness of using the communicative approach between the experimental and control groups. Participants' scores on the pre-intervention test were used as the covariate ($F_1, 147=203.8, p<0.0005$). After adjusting for pre-intervention scores, there was a significant difference between the two groups on the post-intervention scores on sentence transformation ($F_1, 147= 13.4, P<0.0005$) with the experimental group showing better performance. Further analysis ($ES=0.08$) indicated that sentence transformation accounted for 8% of the variation in the dependent variable. This shows only a small effect size. The results in Table 2 above suggest that the difference between the mean achievement scores of the experimental

and control groups is significant at .05 alpha level. The null hypothesis was therefore rejected.

Use of the Passive Voice to Report Science Experiments

The effects of the communicative approach on students' mean achievement scores on the use of passive verbs in reporting science experiments were assessed by comparing the changes in scores obtained by the participants from pre-test to post-test. The results which were used to answer research question 2 are presented in Table 3 below.

Question 2:

What is the relative effect of using the communicative approach and conventional method on students' mean achievement scores in a test on use of passives to report science experiments?

Table.3: Mean Scores and Standard Deviation of Participants in an Achievement Test on Use of Passives to Report Science Experiments

Group	Variable	Time period	N	Mean	SD
Exp.	Reporting experiments	Pre-test	76	1.7	2.4
		Post-test	76	10.7	4.8
Control	Reporting experiments	Pre-test	74	1.9	3.2
		Post-test	74	2.5	2.8
Total			150		

Table 3 above presents the performance of the participants on the use of the passive voice to report science experiments. The results indicate that the experimental group earned a mean score of 1.7 (SD=2.4) at pretest and 10.7 (SD=4.8) at post-test bringing the total percentage change to 529.4%. The control group however had a mean score of 1.9 (SD=3.2) at pretest and 2.5 (SD=2.8) at post-test accounting for total percentage change of 31.6% only.

As can be clearly seen, in each section of the test, the post-test means of the experimental group are far greater than the pretest means. This was an indication that the students in the experimental group who were taught using the communicative approach achieved better in the achievement test on the passive voice than those students who were taught using the traditional approach. The significance of the difference in these means was tested in

the hypotheses. The analyzed data for testing hypothesis 2 are presented in Table 4 below.

Hypothesis 2

H₀ 2: There will be no significant difference in the mean scores of the experimental and control groups in an achievement test on use of the passive voice to report science experiments.

Table.4: Pre and Post Training Scores on the Use of the Passive Voice in Reporting Science Experiments

Test	Exp. (n=76)	% Δ	t-value	Control (n=74)	% Δ	t-value	
Pre-test	1.7±2.4	523.5	14.301	1.9±3.2	31.6	1.774	
Post-test	10.6±4.5			2.5±2.8			
			P<0.0005				p=0.08

Table 4 presents the result of the performance of the participants in the test on the use of passives in reporting science experiments. A paired samples t-test was calculated to evaluate the effect of the intervention on the dependent variable. The experimental group demonstrated significant improvement at post-testing on the test of use of passives to report science experiments ($t(149)=14.301$, ($p<0.0005$; effect size=0.39). This effect size showed a moderate effect of the communicative approach on this variable. Specifically, the result indicated that 39% of the improvement on the test of use of passives in science report writing was accounted for by the communicative approach. The control group did not show any significant improvement from pre-test to post-testing ($t(73)=1.774$ $p=0.80$; effect size =0.041). The hypothesis which states, “There will be no significant difference in the mean scores of the experimental and control groups in an achievement test on use of the passive voice to report science experiments” was therefore, rejected.

VI DISCUSSION

The result of the study has shown that students taught using the communicative approach had a higher mean achievement scores in all the two aspects of the passive voice tested. Summary of results are found in Tables 1, 2, 3, and 4. The two aspects of the passive voice tested were: Sentence transformation from the active to the passive voice, and use of the passives to report science experiments. The answers were further confirmed by ANCOVA and paired samples t-test summary results contained in Tables 2 and 4 which revealed that the difference in achievement between the experimental and control groups was significant. This implies that using the communicative approach was more effective in improving students’ achievement in learning the passive voice than the traditional method.

The result of the present study is similar to the findings by Li (2003), Rao (2002), Al-Twairish (1990), and

Rinji (2006) who found evidence that students taught using the communicative language teaching approach performed better than those taught with grammar translation.

In the present study, the high mean achievement scores recorded by the experimental group could be attributed to a number of factors which include:

- (i) The effect of the training programme which places emphasis on communicative competence as the goal of teaching. The use of pair /or group work such as switching roles in dialogue or interrogation, oral presentations such as introducing oneself using the active and passive voice, role play and dramatization, etc. accounted for the success of the programme.
- (ii) Motivation. The communicative activities aroused students’ interest and made learning an enjoyable experience.
- (iii) Emphasis on fluency. With communicative language teaching, emphasis was not on grammatical accuracy but on fluency.
- (iv) Instruction with the communicative approach focused on meaning.

As clearly shown from the review of literature, previous research (1971; Aliyu, 2001; Iwuala, 1986; Zhiko, 1990, Hinkel, 2002) has shown that the English passive voice constitutes a difficult area to non-native speakers of English. Iwuala (1986), Zhiko (1990), and Tafida (2006) attribute this difficulty to the absence of the passive voice in the native languages of the students learning English either as a second language or as a foreign language. The result of the present study suggests that using the communicative approach has made a difference in helping students to understand, learn and use the passive voice in an appropriate context. Learning the passive voice only as a grammar item has not been as helpful as letting the students discover the various contexts (for example, using it in reporting science experiments) in which the

passive voice can be used. The result of this study underscores the interdependence between a sound theoretical knowledge of the passive voice and science report writing. The researcher would like to emphasize that a basic understanding of the passive voice is not only essential but mandatory in helping students at the senior secondary school level to learn and communicate science report clearly and acceptably. Furthermore, the study stresses that language learning in context is more meaningful to the students than general English.

Recommendations

Based on the findings of the study, the researcher hereby makes the following recommendations:

1. Sensitization workshops on new teaching methods, of which communicative language teaching is among should be organized for teachers teaching English as a second language.
2. Language teaching should encourage pair and group work for the learners and teachers should introduce activities that foster interaction among students.
3. Teachers should make efforts in identifying students' learning needs before teaching. This will be helpful in lesson planning, choice of instructional activities and materials.
4. Teachers should make games and role play part of their lessons. Teachers should not dominate teaching sessions but should allow students ample opportunities to participate actively in their lessons.
5. Language teachers should integrate the four basic language skills in their lessons so that one skill facilitates the learning of others.
6. The use of language laboratories should form part of the language programmes right from the secondary level of education. Where it is not possible to provide one, audio tapes, Compact Discs (CDs) and videos should be made available to avail students of the opportunity to listen to model resource persons or recorded speech of native speakers.
7. Language testing techniques should be reviewed to align with communicative language teaching. This therefore, means that provision has to be made for testing of oracy skills (listening and speaking) practically.

VII. CONCLUSION

The present study provides evidence that using the communicative approach can improve students'

understanding and use of the passive voice in an appropriate context. Learning the passive voice merely as a grammar item has not been as helpful as letting the students discover the various contexts in which the passive voice can be used. In other words, the communicative approach aims beyond grammatical competence even though grammatical competence helps to increase communicative competence (Lee & Wang, 2007). The result of the study suggests that the communicative approach will help students to learn the passive voice in a simpler and more meaningful way.

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