EFFECT OF COGNITIVE APPRENTICESHIP INSTRUCTIONAL STRATEGY ON SECONDARY SCHOOL STUDENTS' ACHIEVEMENT AND RETENTION IN ECONOMICS IN ABAKALIKI EDUCATION ZONE OF EBONYI STATE

Simobi Ozioma Roseline (Ph.D)[1]

&

Samuel Itumo Obaji (Ph.D)[2]

Department of Economics
Ebonyi State College of Education, Ikwo
Email: ozimasimobi@vahoo.com

Abstract

The study explored the effect of Cognitive Apprenticeship Instructional Strategy (CAIS) on secondary school students' achievement and retention in Economics in Abakaliki Education Zone of Ebonyi State. Four research questions and four null hypotheses guided the study. Quasi experimental design was used in the study. The specific quasi experimental design was pretest-posttest non-equivalent control group design. The population of this study comprised four thousand, five hundred and eighty (4,580) SS2 students in Abakaliki Education Zone of Ebonyi State from the sixty-nine (69) co-educational public senior secondary schools in Abakaliki Education Zone of Ebony State. The sample of this study consisted of one hundred and ninety-eight (198) SSII Economics students in two co-educational secondary schools. Intact classes were used. There are sixty-eight co-educational public secondary schools in Abakaliki Education Zone. The instruments for data collection were Economics Achievement Test (EAT) and Economics Retention Test (ERT). The instruments for data collection were Economics Achievement Test (EAT) and the Economics Retention Test (ERT) together with the lesson plans with reliability index of 0.93. The experimental group was taught using Cognitive Apprenticeship Instructional Strategy while the control group was taught using lecture method. The Extraneous Variables were also control by various measures. Pre-EAT was administered to the two groups before treatment by the teachers. At the end of the treatment session, Post-EAT was conducted to determine the retention ability of students. The data collected were analysed using mean and standard deviation while the null hypotheses were tested using Analysis of Co-variance (ACOVA) at 0.05 level of significance. The study revealed that among other things that students taught Economics with Cognitive Apprenticeship Instructional Strategy had higher achievement scores $M=43.21, SD=3.95$, *than those taught with lecture method* $M=36.36, SD=3.67$*; that male and female students taught Economics with CAIS had the same achievement scores after instructional treatment; that students taught Economics with CAIS had high retention ability*$(M=43.63, SD=3.75)$ *than those taught with lecture method*$(M=36.35, SD=4.26)$*, and that gender and instructional methods can bring about students' retention in Economics. Therefore the null hypothesis which stated that there is no significant difference in the mean retention scores of male and female students taught Economics with CAIS and those taught using lecture method was rejected*$F1,193=8.91, P<0.003$*. based on these findings, the study recommended among other things that Economics teachers should be encouraged to use CAIS while teaching Economics concepts*

especially the ones involving demand and supply, wage determination, trade union and Unemployment as it relates to human society.

INTRODUCTION

The position of Economics to the growth of any economy, Nigeria inclusive cannot be underestimated. Economics is a Social science subject that deals with the study of human behaviour and interactions of economic agents and how economic system works (Dewett, 2016). It is an elective field of study at senior secondary education levels in Nigeria that deals with the microeconomic and macroeconomic analyses of basic elements in the economy, including individual agents and markets, their interactions and the outcomes of interactions (Caplin & Schotter, 2008). The above definition shows that Economics is the study of principles of economic system in relation to human interactions. Hall (2013) defined Economics as the study of how individuals, firms and whole societies identify their most important needs, allocate and manage scarce resources in such a way that satisfies as many needs as possible. The knowledge of Economics is a very important social science subject and stands as the bedrock upon which are based many other social science courses like Accountancy, Book-Keeping, Marketing, Government and Sociology among others.

The objectives of senior secondary school Economics according to National Education Research and Development Council (NERDC, 2013: 3) are to "equip students with the basic principles of Economics necessary for useful living and for higher education; prepare and encourage students to be prudent and effective in the management of scarce resources; raise students respect for the dignity of labour and their appreciation of economic, cultural and social values of our society and; enable students acquire knowledge for the practical solution of the economic problems of Nigerian societies and the world at large". Despite the importance of Economics in making a learner an active participant in Nigerian economic development, there is still fluctuation in students' achievement in Economics in internal and external examination in Nigeria (WAEC Chief Examiner Report, 2018-2022). This fluctuation could be directly linked to the method adopted by teachers in teaching and learning (Igboke, 2009). According to Offorma (2016), the method adopted by the teachers must be inclusive to ensure that all learners irrespective of their background are benefited in the instructional process. One of such teaching strategy that appeals to students' interest, goal, learning styles and values in collaborative learning environment is cognitive apprenticeship instructional strategy.

Cognitive Apprenticeship Instructional Strategy (CAIS) was attributed to Collins. Brown, and Newman (1987). According to Cash, Behramnn, Stadf and McDanicIs, 2016), CAIS is an instructional innovation which was introduced to address the problem of inert knowledge. This strategy is deep rooted in Social Learning theories which approach is based on the underlying principle of apprenticeship learning and focuses on the use of such strategies as modelling of behaviour and coaching students to mimic and exert skills until they are competent in their performance. Cognitive apprenticeship components include modelling, scaffolding, coaching,

articulation and exploration (Collins, Brown and Newman, 1987). Teaching and learning through cognitive apprenticeship strategy require Economies teachers making tacit processes visible to learners so they can observe and then practice the skills presented to them. In cognitive apprenticeship classroom, the teachers model the skills or behaviour to be learnt, allow students to reflect by allowing them to discuss the economic problems in group, ask and answer questions and make relevant conclusion. The teacher will also give students support to articulate behaviours exhibited in the classroom, and equally allow them to explore new knowledge (Enkenberg, 2001:503). In view of the following benefit of cognitive apprenticeship instructional strategy by early educators, the researchers wish to explore the relevance of this strategy in teaching of Economics to enhance students' achievement in secondary schools in Abakaliki Education Zone using gender as a moderating variable.

Statement of the Problem

In heterogeneous society like Nigeria, students come to the classroom with different values, abilities, needs and interests which influence their learning positively or negatively. This makes teaching and learning activities cumbersome for Economics teachers. In addition, the researcher visited some schools in the Abakaliki Education Zone and discovered that most teachers still rely in the use of conventional lecture methods in teaching principles of Economics to students at this level. Unfortunately, this method has been proven not effective in teaching student at this level rather can be used in higher level of education. It is imperative to note that this method might not allow students to reflect, imitate behaviour and transfer learning as well as construct meaning of knowledge or principles in Economics since the teacher dominate the classroom activities more than the learner. This situation leads to rote learning and possibly low creativity and poor achievement among students in Economics. Therefore, the problem of this study posed in question form is: what is the effect of cognitive apprenticeship instructional strategy on students' achievement and retention in Economics? This is the problem that was addressed by the present study.

Purpose of the Study

The main purpose of this study was to determine the effect of Cognitive Apprenticeship Instructional Strategy (CAIS) on secondary school students' achievement and retention in Economics in Abakaliki Education Zone of Ebonyi State. Specifically, the study is designed to determine:

1. the achievement means scores of SSII students taught Economics with CAIS and those taught with lecture method.
2. the mean achievement scores of male and female students taught Economics with CAIS.
3. the mean retention scores of SSII students taught Economics with CAIS and those taught lecture methods.
4. the mean retention scores of male and female students taught Economics with CAIS.

Justification of the Study

The government at all level (Federal, State and Local governments) might benefit from the result of the study as students' improvement in Economics would help to reshape the peoples' mind positively on the use of scarce resources. The curriculum planners might benefit from the finding of this study. If the curriculum planners are informed through the findings of the study, it might help them to review and modify the existing Economics curriculum for senior secondary school's coverage in the area of achievement and retention ability. In addition, the findings of the study may benefit teachers as these would help them to be informed of the pedagogical skills needed to be able to teach students in Economics classroom. Curriculum Bodies like Nigerian Educational Research and Development Council (NERDC) can begin to explore these skills needs on their own prior to organized preparation programme for their acquisition by the teachers in Nigerian schools. The students are the recipient in curriculum implementation therefore they would maximize their achievement and retention in schools through the active participation in teaching and learning process.

Scope of the Study

This study is delimited to the effect of Cognitive Apprenticeship Instructional Strategy (CAIS) on secondary school students' achievement and retention in Economics in Abakaliki Education Zone of Ebonyi State The scope of the study covers all SSII students in Abakaliki Education Zone. The content areas covered were production curve, econometric, demand and supply. The study would be conducted in co-educational public secondary schools in Abakaliki Education Zone.

Research Questions

Four (4) research questions guided the study

1. What is the achievement mean scores of SSII students taught Economics with CAIS and those taught with lecture method?
2. What is the mean achievement scores of male and female students taught Economics with CAIS?
3. What is the mean retention scores of SSII students taught Economics with CAIS and those taught lecture method?
4. What is the mean retention scores of male and female students taught Economics with CAIS?

Hypotheses

Four (4) null hypotheses formulated by the researcher were tested at 0.05 level of significance

$\mathbf{H}_{01:}$ There is no significant difference in the achievement scores of students taught Economics with CAIS and those taught using lecture method.

$\mathbf{H}_{02:}$ There is no significant difference in the mean achievement scores of male and female students taught Economics with CAIS.

H_{03}: There is no significant difference in the retention mean scores of SSII students taught Economics with CAIS in Abakaliki Education Zone.

H_{04}: There is no significant difference in the mean retention scores of male and female students taught Economics with CAIS.

METHODOLOGY

In this chapter, the researcher presents the methods and instructional techniques that were used in the study. It involves the design of the study, area of the study, population of the study, sample and sampling technique, instrument for data collection, validation of the instrument, reliability of the instrument, method of data collection, experimental procedure, control of extraneous variables and method of data analysis.

Design of the Study

Quasi experimental design was used in the study. The specific quasi experimental design is pretest-posttest non-equivalent control group design. This design was used where random assignment of subject is not possible (Nworgu, 2006). The choice of this design in this study is because intact classes were used for the study. There was no randomization in order not to disrupt the activities and administrative set up of the schools that were used. The design of this study is represented in the figure below:

1. X1 02
01 -X1 02

Where 01 = test before treatment (pretest)
X1 = Treatment
-X1 = Control Group
02 = test after treatment (posttest)
Non-Equivalent Group

Area of the Study

The study was carried out in Abakaliki Education Zone of Ebonyi State. Abakaliki Education Zone is made up of four Local Government Areas namely Abakaliki, Ebonyi, Izzi and Ohaukwu Local Governments. There are Sixty-Nine (69) senior secondary schools in the Zone. Abakaliki Education Zone was chosen for this work because of the fluctuations in students' achievement in Economics in the area as stated in the background.

Population of the Study

The population of this study comprised four thousand, five hundred and eighty (4.580) SS2 students in Abakaliki Education Zone of Ebonyi State from the sixty nine (69) co-educational

public senior secondary schools in Abakaliki Education Zone of Ebonyi State (Ebonyi State Secondary Education Board, 2018). Out of the population two thousand, one hundred and twelve (2,112) are males while two thousand, four hundred and sixty-eight (2,468) are females. Out of the 69 public senior secondary schools in Abakaliki Education Zone, Abakaliki has 9 schools. Ebonyi has 16 schools, Izzi has 16 schools while Ohaukwu has 28 schools.

Sample and Sampling Technique

The sample of this study consisted one hundred and ninety-eight (198) SSII Economics students in two co-educational secondary schools. Intact classes were used. There are sixty-eight co-educational public secondary schools in Abakaliki Education Zone. Firstly, purposive sampling technique was used to select 2 local government areas from the Education Zone. Secondly, proportionate sampling technique was used to select two (2) co-educational schools and four intact classes or streams for the study (two intact classes for each of the two groups). Eighty-eight (88) students were used for Control Group (43 males and 45 females) while hundred and ten (110) students were used for experimental group (54 males and 56 females).

Instrument for Data Collection

The instruments for data collection were Economics Achievement Test (EAT) and Economics Retention Test (ERT). The EAT consists of multiple choice items. The questions were generated by the researcher from past WAEC question papers. The test contained 50 questions with four options lettered A-D each. Students would choose the correct answers from the list of options provided. The 50 items test are scored two points each (i.e. 100% grading).

The Cognitive Apprenticeship Instructional Strategy Lesson Plans (CAISLPs) and the Lecture Method Lesson Plans (LMLPs) was developed on the Economics contents Labour market covering demand and supply of labour, wage and wage determination, trade union and unemployment. This was used in teaching the research subjects. CAISLPs will be used for the experimental group while LMLPs was used for the control group.

The Economic Retention Test was the reshuffled Achievement Test, which was later re-administer as retention test to the students who have answered the achievement test questions after two weeks. This would help to determine the students who can retain their initial achievement in Economics. The instruments were drawn on the unit labour market covering demand and supply of labour, wage and wage determination, trade union and unemployment topics.

Validation of the Instrument

The instruments for the study, both the Economics Achievement Test (EAT) and the Economics Retention Test (ERT) together with the lesson plans were face validated by three experts: two from the Department of Arts and Social Science Education, (Economics Unit) and one lecturer from the Department of Science Education (Measurement and Evaluation Unit), Ebonyi State University, Abakaliki. The validators looked at the objectives of the study in line with research questions and hypotheses as well as lesson notes and table of specification and corrected the tenses and grammatical errors.

The modifications and corrections of the experts were duly effected in the final draft of the instruments. The table of specification was also validated by the experts who validated the instrument. They vetted the weight given to each topic in the unit of Labour market as well as the weight given to the levels of educational objectives.

Reliability of the Instrument

The instrument for data collection, EAT was administered to 20 students from community secondary school Oshiegbe and Community secondary school Nkomoro that were not selected as the sample schools. Since the instrument is dichotomously scored, Kuder-Richardson Reliability Estimate (K-R20) was adopted. K-R20 version of Kuder- Richardson Reliability Estimate was used since the items are not of the same difficulty level. A reliability index of 0.93 was obtained for the instrument. Item analysis was used to determine the discriminating and difficulty indexes of the instrument.

Experimental Procedures

The experiment lasted for six weeks based on the following step:
Week I: Introduction, briefing and training of experimental teachers
Week 2: Teaching on the content 'demand and supply of labour
Week 3: Teaching on the content 'wage and wage determination'
Week 4: Teaching on the content 'trade union'
Week 5: teaching on the content 'employment'
Week 6: Revision and examinations

Method of Data Collection

Pre-EAT was administered to the two groups before treatment by the teachers. At the end of the treatment session, Post-EAT was administered to the subjects two weeks after the Pre-EAT has been administered to the subjects, the Post-EAT was administered as Retention Test (ERT).

Method of Data Analysis

The data collected through Economics Multiple Choice questions and Retention Test were analyzed using mean and standard deviation for answering the research questions. The Analysis of Covariance (ANCOVA) was used to test the null hypotheses at 0.05 level of significance. It

was used to avoid the error of non-equivalence and reduce the initial group differences due to the non-randomization of subjects and to block off the effect of pretest on posttest by treating the pretest as a covariate.

RESULTS

In this chapter, the researcher presents the results of data analysis based on the six research questions and six hypotheses that guided the study.

4.1 Research Questions

4.1.1 Research question 1: What is t mean achievement scores of students taught Economics with CAIS and those taught using lecture method?

Table 1: Achievement Mean (x) Scores and Standard Deviation (SD) of Students taught Economics with CAIS and those taught using Lecture Method

Groups	**Pretest**		**Posttest**		**Mean diff.**
	X	**Sd**	**X**	**Sd**	
Exp. Group (N=88)	20.72	5.66	36.36	3.67	15.64
Control Group (N=110)	19.25	5.47	43.21	3.95	23.96

Source: Researcher's Field Work, 2023

Table 1 showed the pretest mean and standard deviation of the Control Group(M=20.72,SD=5.66), and that of Experimental Group(M=19.25,SD=5.47). It could be observed that both experimental groups had almost the same achievement level before instructional treatment. It also showed the posttest mean and standard scores of Control Group(M=36.36,SD=3.67), that of the Experimental Group (M =43.21, SD =3.95). This indicated that students in Experimental Group had higher achievement score in Economics than those students in Control Group. It further showed that the mean difference between the pretest and posttest in Control Group was 15.64 and that of Experimental Group was 23.96. This indicates that students in Experimental Group had higher mean gain than those in Control Group. This therefore showed that students taught Economics with CAIS had higher achievement scores than those taught with lecture method.

4.1.2 Research Question 2: what is the mean achievement score of male and female students taught Economics with CAIS and those taught using lecture method?

Table 2: Achievement Mean (X) and standard deviation (SD) scores of male and female students taught Economics with CAIS and those taught using lecture method?

Method		Pretest Scores		Posttest Scores		Mean Diff.
	Gender	N	Mean SD	Mean	SD	

Control Group	Male	43	20.86	5.84	36.33	4.21	15.47
	Female	45	20.58	5.55	36.40	3.11	15.52
Experimental Group	Male	54	18.19	5.37	43.76	3.90	25.57
	Female	56	20.25	5.32	42.68	3.95	22.43

Source: Researcher's Field Work, 2023

Table 2 showed the pretest mean and standard deviation scores of male students in Control Group (M=20.86,SD=5.84), and that of females in the same groupM=20.58,SD=4.21).It also showed the pretest mean and standard deviation score of males in Experimental Group,(M=18.19,SD=5.37),and the females(M=20.25,SD=5.32). It could be seen that male students had almost the same achievement baseline before instructional treatment. The table equally showed the posttest mean and standard deviation score of male students in Control Group(M=36.33,SD=4.21), and the females(M=36.40,SD=3.11).. It equally showed a post-interest mean and standard deviation score of male students in the Experimental Group (M=43.76,SD=3.90),and that of female students(M=43.68,SD=3.95).The result showed that male and female students in the both groups had almost the mean achievement scores. This shows that male and female students taught Economics with CAIS had the same achievement scores.

4.1.3 Research Question 3: What is the mean retention scores of SSII students taught Economics with CAIS and those taught using lecture method?

Table 4: Retention Mean (X) and Standard Deviation (SD) Scores of SSII Students taught Economics with CAIS and those taught using Lecture Method

Groups	**Posttest**		**Post-Posttest**		Mean diff.
	Mean	SD	Mean	SD	
Con. Group (N=88)	36.36	3.67	36.35	4.26	.01
Exp. Group (N=110)	43.21	3.95	43.63	3.75	.42

Source: Researcher's Field Work, 2022

Table 3 showed the posttest mean and standard scores of Control Group. It also showed the post-posttest (retention) mean of the experimental Group(M=43.21,SD=3.95)and standard deviation of students in the Control Group(M=36.35,SD=4.26), and that of experimental Group(M=43.63,SD=3.75). It could be seen that students in the experimental group achieved higher after the posttest. This result showed that students taught Economics with CAIS had high retention ability that those taught with lecture method.

4.1.4 Research question 4: What is the mean retention scores of male and female students taught Economics with CAIS and those taught using lecture method?

Table 4: Mean (X) Retention and Standard Deviation (SD) Scores of Male and Female taught Economics with CAIS.

			Posttest Scores		Post-posttest Scores		Mean Diff.
	Gender	N	Mean	SD	Mean	SD	
Control Group	Male	43	36.33	4.21	37.53	4.54	1.20
	Female	45	36.40	3.11	35.22	3.67	-1.18
Experimental Group	Male	54	43.76	3.90	43.11	3.75	0.65
	Female	56	42.68	3.95	44.14	3.71	1.45

Source: Researcher's Field Work, 2023

Table 4 revealed the posttest mean achievement and standard deviation scores of male students in the Experimental group, (M = 43.76, SD 3.90) and that of females (M=42.68,SD=3.95).Itcould be seen that male and female students in the experimental group had almost the same achievement scores in the same achievement baseline after instructional treatment. It further showed the retention (Post-posttest) mean achievement and standard deviation scores of male students in the Experimental Group (M=43.11,SD=3.75)and that of female students(M=44.14,SD=3.17). The implication of the result is that mean differences that exist between female students in Experimental Group after instructional treatment is insignificant. This indicated that CAIS instructional strategy together with gender can bring about students' retention in Economics. Therefore, CAIS instructional strategy is gender friendly.

4.2 Test of Hypotheses

The four hypotheses were tested with Analysis of Covariance (ANCOVA) at 0.05 level of significance.

4.2.1 Test of hypothesis one: There is no significant difference in the achievement scores of students taught Economics with CAIS and those taught using lecture methods.

Table 5: Summary of Analysis of Covariance on the significant difference in the achievement Method
Dependent Variable: Posttest

Dependent Variable: Source	Type III Sum of Squares	df	Mean Square	F	Prob.
Corrected Model	2349.470a	2	1174.735	81.520	.000
Intercept	20145.220	1	20145.220	1397.963	.000
Pretest	58.524	1	58.524	4.061	.045
Methods	2347.737	1	2347.737	162.920	.000
Error	2810.030	195	14.410		
Total	324605.000	198			
Corrected Total	5159.500	197			

a. R Squared = .455 (Adjusted R Squared=.450)

Source: SPSS Output, 2023

From Table 5 showed that F(1,195)=162.92, P<0.00. This leads to the rejection of the null hypothesis and the acceptance of the alterative hypothesis. This means there is a significant (P<0.05) difference in the achievement scores of students taught Economics with CAIS and those taught lecture methods.

4.2.2 Test of hypothesis two: The mean achievement scores of male and female students taught Economics with CAIS and those taught using lecture methods.

Table 6: Summary of Analysis of Covariance on the Significant Difference in the Mean Achievement Scores of Male and Female Students taught Economics with CAIS and those taught using Lecture Method

Dependent Variable: Posttest

Dependent Variable Source	Type III Sum of Squares	df	Mean Square	F	Prob.
Corrected Model	2396.048a	4	599.012	41.835	.000
Intercept	19530.246	1	19530.246	1363.996	.000
Pretest	72.875	1	72.875	5.090	.025
Methods	2365.857	1	2365.857	165.232	.000
Gender	17.642	1	17.642	1.232	.268
Methods *Gender	24.257	1	24.257	1.694	.195
Error	2763.452	193	14.318		
Total	324605.000	198			
Corrected Total	5159.500	197			

a. R Squared = .455 (Adjusted R Squared=.450)

Source: SPSS Output, 2023

Data in Table 6 showed that F(1,193)=1.69,.195.This leadstothe acceptance ofthe null hypothesis. This means that there is significant difference between the mean achievement scores of male and female students taught Economics with Cognitive apprenticeship instructional strategy and those taught with lecture method in senior secondary schools in Abakaliki Education Zone.

4.2.4 Test of hypothesis four: There is no significant difference in the retention mean scores of SSII students taught Economics with CAIS in Abakaliki Education Zone.

Table 7: Summary of Analysis of Covariance on the Significant Difference in the Retention Mean Scores of SSII Students taught Economics with CAIS in Abakaliki Education Zone

Dependent Variable: Post-posttest

Dependent Variable: Post-posttest Source	Type III Sum of Squares	Df	Mean Square	F	Prob.
Corrected	2593.949a	2	1296.974	81.229	.000
Model			2877.803	180.236	.000
Intercept	2877.803	1	.003	.000	.989
Posttest	.003	1	1444.920	90.495	.000

Method	1444.920	1	15.967
Error	3113.531	195	
Total	328859.000	198	
Corrected Total	5707.480	197	

a. R Squared =.454 (Adjusted R Squared=.449)

Source: SPSS Output, 2023

Table 7 showed that $F(1,195)=90.50, P<0.00$. This is a significant result. Therefore, the null hypothesiswhichstated that is no significant difference in themeanretention scores of SSII students taught Economics with CAIS in Abakaliki Education Zone was rejected.

4.2.5 Test of hypothesis four: There is no significant difference in the mean retention scores of male and female students taught Economics with CAIS and those taught using lecture methods.

Table 8: Retention Scores of Male and Female Students taught Economics with CAIS and those taught using Lecture Method

Post-posttest

Dependent Variable: Source	Type III Sum of Squares	df	Mean Square	F Sig.
Corrected Model	2741.164a	4	685.291	44.588.000
Intercept	2778.118	1	2778.118	180.755.000
Posttest	.350	1	.350	.023.880
Method	1388.923	1	1388.923	90.369.000
Gender	19.611	1	19.611	1.276.260
Method * Gender	136.911	1	136.911	8.908.003
Error	2966.315	193	15.370	
Total	328859.000	198		
Corrected Total	5707.480	197		

a. R Squared = .480 (Adjusted R Squared = .470)

Source: SPSS Output, 2023

Table 10 showed that$F(1,193)=8.91, P<0.003$. This is a significant result. Therefore, the null hypothesis which stated that there is no significant difference in the mean retention scores of male and female students taught Economics with CAIS and those taught lecture method was rejected.

Based the analysis, the following findings were obtained:

1. Students taught Economics with Cognitive Apprenticeship Instructional Strategy had higher achievement scores $M=43.21, SD=3.95$, than thosetaught with lecture method $M=36.36, SD=3.67$.Therefore, there is a significant ($P<0.05$) difference in the achievement scores of students taught Economics with CAIS and those taught using lecture method,$F1,195=162.92, P<0.00$.

2. Male and female students taught Economics with CAIS had the same achievement scores after instructional treatment. Therefore, there is no significant ($P>0.05$) difference between the mean achievement scores of male and female students taught Economics with Cognitive apprenticeship instructional strategy and those taught with lecture method in senior secondary schools in Abakaliki Education Zone.
3. Students taught Economics with CAIS had high retention ability($M=43.63, SD=3.75$) than those taught with lecture method($M=36.35, SD=4.26$). Therefore, the null hypothesis which stated that there is no significant difference in the mean retention scores of SSII students taught Economics with CAIS in Abakaliki Education Zone was rejected ($F(1,195)=90.50, P<0.00$).
4. Gender and instructional methods can bring about students' retention in Economics. Therefore the null hypothesis which stated that there is no significant difference in the mean retention scores of male and female students taught Economics with CAIS and those taught using lecture method was rejected$F1,193=8.91, P<0.003$.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Discussion of Findings

The analysis of results on students' achievement in Economics presented in Table 1 revealed that students' taught Economics with Cognitive Apprenticeship Instructional Strategy had higher achievement scores than those taught with lecture method. Experimental Group had a mean gain of higher in the posttest while the control group had a mean gain of lower in the posttest. The analysis of covariance in Table 2 also confirmed there is a significant difference in the achievement scores of students taught Economics with CAIS and those taught lecture methods in favour of cognitive apprenticeship instructional strategy. This significant difference is attributed to the treatment. This finding indicates that CAIS had positive effect on students' achievement in Economics. This shows that CAIS is more effective when compared with Lecture method (Teacher-centred instructional) in enhancing students' achievement in Economics.

This finding was supported by the early findings of Okpara-Kalu (2015) investigated the effect of a combination of cognitive apprenticeship and reciprocal teaching (CAI+RT) on the reading performance of students and found that students who are allowed to engage in classroom activities in social milieu integrate their experiences in learning which promotes their achievement in learning tasks. In addition, the finding was supported by Cash et al. (2016) who submitted that the use of CAIS enhances students' achievement in abstract concept. The finding was also supported by Adu & Galloway (2015) who found that giving students learning assistance and support enhances positive effect on students' achievement in Economics. This is because learning assistance and guidance could offer students the opportunity to do things on their own and think and activate their experiences to solve problems in a supportive community of learning. The above finding agrees with Adejoji and Babatude (2005), who earlier observed that students' achievement in school subjects depends on the extent the teachers make use of innovative teaching methods and suggested that teachers could use other teaching methods that

could activate students' concrete experiences rather than use of conventional lecture method which result to rote learning and memorization. In order words teaching strategies affects students' achievement in Economics. This finding that Cognitive Apprenticeship Instructional Strategy has a positive effect on students' achievement is in line with Emmanuel and Titi (2014) whose findings submitted that cognitive-based teaching has positive significant on students' academic achievement.

The analysis of covariance in table 2 showed that male and female students taught Economics with CAIS had the same achievement scores after instructional treatment. Thus, there is no significant difference between in the mean achievement scores of male and female students taught Economics with Cognitive apprenticeship instructional strategy and those taught with lecture method in senior secondary schools in Abakaliki Education Zone. This finding is supported by Ezeudu (2009) who investigated the effect concept mapping an aspect of Cognitive Apprenticeship Instructional Strategies and found that it was effective for teaching both male and female students at a lower level of education. The significance of this finding is because CAIS creates a social learning environment that supports individual differences in learning situations as it the view of Ewumi (2009) who found that if students listen to only teachers' description of a concept, the student is likely to forget it than when the description is reinforced by giving them further learning opportunities through viewing and manipulating the material used for learning. In the later case, the learner's mental connection with the newly learned word is through more sense organs than just hearing. The researcher found that the two teaching strategies had a positive effect on students' retention in Economics despite the difference in the mean gain.

The findings of the study also revealed that gender and instructional methods can bring about students' retention in Economics. Therefore the null hypothesis which stated that there is no significant difference in the mean retention scores of male and female students taught Economics with CAIS and those taught using lecture method was rejected$F1,193=8.91,P<0.003$. Although retention ability differs by gender makeup because male students usually gain retention in the calculation that theoretical writing, while females are good, is the social aspect of learning. However, CAIS instructional strategy creates a social environment where all students develop their cognitive ability in an instructional process. This finding was not supported by the finding of Peter (2014), who found that there is a significant difference between method and gender on students' retention in School. This means that the instructional method alone cannot enhance students' retention in Economics but by other factors like interest, nature of subjects, among others.

Conclusion

Based on the findings, the cognitive apprenticeship instructional strategy adopted by the teachers greatly affects the students' learning of the Economics concepts. This is usually reflected in their achievement, and the extent of retention of learning. CAIS enhanced students' achievement in learning about demand and supply, wage determination, trade union and unemployment as concepts

in Economics when used than lecture method of teaching the subject. The study revealed that that there is no interaction effect of CAIS and gender on student's achievement in Economics in Abakaliki Education Zone. The study equally submitted that there was a statistically main interaction effect of CAIS and gender on students' retention in Economics. The study, therefore, concluded that CAIS is effective in teaching Economics and should be used with varieties of methods or strategies to improve students' achievement and retention in Economics in senior secondary schools in Nigeria.

Recommendations

The following recommendations were made based on the findings of the study;

1. Economics teachers should be encouraged to use CAIS while teaching Economics concepts especially the ones involving demand and supply, wage determination, trade union and Unemployment as it relates to human society.
2. Professional bodies like Economics Association of Nigeria (EAN), Curriculum Organisation of Nigeria in collaboration with the Educational Research and Development Centre (NERDC) and Federal Ministry of Education should organize seminars, workshops, and symposia on the use of CAIS for Economics teachers at federal and state levels. If this training is done regularly the Economics teachers would be proficient in the use of Cognitive instructional activities in Economics instruction and its various models.
3. The use of CAIS has been established to improve achievement and retention in Economics, the use of Cognitive Models of instruction should be popularized by incorporating them into the Economics curriculum.
4. The finding of the study revealed that method and gender together enhances students' achievement and retention in Economics. Based on this finding, female and male students should be encouraged to vigorously pursue most of the Economics based courses like Accountancy, Regional Economic Planning, Government, Statistics, among others since most of the concepts can now be explained using Cognitive Apprenticeship Instructional Strategy that draws various experiences. It makes such concepts o be tangible and easily conceptualized when students' concrete experiences are prioritizing in the instructional process.

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