



IMPACT OF INTERACTION BETWEEN THE INSTRUCTIONAL TREATMENT AND GENDER INTEREST IN JUNIOR SECONDARY SOCIAL STUDIES CONCEPTS IN NSUKKA EDUCATION ZONE

UGWU, Ndidiamaka Patience and EZE, Anastasia Ukamaka

Department of Arts and Social Science Education, Godfrey Okoye University

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ABSTRACT

The study seeks to examine the Impact of Interaction between the Instructional Treatment and Gender Interest in Junior Secondary Social Studies Concepts in Nsukka Education Zone. A quasi-experimental research design was used. The population of this study consists of all the junior secondary co-education school students (4182) of Nsukka Education Zone of Enugu State. A sample of 260 students was drawn. The instruments developed for these studies were Social Studies Achievement Test (SSAT) and Social Studies Interest Inventory (SSII). The data obtained were analyzed using means and standard deviation to answer the research questions. The hypotheses were tested at 0.05 level of significance using analysis of covariate (ANCOVA). The reliability of SSAT and SSII were determined using KR-20 reliability method. The tests were administered twice after a week interval to determine the reliability of SSAT with the use of Pearson moment correlation and the internal consistency of SSII were ascertained using Cronbach alpha procedure. The result of the analyses indicated that the Impact of Interaction between the Instructional Treatment was not a significant factor in students' gender interest in Social Studies. Students taught using constructivist-based learning strategies performed significantly better than their counterparts who were taught using lecture method in both SSAT and SSII respectively. Based on the findings it was recommended that teacher educators will also find the study useful in developing programs aimed at producing teachers capable of creating a learning environment that enables learners to actively construct knowledge and understanding for themselves, hence improve their achievement in Social Studies

INTRODUCTION

Social Studies is one of the compulsory subjects studied in junior secondary schools in Nigeria. Social

studies can be defined as an integrated study of the Social Sciences and humanities to promote civic competence and help young people develop the ability



to make informed and reasoned decisions as citizens of culturally diverse, democratic society in an interdependent world (The National Council for Social Studies in the United States of America, 1992). The subject according to Nwoji (2006) is a living subject that deals with the matters of the moment as a preparation for now and the future. Seeing Social studies as an integrated study, its goals to the society as mentioned in the National Policy on Education of Federal Republic of Nigeria (2013) are;

The development of the individual into a sound, patriotic and effective citizen; integration of individual into the immediate community, the Nigeria society and the world; inculcation of national consciousness, value and national unity; and also development of appropriate skills, mental, physical and social abilities and competencies to empower the individuals to live in and contribute positively to the society (1).

For all these goals to be achieved with the help of social studies, teachers have to be grounded effectively in the application of instructional strategies and skills in their teaching.

The effective teaching and learning of social studies contents can help to achieve the above goals. The importance of Social Studies cannot be overemphasized as mentioned by Nwanyanwu (1999) as;

It help learners to understand their culture and other people's culture; it help the learners to be good citizens by educating them on the right type of behaviors; attitudes and values, it trains the learners to be good and effective leaders and followers because it encourages the learners to obey the laws that governs our society and respect for the

constituted authority; it help the learner to develop a good sense of judgment and a sense of moral and social responsibility, it helps man to understand his environment, identify its problems and provide solution to the problems in his environment; it helps individuals to develop ability to relate well with his people in his environment; it help learners to be aware of what is happening around him as well as other parts of the world and also produce good citizen for the society(pg. 2).

In spite of the importance of Social Studies in national development, students have continued to show poor achievement and interest in social studies. Achievement as one of the dependent variable in this study, achievement connotes performance in a school subject as symbolized by a score or mark on an achievement test (Momoh, 1997). It is affected by the degree of original learning, the method of learning and the learners' memory capacity among other factors (Demmert, 2001). Students' achievement according to Epunnam (1999) is defined as the learning outcomes of the student which include the knowledge, skills, and ideas acquired and retained through his course of studies within and outside the classroom situation. For instance the data analysis of 2012, 2013 and 2014 Junior Secondary School Examination (JSSE) results of some of the sampled schools collected from the Post Primary School Management Board Nsukka showed that 48.7%, 45% and 52% of students who sat for the examination in 2012, 2013 and 2014 respectively performed poorly in Social Studies. These three years were used because they were the ones they were able to lay hands on at the school board as at the time the researcher visited the board. The results showed that the method applied for teaching could have effect on their achievement. It is also anticipated that students'



achievement could have positive correlation with their interest in such subject, which is another dependent variable of this study.

Constructivist as a new method of teaching social Studies, the researcher would like to know if constructivist method is going to be gender balance in terms of achievement and interest of the learner. Besides, gender has been identified as one of the factors influencing student's achievement and interest in Social Studies education (Howden as cited in Ogbuanya & Owodunni 2015). The issue of gender has assumed prominence in Social Studies education discourse. Gender is a sense of awareness of being male or female. It is a behavioural pattern and attitude perceived as masculine or feminine within a culture (Coleman, 2000). Howden as cited in Ogbuanya and Owodunni (2015) remarked that disparities exist between male and female students performance in Social Studies education. Some research such as Augustinah and Anaun (2014) revealed that female students perform better than their male counterpart in Biology, were as Sengaul serap and Ahmet (2004) in their study discovered that the male performed higher than the female in Physics. Hence, due to this contradiction, an attempt will be made to find out if constructivist instructional strategy will make a significant influence on academic achievement and interest level of boys and girls in Social Studies.

Therefore, much has not been done on interest of Social Studies student, this study is designed to determine the Impact of Interaction between the Instructional Treatment and Gender Interest in Junior Secondary Social Studies Concepts in Nsukka Education Zone.

Statement of the Problem

The basic introduction of Social Studies is to help solve many social problems chief among are lack of unity in

a multi ethnic country, religious intolerance that has led to loss of life and properties, lack of patriotism and corruption. Several years of the introduction of Social Studies into the nations' curriculum these social problems still persist. Despite the efforts of Federal Governments to curb all these social problems through national integration by introducing National youth service corps (NYSC), National Sports activities and also introduction of new subjects such as civic education into the school curriculum instead, the problems continue to increase in a higher rate which in turn creating an economic mal-function and under-development of the nation which is so significant to our nation Nigeria. Increase in these social problems shows that those goals of Social Studies are yet to be attained.

It has also been observed that the poor implementation of Social Studies by Social Studies teachers due to the didactic lecture method used by the teachers in teaching and learning of the subject matter makes most of the students not to be engaged in complex problem-solving activities and makes them not to apply school knowledge and skills to real-life problems because lecture method is mostly teacher-centered which makes the teaching of Social Studies boring, dull and uninteresting. Generally, gender is seen as a socially ascribed attribute which differentiate feminine from masculine. Difference in Social Studies achievement due to gender has caused a lot of concern to educationist. Therefore, the problem of this study put in a question form is - What is the Impact of Interaction between the Instructional Treatment and Gender Interest in Junior Secondary Social Studies Concepts in Nsukka Education Zone?

Purpose of the Study

The general purpose of this study was to find out the Impact of Interaction between the Instructional



Treatment and Gender Interest in Junior Secondary Social Studies Concepts in Nsukka Education Zone. Specifically, the objectives of this study are to;

1. Ascertain the mean interest scores of students taught social studies using constructivist strategy and those taught using lecture method?
2. Find out the interest scores of male and female students taught social studies with constructivist strategy.

Research Questions

The following research questions guided the study

1. What are the mean interest scores of students taught social studies using constructivist strategy and those taught using lecture method?
2. What are the interest scores of male and female students taught social studies with constructivist strategy?

Hypotheses

Ho₁: There is no significant difference in the mean interest scores of students taught social studies using constructivist strategy and those taught using lecture method.

Ho₂: There is no significant difference in the interest scores of male and female students taught social studies with constructivist strategy.

LITERATURE REVIEW

Conceptual Framework

Role of teachers in a constructivist class

In the constructivist classroom, the teacher's role is to prompt and facilitate discussion. Thus, the teacher's main focus should be on guiding students by asking questions that will lead them to develop their own conclusions on the subject. Parker cited in Jonassen (1999), suggests that good teachers join self, subject, and students in the fabric of life because they teach from an integral and undivided self, they manifest in

their own lives, and evoke in their students, a capacity for connectedness.

Jonassen (1999) identified three major roles for facilitators to support students in constructivist learning environments:

- Modeling
- Coaching
- Scaffolding

Modeling – Modeling as the most commonly used instructional strategy in Constructivist Learning Environments. Two types of modeling exist: behavioural modeling of the overt performance and cognitive modeling of the covert cognitive processes. Behavioural modeling in Constructivist Learning Environments demonstrates how to perform the activities identified in the activity structure. Cognitive modeling articulates the reasoning (reflection-in-action) that learners should use while engaged in the activities.

Coaching –The role of coach is complex and inexact. A good coach motivates learners, analyzes their performance, provides feedback and advice on the performance and how to learn about how to perform, and provokes reflection and articulation of what was learned. Moreover, Jonassen (1999) posits that coaching may be solicited by the learner. Students seeking help might press a “How am I Doing?” button. Or coaching may be unsolicited, when the coach observes the performance and provides encouragement, diagnosis, directions, and feedback. Coaching naturally and necessarily involves responses that are situated in the learner's task performance (Laffey, Tupper, Musser, & Wedman, 1997).

Scaffolding - Scaffolding is a more systemic approach to supporting the learner, focusing on the task, the environment, the teacher, and the learner. Scaffolding provides temporary frameworks to support learning and student performance beyond



their capacities. The concept of scaffolding represents any kind of support for cognitive activity that is provided by an adult when the child and adult are performing the task together (Wood & Middleton, 1975 cited in Jonassen, 1999).

Students' Achievement and Interest in Social Studies

One reason why learners learn is to acquire knowledge so that they in turn may contribute to the development of their societies. Academic achievement has three parameters; good academic achievement, poor academic achievement and academic failure (Aremu, 2000). Academic achievement is the outcome of education-the extent to which a student, teacher or institutions has achieved their educational goals (Aremu, 2000). Academic achievement of students therefore consists of scores obtained from teacher-made test or examination. Academic achievement according to the Cambridge University Reporter cited in Santrock (2006) is frequently defined in terms of examination achievement. Academic achievement refers to what the student have learned or what skills the student has learned and is usually measured through assessments like standardized tests, achievement assessments and portfolio assessments (Santrock, 2006). A number of factors have been influencing students' academic achievement. Some of these include; student family background (Rumberger, 1995), parental discipline (Aremu, 2000), degree of self-efficacy and anxiety (Aremu & Adika, 2000), school location (Aremu, 1999), etc. According to Nwokocha and Amadike (2005), academic achievement of students is the yardstick for testing educational quality of a nation.

Academic achievement, which is measured by the examination results, is one of the major goals of a school. Hoyle in Aremu and Adika (2000) argued that

schools are established with the aim of imparting knowledge and skills to those who go through them and behind all this is the idea of enhancing good academic achievement.

Theoretical framework

Piaget's theory of learning and constructivism

Jean Piaget (1977) was primarily interested in how knowledge developed in human organisms. Cognitive structuring of the knowledge was fundamental in his theory. According to his theory, cognitive structures are patterns of physical or mental action that underlie specific acts of intelligence and correspond to stages of child development. Piaget has integrated both behavior and cognitive aspects in one developmental stage. They are sensorimotor, preoperations, concrete operations and formal operations. In the sensorimotor stage (0-2 years), intelligence takes the form of motor actions. Intelligence in the preoperation period (3-7 years) is intuitive in nature. The cognitive structure during the concrete operational state (8-11 years) is logical but depends upon concrete references. In the final stage of formal operations (12-15 years), thinking involves abstractions (Cameron, 2002).

Empirical studies on the use of constructivist strategy, achievement, interest and gender

Oludipe and Oludipe (2010) researched on Effect of constructivist based teaching strategy on academic performance of students in integrated science at the junior secondary school level. One research question guided the study. Quasi experimental research was used to achieve the purpose of the study. The study was conducted in Ijebu-ode local government area of Ogun State, South-west Nigeria. Participants were 120 Junior Secondary School Students randomly selected from four out of the 25 co-educational Junior Secondary schools. Simple random sampling was used in the study. Paired t-test and independent group t-



test was used to analyze the data collected. Research report indicated that the negative attitude was caused majorly by the teacher's conventional (lecture) method of teaching integrated science. Research report on the effectiveness of the constructivist based strategy revealed that the strategy enhanced student's academic performance. In view of this, this study examines the effectiveness of constructivist based teaching strategy on academic performance of students in integrated science by junior secondary school students in South-West Nigeria. Findings revealed that the constructivist instructed students had higher scores on the post test and the delayed posttest, compared to those exposed to conventional (lecture) method of teaching. The researcher concluded that if Integrated Science teachers could incorporate constructivist based strategy into their teaching methods, there would be an improvement in academic performance of junior secondary school students in integrated science. The researcher recommended that integrated Science teachers should incorporate constructivist-based teaching strategy in their methods of teaching. The reviewed study relates to the present study in that one of the variables of this study such as constructivist strategy and academic achievement is been adopted in the study. More so, the study is difference in that the research was carried out in integrated science while the present study is in Social Studies. These created gaps which the present study seeks to fill. The present study seeks to test the effects of constructivist learning strategy on Social Studies interest.

Sengül, Serap and Ahmet (2014) conducted a research on Effects of Peer Instruction Method as one of the constructivist strategy on interest of 9th Grade Students towards Physics Course. Five research questions guided the study. A pre/post-test research was adopted. The area of the study is in Ankara

province in Turkey. The study was conducted with 46 students registered to 9th grade in a secondary school situated in Ankara province in Turkey in the spring term of 2012-2013 educational years. Physics Attitude Scale (PAS) was used as the data collecting tool of the study. The data obtained from PAS were analyzed with t-test for dependent samples analysis. The result revealed that the gender comparisons through the study yielded statistically significant difference only in two factors favoring the male students. Several studies stated that male students bear more interest towards the physics course than female students. The finding is related to the present study in that one of the dependent variables interest and also gender form part of present study. The findings is differ from the present study in that it was carried out in Turkey on physics students and not Social Studies which has created a gap in the study.

RESEARCH METHOD

The study adopted a quasi-experimental research design. The study was conducted in Nsukka Education Zone of Enugu State which consists of three local Governments areas namely; Igbo-Etiti Local Government Area, Nsukka Local Government Area and Uzo-Uwani local Government Area. The population of this study consists of four thousand one hundred and eighty two (4182) Junior Secondary School III (JSS) social studies students in fifty two (52) co-education Junior Secondary Schools in Nsukka Education Zone in the 2014/2015 academic session. A sample size was drawn from the study using Purposive sampling technique which amounted to two hundred and sixty (260) JSSIII Social Studies students. The hypotheses were tested at 0.05 level of significance using a mean and standard deviation to answer the research questions while analysis of covariance (ANCOVA) and Statistical package for Social Science (SPSS) was used for the computation and analysis of

data. The instrument for data collection includes; Social studies Achievement Test (SSAT), Social Studies Interest Inventory (SSII) and also lesson plans was prepared for the study. The research instruments were face validated by two experts in the Department of Education Social Science and one from measurement and Evaluation University of Nigeria Nsukka. These experts were requested to validate the Social Studies Achievement test (SSAT) and Social Studies Interest Inventory (SSII), items in terms of; clarity of instruction to the respondents; appropriateness to the subject and the study and proper wording of the item. The instruments were also

formatively validated using feedback from twenty (20) JSSIII students in one of the schools outside Nsukka education zone (Government Secondary School, G.R.A. Enugu). The reliability of SSAT and SSII were determined using KR-20 reliability method. The student respondents were used to compute the coefficient of internal consistency of the SSII. (See appendix E and F).

Testing of the Hypotheses

Ho₁: There is no significant difference in the mean interest scores of students taught social studies using constructivist strategy and those taught using lecture method.

Table 10: ANCOVA Summary Table showing if there is no significant difference in the Mean Interest Scores of Experimental and Control group.

Tests of Between-Subjects Effects

Dependent Variable: PosttestSSII

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	19127.596 ^a	2	9563.798	160.919	.000
Intercept	48786.580	1	48786.580	820.873	.000
PretestSSII	1.058	1	1.058	.018	.894
Method	16210.313	1	16210.313	272.752	.000
Error	15274.157	257	59.433		
Total	1065334.000	260			
Corrected Total	34401.754	259			

a. R Squared = .556 (Adjusted R Squared = .553)

The data presented in the Table 10 revealed that there was a significant effect of method on level of post-test after controlling for the effect of pre-test, $F(1, 257) = 272.752$, $P = 0.000$. The decision rule states that if the probability (p) value is less than or equal to alpha value of .05 at which it is been tested you reject the

null hypotheses which means that there is a statistical significance but if the probability value is greater than the alpha value of .05 you do not reject the null hypotheses which means that there is no statistical significance. Therefore, the probability (p) value is less than the alpha value ($0.000 < 0.05$) which means

that the hypothesis is therefore rejected and that there is significance in the mean interest scores of students taught social studies using constructivist strategy and those taught using lecture method.

Ho₂: There is no significant difference in the interest scores of male and female students taught social studies with constructivist strategy.

Table 11: ANCOVA Summary Table showing if there is no significant difference in the Mean Interest Scores of Male and Female students taught Social Studies with Constructivist Strategy.

Tests of Between-Subjects Effects

Dependent Variable: CLSPosttestSSII

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	218.454 ^a	2	109.227	1.674	.192
Intercept	39515.827	1	39515.827	605.678	.000
CLSPretestSSII	56.723	1	56.723	.869	.353
CLSGender	177.535	1	177.535	2.721	.101
Error	8285.769	127	65.242		
Total	67395.000	130			
Corrected Total	8504.223	129			

a. R Squared = .026 (Adjusted R Squared = .010)

The data presented in the Table 11 revealed that there was no significant effect of CLSGender on level of CLSPost-test after controlling for the effect of CLSPre-test, $F(1, 127) = 2.721$, $P = 0.101$. The decision rule states that if the probability (p) value is less than or equal to alpha value of .05 at which it is been tested you reject the null hypotheses which means that there is a statistical significance but if the probability value is greater than the alpha value of .05 you do not reject the null hypotheses which means that there is no statistical significance. Therefore, the probability (p) value is greater than the alpha value ($0.101 > 0.05$) which means that the hypothesis is therefore accepted and that there is no significance in the

interest scores of male and female students taught social studies with constructivist strategy.

Discussion of Findings

The discussion of the findings was based on the following heading;

1. What are the mean achievement scores of students taught social studies using constructivist strategy and those taught using lecture method?
2. What are the interest scores of male and female students taught social studies with constructivist strategy?



Effect of Gender on the Mean Achievement Scores of Students taught Social Studies with Constructivist Strategy.

The data provided in Table 2 answered the research question two and the result revealed that female students' had higher mean achievement score than the male students. The difference in the mean achievement score (0.19) of female and male students is a little bit high. Furthermore, the analysis in Table 8 tested the hypothesis two and the result (p. value of $0.069 > 0.05$ alpha value at which it is being tested) revealed that there is no significance in the achievement scores of male and female students taught Social Studies with constructivist strategy. This finding agrees with the finding of Augustinah and Anaun (2014) revealed that female students perform better than their male counterpart. However, this finding disagrees with the finding of Sengaul serap and Ahmet (2004) that discovered that the male performed higher than the female in school subjects.

Effect of Gender on the Mean Interest Scores of Students taught Social Studies with Constructivist Strategy.

The data provided in Table 5 answered the research question five and the result revealed that male students' had higher mean interest score than the female students. The difference in the mean interest score (0.81) of female and male students is a little bit high. Furthermore, the analysis in Table 11 tested the hypothesis five and the result (p. value of $0.101 > 0.05$ alpha value at which it is being tested) revealed that there is no significance in the interest score of male and female students taught Social Studies with constructivist strategy. This finding disagree with Adegboye cited in Nwago and Obiekwe (2010) which

explained that many parents do not have interest in sponsoring their female education.

Conclusion

Constructivist-based learning strategies may also offer alternative learning opportunities for students who do not fully grasp course material in the traditional lecture format. Constructivist-based learning strategies provide students with the opportunity to apply theory to real-life situations and bring concepts and theories to life, thereby enhancing student learning. It has been noted that both classes (experimental and control) improved in their scores more after the second lesson than after the first lesson. This means that the second lesson had a high impact in the students' learning because the students knew what to expect.

Therefore, bringing constructivism into the classroom is an effective way to add vigor and interest to the class. By blending lectures and having students question and respond to primary source documents, an instructor can address the demands of covering material at the same time he encourages problem solving skills in the students.

Recommendations

- I. Teacher educators will also find the study useful in developing programs aimed at producing teachers capable of creating a learning environment that enables learners to actively construct knowledge and understanding for themselves, hence improve their achievement in Social Studies.

REFERENCES

- Aremu, A.O. (1999). Effects of Gender and Parenting Styles on the Academic Performance of Undergraduate Students of a Nigerian University. *African Journal of Educational Research*.1.169-174.



- Aremu, A.O. (2000). *Academic performance 5-Factor Inventory*. Ibadan: Stirling-Horden Publishers.
- Aremu, A.O. & Adika, L.O. (2000). *The Development and Validation of Academic Performance 5-factor Inventory*. (An Unpublished Manuscript), Department of Guidance and Counseling, University of Ibadan, Nigeria.
- Augustinah, .N. D. & Anaun, O. B. (2014). Effects of Constructivists' Learning Strategies on Senior Secondary School Students Achievement and Retention in Biology. *Mediterranean Journal of Social Sciences MCSER Publishing, Rome-Italy*. 5. (27).
- Cameron, J. (2002). A Summary of the Effects of the Reward Contingencies on Interest and performance. *The Behavior Analyst Today*. 3, 222-226.
- Coleman, E. (2000). *School Factors and their Effects on Achievement*. Illinois Teacher May/June; 162-184
- Demmert, K. L. (2001). Improving Academic Performance among Native American Students: A Review of the Research Literature. Retrieved March 20, 2006 from <http://www.aor.com/pdf>
- Jonassen, D. H. (1999). Constructing Learning Environments on the Web: Engaging students in Meaningful Learning. *EdTech 99: Educational Technology Conference and Exhibition 1999: Thinking Schools, Learning Nation*.
- Laffey, J., Tupper, T., Musser, D. & Wedman, J. (1997). A Computer-Mediated Support System for Project-Based Learning. Paper presented at the annual conference of the American Educational Research Association, Chicago, IL.
- Momoh-olle, J. Y. (1997). Effects of Cognitive Preference and Advance Verbal Organizers on the Retention of an O' Level Physics Textual Materials. *The Nigeria Teacher Today*. 5(1&2), 26
- National Council for Social Studies (1992). Testing and Evaluation of Social Studies Students Social Education. 55. (5) 284-293 NERDC.
- Nwanyawu, O.J. (1999). *Current Trends in Social Studies Instruction*. Abeokuta; Goad Educational Publishers.
- Nwoji, Q.J. (2006). Social Studies Education in Nigeria and other Countries. In Obebe, B.J. (ed). *Social Studiies: The Study of ourselves and our environment*. Lagos: University of Lagos press.
- Nwokocha, A. C. & Amadike, N.N.F. (2005). Comparative Study of Academic Performance in Public and Private Secondary Schools in Riva State. *Nigerian Journal of Education Administration and Planning*. 5(2). 188-191.
- Ogbuanya, T. C. & Owodunni, A. S. (2015). Effects of Reflective Inquiry Instructional Technique on Students' Academic Achievement and Ability Level in Electronic Work Trade in Technical Colleges. *Journal of Education and Practice*. 6.7.
- Oludipe, B. & Oludipe, I. D. (2010). Effects of Constructivist-based Teaching Strategy on Academic Performance of Students in Integrated Science at the Junior Secondary School Level. *Education Research and Reviews*. 5 (7). 347-353.
- Rumberger, R.W. (1995). Dropping Out of Middle School: A Multilevel Analysis of Students and Schools. *American Educational Research Journal*, 32, 583- 626.

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Santrock, J. W. (2006). *Educational Psychology*. New Delhi: Tata McGraw-Hill Publishing Company Limited.

Sengül, A., Serap, E. & Ahmet, D. S.T(2014). Effects of Peer Instruction Method on Attitudes of 9th Grade Students towards Physics

Course. *Journal of Eurasian J. Phys. & Chem. Educ.* 6(1): 88-98.

Wood, and Middleton, (1975). A study of Assisted Problem Solving. *British Journal of Psychology*, 66(2), 181-191.