

# COMPARATIVE EFFECTS OF SELF DIRECTED LEARNING (SDL) STRATEGY AND SIMULATION TECHNIQUE (ST) ON STUDENTS ACHIEVEMENT IN SOCIAL STUDIES AT UPPER BASIC 11 IN KOGI EAST EDUCATION ZONE

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## Abstract

*This study investigated the comparative analysis of the effects of self directed learning strategy and simulation technique on students' interest in Social Studies at upper basic 11 in Kogi East Education Zone of Kogi State. The study used gender as a moderating variable to compare the mean interest rating scores, of male and female students when exposed to the treatment using self directed learning and simulation techniques. Three research questions guided the study while three hypotheses were formulated and tested at 0.05 level of significance. The study employed the quasi experimental specifically the pre-test, post-test and non equivalent groups. The sample consisted of 442 Social Studies students, comprising 232 males (52.49%), and 210 females (47.51%) drawn from 6 intact classes of co-educational government public schools in the study area. The instruments for data collection were Social Studies Interest Questionnaires (SSIQ) and Social Studies Achievement Test (SSAT). The SSIQ was computed using cronbach alpha with reliability  $r= 0.77$ . Mean and standard deviation were used to answer research questions while Analysis of Covariance (ANCOVA) was used to test the hypotheses. Findings revealed that students that were taught Social Studies using the self directed learning strategy exhibited higher positive interest, achievement and retention. That is  $f(1441)= 108.107$ ;  $p=0.00<0.05$  than those who were taught using simulation technique. There is significant difference in the mean interest rating using Self Directed Learning (SDL) and simulation technique in favour of male students. Based on the findings, the study recommended among others that, Social Studies teachers should be encouraged to employ self directed leaning as a strategy in the teaching/ learning of Social Studies. Government, professional bodies, parents and stakeholders should encourage capacity building workshops, seminars, conferences, in service training on the use and implementation of self directed learning and simulating techniques in Social Studies.*

**Keywords:** Self directed learning strategy, Self directed learning strategy, Students' achievement, Social studies, Basic education.

## Introduction

Education is the process through which succeeding generations of people are enabled to use the set of beliefs, knowledge, skills, attitudes and behaviour that they consider as acceptable to their ways of life (Adagba, 2015:12). The Federal Government of Nigeria (2013) reiterates in the National Policy on Education that: by an education

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revolution. That is why education is widely acknowledged as an instrument per excellence for the development of a society. It is the fundamental agents of change that gradually transforms people and made them become refined and civilized in the society (Obanya, 2002). The objectives of Junior Secondary Education are:

- a) provide the child with diverse basic knowledge and skills for entrepreneurship and educational advancement.
- b) develop patriotic young people equipped to contribute to social development and the performance of their civic responsibilities;
- c) inculcate values and raise morally upright individuals capable of appreciate the dignity of labour; and
- d) inspire national consciousness and harmonious co-existence irrespective of differences in endowment, religion, colour, ethnic and socio-economic background (Federal Republic of Nigeria, 2013).

Social Studies is therefore adopted as one of the compulsory curriculum subjects in the junior secondary schools. In Nigeria today and globally, there is a constant change in the curriculum of social studies education aimed at meeting modern day societal needs (National Council for Social Studies, 2010). Students taking Social Studies have the ability to comprehend and appreciate the societal values embedded in the concepts of the subject.

For this reason, many Social Studies educators have clamored for linking its teaching and learning to the world of students, emphasizing in them the need to participate in different kinds of activities to gain a broad knowledge base, develop thinking skills and take responsibility for their own learning (Oyediji & Okwilagwe, 2015).

Mesieobi (2008), defined Social Studies as an integrated field of study which probes man's symbiotic relationships with his environments. It also endows man with the reflective or contemplative capabilities affective and psychomotor skills to enable him understand his world and his problems and to rationally solve them for effective living in the society. Human beings (students) interact with their environments, and the influences may be positive or negative. The general purpose of Social Studies education is to help learners develop the ability to adapt to the ever-changing environment in which they find themselves through the acquisition of relevant knowledge, attitudes values and practical skills (Adeyemi, 2010).

Although, teachers are expected to use several approaches to influence effective teaching and learning, the conventional method is still much evident in the Nigerian classrooms, in spite of it being criticized for emphasizing teaching centeredness and relegating the learner to a passive role player in the education process (Okam, 2010). This scenario has created continuous and enormous gap between the intended behavioural changes and the actual classroom practices in Social Studies teaching and learning. Thus, experts in the field have affirmed that the situation has not changed over time in spite of the introduction of new concepts in the curriculum and innovation into the teaching and learning of Social Studies (Adeyemi, 2008). Besides the abysmal students' performance observed in the subject, there is the problem of students not imbibing the effective changes expected from the learning experiences they go through. Thus, many youths are rich in the knowledge of Social Studies but deficient in the expected social values and attitudes that characterize socially responsible citizens (Adeyemi & Ajibade, 2011).

The institutionalization of Social Studies as a school subject rose out of the realization that the study of man and his environment was not adequately covered by single discipline in the social sciences. It is on this note that the federal government of Nigeria in her National Policy on Education (FRN, 2013). Recognized Social Studies as one of the compulsory subjects in primary and post primary schools. It is also studied as a discipline in some of the higher institutions of learning in Nigeria (Federal Republic of Nigeria, 2013).

Despite its recognition, Odoma (2013); Ikwumelu and Oyibe (2014) observe that Social Studies has been part of educational curriculum in the United States of America (USA) for many years before its formal introduction into Nigeria educational curriculum in early 60s yet its philosophy, scope, content and methods of teaching have remained to both scholars and Social Studies teachers. Thus, opinions about what Social Studies should vary from country to country, even within a single nation, experts are divided on the question of the definition (Ikwumelu & Oyibe, 2014).

Mezieobi (2008) defines Social Studies as an integrated field of study which probes man's symbiotic relationships with his environments, endows man with the reflective or contemplative capacities, intellectual, affective, social and work skills to enable him understand his world and his problems as well as to rationally solve them for effective living in the society.

The general purpose of Social Studies is to help learners develop the ability to adapt to the ever-changing environment in which they find themselves through the acquisition of relevant knowledge, attitudes, values and practical skills (Adeyemi, 2010). With this in mind, Social Studies has been designed and introduced into the national curriculum of primary and secondary schools and made a compulsory subject in the current school structure, referred to as the Universal Basic Education (UBE).

Ironically, Social Studies has been implemented many years now without adequate success in terms of inculcating the right type of attitudes and values of good citizenship among the youths (Abdu-Raheem, 2012). The youths are rich in knowledge of Social Studies' concepts and facts but deficient in expected social values, attitudes and behaviours that characterize socially responsible citizens (Adeyemi & Ajibade, 2011). It is assumed that the deficiency arose from the way the subject was taught and learnt in the classroom. Some Social Studies educators have blamed teachers of using lecture method in teaching the subject that required interactive methods in a conducive social environment (Okam, 2010). The Okam further explains that a teacher is expected to be a facilitator whose main function is to help learners to become active participants in their learning.

There are many research works supporting various instructional techniques which enhance teaching and learning as well as enhance achievement in Social Studies. (Chiodo & Byford, 2009; Russell & Waters, 2010, Essien Akpan & Obot, 2015). The instructional techniques intended to address in this study are: to compare self-directed learning and simulation learning strategies, as to which would best enhance, achievement of Social Studies Students in Kogi East.

Self-Directed Learning (SDL) is a process in which individuals consciously take responsibility and initiatives with or without the help of others to diagnose their learning needs, formulate learning goals, identify resources for learning, select and implement learning strategies as well as evaluate learning outcomes within a given framework, thereby becoming their own learning agents (Long, 2010; Grow, 1991; Guglielmino, 2013). The advantage of self-directed learning is a paradigm shift

from teacher to learner-centeredness. That is, it removes the passive role students play and thus give room for effective participation during the classroom teaching and learning. Students chose different learning objectives and performance outcome based on their personal interest and strengths.

When a teacher directs learning, learners tend to be more dependent-prone. In a self-directed learning situation, students take control over their learning experiences, challenge themselves by going beyond the easy familiar, think independently, plan and execute their own activities. These make them to exhibit curiosity and motivate interest, since they are given the opportunity to work independently

The term simulation technique entails the use of activities or materials that represent real life situation, past events, incidents or organization in such a way that pupils learned and understand more about them (Adegoke, 2013). It is a simplified model of a real-world situation. Simulation is simply pretence or an imitation device used to help learners discover how certain situations, circumstances or processes that affect human behaviour. Adeyemi (2008) as well as Glen and Johnson (2012) describe simulation as an unstructured situation in which learners improvise behaviour according to their assigned roles. Glen and Johnson further explain that simulation technique entails assigning students to unique roles within a group as the group addresses a series of issues. Simulation technique motivates pupils by keeping them actively engaged in the learning process which requires them to play roles. Glen and Johnson also assert that simulation could make the teaching of Social Studies interesting and realistic which lead to acquisition of knowledge, skills and values necessary for the survival of the individual and the society at large. Okereke and Onwukwe (2011) assert that the use of simulation technique make students learn concept or material much better as they could discern situations for themselves.

Achievement is defined as the process of accomplishing a task successfully. Academic achievement could be seen as the extent to which a pupil, teacher and institution have achieved educational goals. (Chido & Byford, 2009; Jimin, 2014). Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that are the focus of activities in instructional environments, specifically in school. Achor (2017) posits that achievement has multifaceted construct that comprised different domains of learning. Achor asserts that because the field of academic achievement is wide-ranging and covers a broad variety of educational outcomes, the definition of academic achievement depends on the indicators used to measure it. Operational definition of achievement in this study is measured by examination or continuous assessment to know the amount of knowledge gain as a result of students being exposed to Social Studies curriculum package through self-directed learning and simulation strategy.

Adherents of achievement theory believe that people have innate needs to succeed or reach a high level of attainment, and people who experience greater level of success are motivated to strive more for success (Fabumi, 2004 & Jimin, 2014). It has been postulated that people who achieve high level of excellence tend to regard those who do not, as not having tried enough, while those who are not high achievers tend to see those who are, as being lucky. Such individuals, he claimed, set challenging goals for themselves, assumed personal responsibility for goal accomplishment and are highly persistent, take calculated risks to achieve the goals.

Abdul-Raheem (2010) conducted a study on the effect of cooperative and competitive instructional strategies on achievement of students. It was found out that

the poor achievement of students was due to over-crowded classrooms that leave no room for students' interaction and engagement by the teacher. This problem, according to Abdul-Raheem was also caused by none increase in the provision of facilities, instructional and supporting personnel. Similarly, James (2008) found in a study that there was a decline in students' achievement in Social Studies. Findings from many studies had advanced numerous reasons for the deplorable state of Social Studies performance in Nigeria schools. It is believed by some researchers that poor professional training, poor academic background of the teacher and inability of making proper use of assisted instructional methods are among the main factors responsible for the low performance of students in the subject (Mbakwen 2005 & Mazi, 2000).

The National Council for Social Studies (NCSS) (2001) states that for students to attain desirable level of achievement in Social Studies, the subject must be taught and learned in a manner that is consistent with constructivists' view of learning. The essential characteristics of constructivists view as described by NCSS (2001) indicated that Social Studies teaching/learning should be meaningful and interactive not resisting the learners but should create room for learners' engagement by the teacher in the learning process where the learners actively take the responsibility of creating or constructing their own knowledge. Social Studies teachers are therefore expected to possess the pedagogical knowledge, capabilities and disposition needed to create the kind of learning experiences and school environment that are capable of favouring learners towards meaningful, integrative, value-based, challenging and active instruction. Among the strategies aimed at meeting the principles of constructivism are self-directed learning and simulation-based technique. Consequently, in order to realize these objectives that relate to the participation of students in practical activities, Matthew (2008) advises that teachers should use appropriate pedagogies that would not only clarify Social Studies but also make it more interesting, fun and less fearsome. This implied that the higher the students curiosity towards Social Studies, the higher their academic achievement. Since the population for this study consisted of both male and female students, gender has to be incorporated as one of the moderating variables for comparison.

Gender roles are patterns of behaviours, attitudes, and expectations associated with a particular sex-with being either male or female. Education For All (EFA) goals number 4, 5, and 6 showed that there is gender disparity in schools. The latest data showed that there are seven females to every ten boy male in primary schools; while at the secondary school level, 97 countries have not reached gender parity, in forty-three of them females are disadvantages. In many middle and high income countries, males are more likely to be out of secondary schools than female students. Females students perform better than males in reading at both primary and secondary school level. Male students have an advantage in sciences, although there are some evidences that the gap is narrowing down. (UNESCO, 2012).

Literature showed that gender is a strong predictor of human conduct and many differences have been identified between influence of gender, the behaviours, attitudes, interest, achievement and retention of male and female students. This explains the influence of gender on the learning outcomes of students which do not seem to have reached a consensus on the effect of gender on students' performance in school (Abdu-Raheem, 2012; Akinbode, 2006; UNESCO, 2012). In the light of this, the role of gender as it affects interests, achievement and retention are worth further studying in order to

provide better insight on how they influence learning outcomes, especially under experimental condition(s) of self-directed learning and simulation technique.

The debate on who achieves higher (male or female) has been a subject of academic discourse for a long time. However, Abdu-Raheem (2012) posits that improved instructional techniques can close the gender gap in achievement in social studies. Thus, this study sought to find out if achievement male and female pupils in social studies could be enhanced through SDL and simulation technique.

### **Statement of the Problem**

The implementation of Social Studies Curriculum Upper Basic II level is yet to be appreciably effective. According to Okobia (2015:68), the implementation of Social Studies in the past has not been very encouraging. Report of studies evaluating Social Studies curriculum implementation demonstrated a wide gap between the expectations of the curriculum developers and the perception and attitudes of teachers in actual classroom practice.

There are evidence of poor performances of students in Social Studies at the Upper Basic II level. Imogie (2010) observes that teachers quality determines learners strength of leaning and by extension performance in internal and external examinations. Ukadike (2005) in a study found that students poor performance at the Upper Basic II level are based on ineffective teaching strategies and appropriate learning environment to induce effective learning, Ikem (2014) remarked that poor performance in Social Studies and learning of Social Studies are based on the following factors; the employment of significant number of non-professionally qualified Social Studies teachers who lack the professional instructional orientation to present content to the cognition of learners, including inadequate use of resources, improper delivery of instruction to enhance high level of comprehension amongst learners.

Pedagogic practices at the basic level of education in Nigeria encourage learners' regurgitation of facts without the inculcation of behavioural changes which are supposed to reflect the objectives of learning Social Studies (Oyedij and Okwilagwe, 2015). Instructional practices have shifted from teacher-centeredness to student-dominated processes in many developed nations of the world. It has been established by (Okam, 2012; Abdu-Raheem, 2011; Ikwumelu & Oyibe, 2014), that exposition method does not encourage enhanced development of cognitive and affective components in learners. Grant, Utulu, 2007, suggests that it is only through the application of appropriate innovative instructional and learning methods that sound knowledge and the corresponding behaviour changes can be imparted to students. In view of this, the present study investigated experimentally, the effects of self-directed learning and simulation technique on students' interest, achievement and retention in social studies at Upper Basic II, Kogi East.

There had been frequent poor students' interest, achievement in Social Studies in upper Basic Education level in the study area of Kogi State. This deplorable state of poor students' achievement is seen in Appendix 0, which showed students performance in JS III Social Studies external examination between 2007 – 2016. The table shows the total numbers of students who sat for the examination; the number who passed within grade 1-6; and the total average number of students that passed was 56%. The percentage showed that only 4 years were above 60%. The researchers therefore, wondered what could have been responsible for the irregularities in students' achievement or performance in the study area.

There is, however, inadequate documented information in researches conducted in Nigeria and /or in the study area on the comparative effects of self directed learning (SDL) and stimulation technique on students' achievement and in Social Studies in upper Basic level of Education. The problem of this study, therefore is; what are the comparative effects of Self Directed Learning (SDL) and Simulation technique on students' achievement in Social Studies at upper basic II in Kogi East Education zone?

### **Purpose of the Study**

The purpose of this study was to compare the effects of self-direct learning (SDL) and simulation techniques on students' achievement in Social Studies at upper Basic II in Kogi East. Specifically, the study sought to:

1. Determine the difference in the mean achievement scores of students taught Social Studies using Self Directed Learning (SDL) strategy and Simulation Technique.
2. Find the difference in the mean achievement scores of male and female students taught Social Studies using Self Directed Learning(SDL) strategy.
3. Determine the difference in the mean achievement scores of male and female students taught Social Studies using simulated technique
4. Determine the interaction effect of methods and gender on students' mean achievement scores in Social Studies

### **Research Questions**

The study sought to provide answers to the following research questions:

1. What is the difference in the mean achievement of students taught Social Studies using Self Directed Learning (SDL) strategy and Simulation Technique (ST)?
2. What is the difference in the mean achievement scores of male and female students taught Social Studies using Self Directed Learning(SDL) strategy?
3. What is the difference in the mean achievement scores of male and female students taught Social Studies using simulated technique?
4. What is the interaction effect of methods and gender on students' mean achievement scores in Social Studies?

### **Hypotheses**

The following null hypotheses were formulated and tested at 0.05 level of significance:

1. There is no significant difference in the mean achievement scores of students taught Social Studies using Self Directed Learning (SDL) Strategy and those taught using simulation technique
2. There is no significant difference in the mean achievement scores of male and female students taught Social Studies using Self Directed Learning (SDL) Strategy
3. There is no significant difference in the mean achievement scores of male and female students taught Social Studies using simulation techniques
4. There is no significant interaction effect of method and gender on students' mean achievement scores in Social Studies

### **Research Method**

The study adopted the quasi-experimental design of pre-test, post-test non equivalent- group design. The reason for the adoption of this design was hinged on the fact that it was not possible to have a complete randomization of the subjects hence intact classes were assigned to experimental groups.

The design was implemented in four stages. In the first stage, pre test was administered to the first and second experimental groups. In the second stage, self-directed learning was administered to experimental group 1, simulation technique were administered to experimental group 2. In the third stage, post test was administered to both groups. Finally, the respondents were tested after 8 weeks to ascertain the level of retention of what was learned and achieved.

This study was carried out in Kogi East Education Zone of Kogi State. The researchers chose the study area because of the homogeneous nature of the people. Beside, from the literatures that were reviewed, there had not been empirical records of the use of Self Directed Learning and Simulation Technique in the zone which justified the choice of the study area.

The target population of this study consisted of 18,560 Upper Basic II students from 150 public junior secondary schools in Kogi East Education zone for 2016/2017 academic session. This population, according to Kogi the State Ministry of Education was made up of 10,240 male and 8,320 female. Out of the 150-public, co-educational schools, 6 schools were selected. 3 schools for experimental group I from old Ankpa Education Zone for Self Directed Learning, while 3 schools for experimental group II from old Dekina Education Zone for Simulation Technique.

The study used a multi-stage random sampling technique. In the first stage, purposive sampling technique was used to select 6 schools from the nine (9) Local Government Areas in Kogi East. The choice of purposive sampling technique was to enable equal and fair representation of Local Government Areas in the sample. In the 2nd stage, simple random sampling was used to pick Upper Basic II class in each school. In the 3rd stage, the number of males and female were assigned to the experimental group one and two through a random sampling technique. The co-educational nature of the schools allowed for the determination of gender variable in the study. A total of 442 Upper Basic II students formed the sample; 232 (52.5%) males and 210 (47.5%) females.

Social Studies Achievement Test (SSAT) was used as instrument for data collection. The SSAT was designed by the researcher to test students' achievement in Social Studies. The instrument consisted of 50 multiple choice objective items with four options letter A-D but was scaled down to 40 items by the analysis. The instrument used was developed based on topics in Social Studies such as marriage, family, drug abuse, communication and religion which were drawn from the Upper Basic II Social Studies curriculum. The topics cut across all terms. In constructing the SSAT, consideration was given to the objectives of the contents as these served as a guide in determining the number of topics for each of the units that were studied. The items of SSAT were developed according to lower order questions, which represented knowledge and comprehension of cognitive domain and higher thinking processes covering application, analysis, synthesis and evaluation. The administration of the lesson plan covered upper basic II students and not more than 40 minutes duration as it has been in the school timetable. Previous knowledge of the students as regards the topics such as marriage, family, drug abuse, communication and religion were ascertained. Laid down steps in instructional delivery, evaluation, conclusion, summary as well as assignment were equally presented to the students.

The instrument was presented to three experts, one in Social Studies Education, another in Curriculum and Teaching and the other in Test and Measurement from the Department of Curriculum and Teaching, Benue State University, Makurdi for



validation. These experts' advice was sought in terms of scope of coverage, content relevance, ambiguity and vagueness of expression. The experts also checked among other things whether SSAT answers were correct or not. Through this process, corrections were effected, additional items were framed and inappropriate items removed to ensure that the instruments were less ambiguous and capable of providing all the necessary information required for answering the research questions and testing the hypotheses. The SSAT had 50 items which were scrutinized by the analysis to 40.

A trial test was conducted in two secondary schools within the area of study, but outside the schools to be used for the main study. The data generated were used to compute the reliability of the two instruments. The SSAT was administered to 36 students. One day was used for the trial test. The regular Social Studies teachers served as a research assistant. The teacher was responsible for administration and collection of the instrument. The reliability of the SSAT was computed using Kuder-Richarson 21 formula. It yielded a reliability coefficient of 0.89. The instrument was considered to be sufficiently reliable to be used for the study as they met the condition of 0.70 set by Emaikwu (2011) as necessary for an instrument to be considered reliable.

The researcher obtained permission from the school principals, and letter of introduction were given to them. A week before the commencement of the experimental procedure, six research assistants were trained by the researcher. Intact classes were assigned to experimental groups. The researcher with the help of the research assistants administered the SSAT in each of the schools selected. The students were taught by research assistants who were their regular Social Studies teacher. The criteria used in the selection of these assistants were people who had first degree in Social Studies and Have at least five years of experience in teaching the subject. They were also currently teaching in Upper Basic II classes. Oral test and interviews were carried out after training to determine whether they had mastered the instructional packages. The training was carried out in the following stages:

### **Treatment Schedule**

This section covered training of research assistants, exposure of experimental group 1 to self-directed learning (treatment), and that of experimental group 11 to simulation technique. The normal time table of the schools was used for the study. Three research assistants were exposed to Self Directed Learning strategy. Lesson plans to teach the five topics selected in the experimental group 1, while on the order hand three research assistants were exposed to simulation technique in the experimental group II using simulation lesson plans on the five topics.

Data were analyzed using mean and standard deviation to answer the research questions. The hypotheses were tested at 0.05 level of significance using Analysis of Covariance (ANCOVA). This statistic was deemed appropriate because it eliminated bias which resulted from using intact classes whose equivalence in certain measures have been determined. This method removed the initial differences among the research respondents and control extraneous variables (Ali, 2006).

### **Results and Discussion**

This section presents data for analysis and interpretation of the results. It also discusses the finding of the study.

### Research Question 1

What is the difference in the mean achievement scores of students taught social studies using Self Directed Learning (SDL) strategy and Simulation Technique (ST)?

The data which provide answer to this research question is presented in Table 2.

**Table 1:** Mean and Standard Deviation of the Achievement of Students taught Social Studies using Self Directed Learning (SDL) Strategy and Simulation Technique (ST)

Method		PreSSAT	PostSSAT	Mean Gain
Simulation Technique	Mean	26.7522	46.0708	19.7522
	N	226	226	
	Std. Deviation	7.4435	8.2135	
Self Directed Learning	Mean	35.7269	59.3519	23.6250
	N	216	216	
	Std. Deviation	10.0220	9.2292	
Difference				3.8728

The analysis of data on Table 1 shows the mean achievement scores of students taught Social Studies using Self Directed Learning (SDL) strategy and Simulation Technique (ST). The table shows that 226 Upper Basic II social studies students were taught Social Studies using Simulation Technique (ST), while 216 Upper Basic II Social Studies students were taught social studies using Self Directed Learning (SDL) strategy. The table revealed that the mean achievement scores of students taught social studies using Simulation Technique (ST) was 26.75 with a standard deviation of 7.44 during pre-test and their post test scores was 46.07 with a standard deviation of 8.21. The mean achievement scores of students taught social studies using Self Directed Learning (SDL) strategy was 35.73 with a standard deviation of 10.02 during pre-test and their post test scores was 59.35 with a standard deviation of 9.23. Table 1 further shows that the mean gain of students taught social studies using Simulation Technique (ST) was 19.75 and those taught social studies using Self Directed Learning (SDL) strategy was 23.63. The mean difference between the achievement scores of students taught social studies using Self Directed Learning (SDL) strategy and Simulation Technique (ST) was 3.87 in favour of Upper Basic II students taught social studies using Self Directed Learning (SDL) strategy.

### Research Question 2

What is the difference in the mean achievement scores of male and female students taught social studies using Self Directed Learning (SDL) strategy?

The data which provide answer to this research question is presented in Table 6.

**Table 2:** Mean and Standard Deviation of Achievement Scores of Male and Female Students taught Social Studies using Self Directed Learning (SDL) Strategy

Gender		PreSSAT	PostSSAT	Mean Gain
Male	Mean	26.3534	37.6034	11.2500
	N	116	116	
	Std. Deviation	7.0059	5.7451	
Female	Mean	27.0000	37.7315	10.7315
	N	110	108	
	Std. Deviation	7.8073	8.2786	
Difference				0.5185

Table 2 shows the mean achievement scores of male and female students taught social studies using Self Directed Learning (SDL) strategy. The table shows that 116 male students and 110 female students in Upper Basic II were taught social studies using Self Directed Learning (SDL) strategy. Table 2 reveals that the mean achievement scores of male students was 26.35 with a standard deviation of 7.01 during pre-test and the post test scores was 37.60 with a standard deviation of 5.75. While the mean achievement scores of female students taught social studies using Self Directed Learning (SDL) strategy was 27.00 with a standard deviation of 7.81 during pre-test, the post test scores was 37.73 with a standard deviation of 8.28. Table 6 further reveals that the mean gain of male students taught social studies using Self Directed Learning (SDL) strategy was 11.25 and that of the female students taught social studies using Self Directed Learning (SDL) strategy was 10.73. The mean difference between the achievement scores of male and female students taught social studies using Self Directed Learning (SDL) strategy was 0.52 in favour of the male students.

**Research Question 3**

What is the difference in the mean achievement scores of male and female students taught social studies using simulation technique?

The data which provide answer to this research question is presented in Table 7.

**Table 3:** Mean and Standard Deviation of Achievement Scores of Male and Female Students taught Social Studies using Simulation Technique

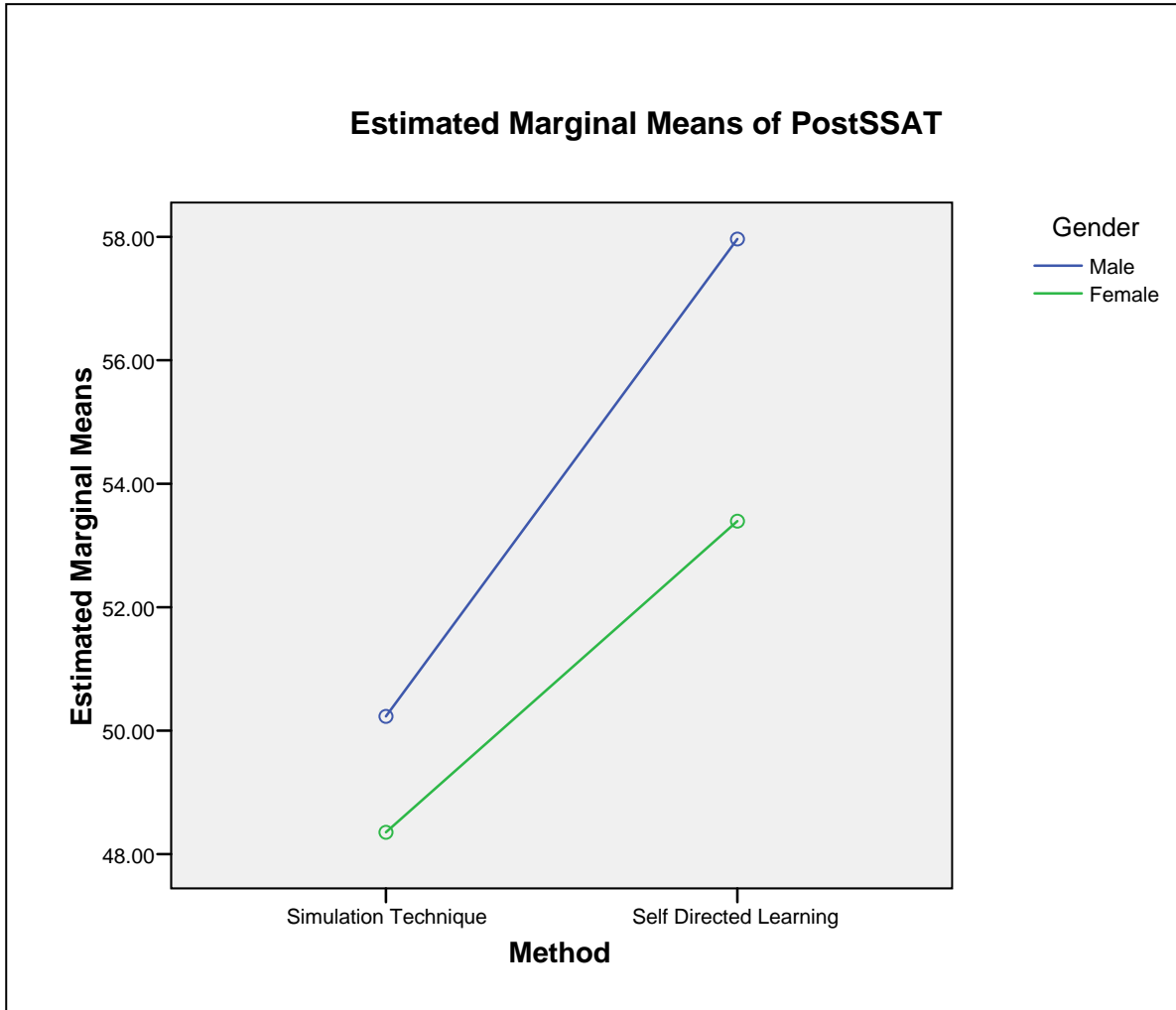
Gender		PreSSAT	PostSSAT	Mean Gain
Male	Mean	26.3534	46.6897	20.3363
	N	116	116	
	Std. Deviation	7.0059	7.7318	
Female	Mean	27.0000	45.1944	18.1944
	N	110	108	
	Std. Deviation	7.8073	8.5396	
Difference				2.1419

Table 3 shows the mean achievement scores of male and female students taught social studies using simulated technique. The table shows that 116male students and 110 female students in Upper Basic II were taught social studies using simulated technique. Table 3 indicates that the mean achievement scores of male students was 26.35 with a standard deviation of 7.01 during pre-test and the post test scores was 46.69 with a standard deviation of 7.73. While the mean achievement scores of female students taught social studies using simulated technique was 27.00 with a standard deviation of 7.81 during pre-test, the post test scores was 45.19 with a standard deviation of 8.54. Table 7 further reveals that the mean gain of male students taught social studies using simulated technique was 20.34and that of the female students taught social studies using simulated technique was 18.19. The mean difference between the achievement scores of male and female students taught social studies using simulation technique was 2.14 in favour of the male students.

#### Research Question 4

What is the interaction effect of methods and gender on students mean achievement scores in Social Studies?

The data which provide answer to this research question is presented in Figure 1.



**Figure 1:** Interaction Effect of Methods and Gender on Mean Achievement Scores of Students in Social Studies

In Figure 1, the profile plot/graph shows the interaction effect of methods and gender on students' mean achievement scores in Social Studies. The interaction pattern shows that, the plots for males and females do not intersect though not parallel lines. This indicates that there is no likelihood of an interaction effect between methods and gender in Social Studies Achievement Test (SSAT) especially when the two lines do not intersect though not parallel. But when the plot is extrapolated the intersection could only be at infinity, which means that the interaction effect between methods and gender may be attainable in this case.

### Hypothesis 1

There is no significant difference in mean achievement scores of students taught Social Studies using Self Directed Learning (SDL) Strategy and those taught using simulation technique.

**Table 4:** ANCOVA on Mean Achievement Scores of Students taught Social Studies using Self Directed Learning (SDL) Strategy and those taught using Simulation Technique.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	38703.944(a)	4	9675.986	296.337	.000
Intercept	27757.021	1	27757.021	850.087	.000
PreSSAT	18560.246	1	18560.246	568.427	.000
Method	3529.916	1	3529.916	108.107	.000
Gender	1133.238	1	1133.238	34.707	.000
Method * Gender	198.492	1	198.492	6.079	.014
Error	14268.906	437	32.652		
Total	1274072.000	442			
Corrected Total	52972.851	441			

a R Squared = .731 (Adjusted R Squared = .728)

Table 4 reveals that  $F(1, 441) = 108.107$ ;  $p = 0.00 < 0.05$ . Thus, the null hypothesis one is therefore rejected. This implies that there is significant difference in mean achievement scores of students taught Social Studies using Self Directed Learning (SDL) Strategy and those taught using simulation technique. Thus, it can be concluded that based on evidence from data analysis that there is significant difference between the mean achievement scores of Social Studies students taught using Self Directed Learning (SDL) Strategy and those taught using simulation technique. The findings agree with that of Abdul-Raheem (2011) that there is significant difference between the achievements mean scores of students in the experimental and control groups. The findings also agree with the findings of Ikwumelu and Oyibe (2014) that there was a significant difference between the mean achievement scores of students who were taught Social Studies using self-directed instructional method than those taught with orthodox/traditional methods. The finding is also consistent with that of Oyediji and Okwilagwe (2015) that self-directed learning proved to be the most significant in improving the learning of Social Studies concepts, followed by a combination of self-directed learning and collaborative task methods while the collaborative task method was the least effective. However, the findings are contrary to the findings of Adeyi (2017) that there is no significant differences between achievements mean scores of students' using inquiry method and those taught using conventional method.

The findings have promising implications for the power of Self Directed Learning (SDL) strategy to improve student's achievement as being explored in this study. The research also encourages educators to target the development of Self Directed Learning (SDL) strategy learning in their classrooms. This is because for students to attain desirable level of achievement in Social Studies, the subject must be taught and learned in a manner that is consistent with constructivists' view of learning. The essential characteristics of constructivists view are that Social Studies teaching and learning should be meaningful and interactive not resisting the learners but should create room for learners' engagement by the teacher in the learning process. Here the learners

actively take the responsibility of creating or constructing their own knowledge. Social Studies teachers are therefore expected to possess the pedagogical knowledge, capabilities and disposition needed to create the kind of learning experiences and school environment that help learners towards meaningful, integrative, value-based, challenging and active instruction. Among the strategies aimed at meeting the principles of constructivism are self-directed learning and simulation-based technique being compared in the study. Consequently, in order to realize the participation of students in practical activities, teachers are expected to use appropriate pedagogies that will not only clarify social studies but also make it more interesting, fun and less fearsome to both male and female students.

While findings on the use of Self Directed Learning (SDL) strategy and gender on the students achievement in social studies reveals that the mean achievement scores of male and female students taught social studies using Self Directed Learning (SDL) strategy was 0.52 in favour of the male students. This implies that the use of Self Directed Learning (SDL) strategy was gender sensitive in favour of male based on students' achievement in Social Studies. To check if the difference in the mean gain is statistically significant it was found that there is significant difference in mean achievement scores of male and female students taught Social Studies using Self Directed Learning (SDL) Strategy.

Likewise, findings on the use of Simulation Technique (ST) and gender on the students' achievement in Social Studies, show that the mean difference between the achievement scores of male and female students taught social studies using simulation technique was 2.14 in favour of the male students. This implies that the use of Simulation Technique (ST) is gender sensitive in favour of male based on students' achievement in social studies. To check if the difference in the mean gain is statistically significant, it was found that there is no significant difference in mean achievement scores of male and female students taught Social Studies using simulation technique. The findings agree with that of Achor, Ajayi and Imoko (2010) that male and female student's taught using games and simulation did not differ significantly in their achievement. The result showed that students that were taught with the games and simulation methods achieved better than those that were taught using the conventional method. However, the findings are contrary to the earlier findings of Adeyi (2017) that there is significant difference between male and female students in achievement.

**Hypothesis 2** There is no significant difference in mean achievement scores of male and female students taught Social Studies using Self Directed Learning (SDL) Strategy

**Table 5:** ANCOVA on Mean Achievement Scores of Male and Female Students taught Social Studies using Self Directed Learning (SDL) Strategy

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	10133.629(a)	2	5066.814	223.954	.000
Intercept	7796.429	1	7796.429	344.603	.000
PreSSAT	10042.353	1	10042.353	443.873	.000
Gender	226.942	1	226.942	10.031	.002
Error	5045.238	223	22.624		
Total	494868.000	226			
Corrected Total	15178.867	225			

a R Squared = .668 (Adjusted R Squared = .665)

Table 5 reveals that  $F(1, 225) = 10.031$ ;  $p = 0.002 < 0.05$ . Thus, the null hypothesis two is therefore rejected. This implies that there is significant difference in mean achievement scores of male and female students taught Social Studies using Self Directed Learning (SDL) Strategy. Thus, it can be concluded that based on evidence from data analysis that there is significant difference between the mean achievement scores of male and female students taught Social Studies using Self Directed Learning (SDL) Strategy. The findings agree with that of Okereke and Onwukwe (2011) that male students achieved significantly better than female students. Self-Directed Learning (SDL) as a teaching strategy encompasses the involvement of male and female learners in the process that lead them to understanding of key ideas. As a process by which individuals take the initiative, with or without the assistance of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implement appropriate learning strategies and evaluating learning outcomes. The effective use of Self-Directed Learning (SDL) strategy in teaching would ultimately enhance the achievement of both male and female students though male students performed better in this study.

**Hypothesis 3**

There is no significant difference in mean achievement scores of male and female students taught Social Studies using simulation techniques.

**Table 6:** ANCOVA on Mean Achievement Scores of Male and Female Students taught Social Studies using Simulation Techniques

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	5635.375(a)	2	2817.687	105.724	.000
Intercept	6313.517	1	6313.517	236.892	.000
PreSSAT	5626.496	1	5626.496	211.114	.000
Gender	1.347	1	1.347	.051	.822
Error	5943.263	223	26.651		
Total	334436.000	226			
Corrected Total	11578.637	225			

a R Squared = .487 (Adjusted R Squared = .482)

Table 6 reveals that  $F(1, 225) = 0.051$ ;  $p = 0.82 > 0.05$ . Thus, the null hypothesis three is therefore not rejected. This implies that there is no significant difference in mean achievement scores of male and female students taught Social Studies using simulation techniques. Thus, it can be concluded that based on evidence from data analysis that male and female students taught Social Studies using simulation technique do not differ significantly in their mean achievement scores. Okereke and Onwukwe (2011) findings on the use of Simulation Technique (ST) and gender on the students achievement in social studies, show that the mean difference between the achievement scores of male and female students taught social studies using simulation technique was 2.14 in favour of the male students. This implies that the use of Simulation Technique (ST) is gender sensitive in favour of male based on students' achievement in social studies. To check if the difference in the mean gain is statistically significant, it was found that there is no significant difference in mean achievement scores of male and female students taught Social Studies using simulation technique. The findings agree

with that of Achor, Ajayi and Imoko (2010) that male and female student’s taught using games and simulation did not differ significantly in their achievement. The result showed that students that were taught with the games and simulation methods achieved better than those that were taught using the conventional method. However, the findings are contrary to the earlier findings of Adeyi (2017) that there is significant difference between male and female students in achievement.

**Hypothesis 4**

There is no significant interaction effect of method and gender on students’ means achievement scores in Social Studies

**Table 7:** Tests of Between-Subjects Interaction Effects of Methods and Gender on Students’ Mean Achievement Scores in Social Studies

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	38703.944(a)	4	9675.986	296.337	.000
Intercept	27757.021	1	27757.021	850.087	.000
PreSSAT	18560.246	1	18560.246	568.427	.000
Method	3529.916	1	3529.916	108.107	.000
Gender	1133.238	1	1133.238	34.707	.000
Method * Gender	198.492	1	198.492	6.079	.014
Error	14268.906	437	32.652		
Total	1274072.000	442			
Corrected Total	52972.851	441			

a R Squared = .731 (Adjusted R Squared = .728)

Table 7 reveals that the interaction effect of methods and gender on students’ mean achievement was significant,  $F(1, 441) = 6.079, P < 0.05$ . Therefore, we reject the null hypothesis and draw conclusion that there is significant interaction effect of method and gender on students’ mean achievement scores in Social Studies. Okereke and Onwukwe (2011) findings on the use of SDL and Simulation Technique (ST) and gender on the students’ achievement in social studies, show that the mean difference between the achievement scores of male and female students taught social studies was negligible with SDL having an edge on ST in favour of the male students. This implies that both SDL and Simulation Technique (ST) is gender sensitive in favour of male based on students’ achievement in social studies. To check if the difference in the mean gain is statistically significant, it was found that there is no significant difference in mean achievement scores of male and female students taught Social Studies using self directed learning technique and simulation technique.

**Conclusion**

Based on the findings of this study, it was concluded that self directed learning and simulation technique enhance students interest, achievement and retention in social studies. It was concluded that social studies concept are better taught via self directed leaning, since the students find themselves reassessing the importance of social studies and becoming more interesting. The study concluded that self directed learning is gender sensitive in favour of male based on student’s interest in social studies. Interest is a degree of choice that the leaner has within an instructional



situation. Learners exhibited different levels of self direction in different learning situation.

The study concluded that students taught social studies using ST is gender sensitive in favour of male based on student's interest in social studies but in achievement and retention scores, the subject is not affected by gender.

Since self directed learning and simulation technique has been proven to be instrumental in helping teachers to teach Social Studies more meaningfully in improving achievement; the persistent poor achievement of Upper Basic II social students need not to continue. There is hope that with self directed learning and simulation technique. The situation can be changed or reduced to the minimal.

### **Recommendations**

The following recommendations were made in the light of the findings of this study.

1. Social Studies teachers should employ self directed learning strategy and simulation techniques in their classroom interaction since they have the capacity to improve student's interest, achievement and retention in the subject.
2. Social Studies teachers should regularly provide the structure and opportunity for learners to employ these learning methods.
3. Students with low achievement and female students who are observed to have less academic achievement should be encouraged academically since they are influenced by the methods to succeed in a students' centered academic environment to close gender gap
4. In service training, seminars, work-shops and symposia should be organized by the state and federal ministry of education for training social studies teachers on the use of self directed learning and simulation in teaching the subject.
5. Social studies teachers' guide and workbook including the modules on the use of self directed learning are recommended.
6. Self directed learning and simulation technique should be included in the training package of teacher education programme both in colleges of education and at university level to ensure that teacher trainees acquire necessary skills to effectively implement the techniques.

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