



Effect of guided Inquiry Instructional method on students' achievement in social studies in Anambra State

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Abstract

Students' academic achievement in social studies has been fluctuating especially in Junior Secondary School Certificate Examination in Anambra State. This study examined the effect of guided inquiry instructional method of teaching on students' achievement in Social Studies in Anambra State. The study was guided by two research questions and three hypotheses. This study was a quasi-experimental research design using 2 x 2 factorial non-randomized pre-test, double post-test control group type. The target population for this study comprised all Junior Secondary School year two (JS2) Social studies students numbering 28,381 in Anambra State. The sample size for this study comprised 96 JSS2 students (54 females and 42 males) from two public secondary schools in Anambra State from two different education zone. One public school with an intact Class of 48 students (27 females and 21 males) serve as experimental group, while the other school with an intact class of 48 (students, 25 females and 23 males) serve as control group. The experiment lasted for eight weeks. The instrument for data collection was the Social Studies Achievement Test (SSAT) developed by the researcher. Mean and standard deviation scores were used to answer the research questions, while the null hypotheses were tested at .05 level of significance using Analysis of Covariance (ANCOVA). The results show that Guided Inquiry instructional method (GIIM) was more effective in improving the achievement of students in Social Studies than the conventional lecture method (CLM). Furthermore, there was a significant interaction effect of teaching methods and gender on the achievement of students in Social Studies. Based on the above findings, the researcher recommends among others that opportunities for functional learning could be provided in the curriculum through the use of Guided Inquiry Instructional Method (GIIM).

Keywords: Academic achievement, social studies, inquiry, guided inquiry, gender

Introduction

Education plays a pivotal role in national development by equipping learners with the knowledge, skills, and values needed to function effectively in society. In Nigeria, Social Studies has been deliberately integrated into the curriculum at the basic and secondary levels to foster citizenship, promote social values, and prepare young people for responsible participation in a democratic society. However, concerns persist about students' underachievement in Social Studies, as well as their inability to apply learned concepts to real-life civic problems. These concerns have prompted researchers and policymakers to search for more effective instructional strategies that can enhance student learning outcomes (Uzokife & Ihekwe, 2023; Ogheneakoke, 2023) [16, 18].

Social Studies was introduced into the Nigerian school system in the early 1970s to address social challenges such as ethnic conflict, civic apathy, and weak national integration. It is meant to help students acquire critical thinking skills, civic competence, and a sense of responsibility. Despite its centrality, research and national assessment reports indicate persistent challenges, including poor student performance, rote learning, and lack of engagement (Ogbaga *et al.*, 2024; Ibrahim, Abdullahi, & Abdul Jamal, 2025) [10, 15]. The teaching of Social Studies in many Nigerian schools remains dominated by expository, lecture-based methods, which prioritize memorization over active participation, questioning, and application (Edinyang, Ubi, & Adalikwu, 2013).

The curriculum for Social Studies as a subject aims at creating educated individuals who can be responsible

citizens of their nation. Teaching children Social Studies increases the possibility of their becoming more aware and more responsible as human beings. Teaching Social Studies increases chances that students will adhere to ethical and moral values in life. The study of social sciences is necessary, if the society wants a brighter future for her children. The vital task of preparing students to become citizens in a democratic society is complex. The social studies disciplines are diverse, encompassing an expansive range of potential content. This content engages students in a comprehensive process of confronting multiple dilemmas, and encourages students to speculate, think critically, and make personal and civic decisions based on information from multiple perspectives.

In spite of the important place of Social Studies in our educational system, students' academic achievement in the subject has shown a fluctuating decline especially in Junior Secondary School Certificate Examination in Anambra State. Social Studies BECE result analysis of for five consecutive years; 2020 - 2024 has indicated that as at 2020, the percentage of students that passed was 48.30%, and in 2021 it decreased to 47.61%, and in 2022 it dropped to 45.90%. Also, in 2023 the percentage of students that passed dropped to 36.92%, in 2024 it further dropped to 34.05%. The report also identified areas of difficulty in social studies to include: agents of socialization, importance of socialization, problems of socialization, solution to the problem of socialization, sub-sectors of the economy, roles of the sub-economic sectors in national development, Problems facing the economic sectors in Nigeria, solution to

the problems facing the economic sectors in Nigeria. Other areas are: level of educational institutions in Nigeria, functions of educational institutions, changes that have occurred in educational system since Nigerian independence, problems facing education system in Nigeria and Solution to the problems of education system in Nigeria of the JSSII curriculum. The analysis of the result reveals that the number of failures exceed the number of passes, and this situation raises concerns among education stakeholders. Academic achievement denotes the students' academic outcome having gone through a particular educational program over a given period of time. Academic achievement is the degree or level of success attained at the end of an academic endeavor (Oladehimide, 2023) ^[17]. The yardstick for measuring one's level of achievement is by assessing the academic performance of an individual through test and observation. Academic achievement helps in proper evaluation of students and identification of their strengths and weaknesses. In the context of this study, academic achievement is the relative change in behaviour of students as a result of effective teaching of Social Studies in secondary schools. The issue of low academic achievement of secondary school students in Social Studies has been attributed to poor method of teaching (Ibiyengibo, 2019) ^[9]. Hence, the researcher feels that the use of Guided inquiry method of teaching may play a key role in relation to students' academic achievement and retention in Social Studies.

Academic achievement in Social Studies is a crucial indicator of students' understanding of societal structures, historical events, and civic responsibilities. Social Studies as a subject plays a significant role in shaping informed and responsible citizens who are capable of critical thinking and active participation in society. However, many students face challenges in achieving high academic performance in Social Studies, often due to the traditional methods of instruction that emphasize passive learning and memorization rather than active engagement and critical inquiry.

Guided Inquiry instructional method in the classroom can generally foster the interaction between the learner and other learners and between the learner and the content of instruction irrespective of their gender. The essence of this much needed meaningful interaction in the classroom therefore creates gap between what is taught in the classroom and the experiences and activities the learners meet outside the classroom. It is critical that Social Studies teaching and learning using guided Inquiry instructional method, not only seeks to bridge this gap in order to make learning realistic, but also to harness the power of this Guided Inquiry based learning for instructional gain.

Gender refers to different roles played by male and female students in learning and how it affects their achievement and retention in school work. Gender in the context of this study is the difference between males and females as well as their relative achievement and retention in Social Studies in the learning process. Issaka (2021) ^[11] found that gender is a significant factor in students' academic achievement in some subject areas. Eseine-Aloja (2020) ^[7] reported that women perform better than men in French in schools, while Ezenwobudo and Nwaniekezi (2024) ^[8] found that the effect of gender on students' academic achievement in CRK is statistically significant, that males perform better than females. Gender is a very important variable in this study

because personal orientation and thinking style of male and female students could play a crucial role in achievement and retention in Social studies when exposed to guided inquiry instructional method.

It is for this reason that the research on the effect of Guided Inquiry instructional method on students' academic achievement and retention in Social Studies in secondary schools is not only imperative but also timely.

Research Questions

The following research questions will guide the study

1. What is the difference in the mean achievement scores of students taught Social Studies using Guided Inquiry instructional method and those taught using lecture method?
2. What is the difference in the mean achievement scores of male and female students taught Social Studies using Guided Inquiry instructional method?

Hypotheses

The following formulated null hypotheses will be tested at .05 level of significance

1. There is no significant difference in the mean achievement scores of students taught Social Studies using Guided Inquiry instructional method and those taught using lecture method.
2. There is no significant difference in the mean achievement scores of male and female students taught Social Studies using guided inquiry instructional method.
3. The interaction effect between method and gender on the mean achievement scores of students in Social Studies is not significant.

Method

This study adopted a quasi-experimental research design using 2 x 2 factorial non-randomized pre-test, double post-test control group type. The study was carried out in Anambra State. The target population for this study comprised all Junior Secondary School year two (JS2) Social studies students numbering 28,381 in Anambra State. The sample size for this study comprised 96 JSS2 students (54 females and 42 males) from two public secondary schools in Anambra State from two different education zone.

The instrument for data collection was the Social Studies Achievement Test (SSAT), SSAT was a researcher adapt instrument from BECE Social Studies exam questions and it contains two sections. Section A contains bio-data information of the respondents, while section B contains 50 multiple-choice items questions to which respondents are expected to provide the correct answer by selecting the correct option.

Furthermore, copies of the instrument that is SSAT with the research questions and hypotheses were given to one experienced Social studies teacher with at least ten years of experience and two lecturers from NnamdiAzikiwe University, Awka, Anambra State for validation. The experts were asked to assess the instrument in terms of scope of coverage, content relevance, ambiguity and vagueness of expression. The experts are expected to check whether the answers to SSAT are correct or not, the appropriateness of instructional method designed for the study will also be scrutinized. Corrections and suggestions

arising from these experts were used to review the instrument and the instructional method. The reliability of SSAT were determined by the use of Kuder Richardson Formula 20 (KR20). The reliability of the instruments was found to be 0.91 for the SSAT.

The experiment was carried out in two phases

Phase 1: Briefing of teachers. The briefing of teachers lasted for two weeks of two contact per week and six teachers were involved in the teachers meeting with the researcher twice in a week (Wednesdays and Fridays) for two hours each after school hours for two weeks. This was to ensure that the training did not disrupt their school activities.

Week 1: The researcher explained the aim of the research to the research assistants, introduces and explained guided inquiry model of instruction and traditional lecture method. The researcher also discussed the modalities for the treatment, what to emphasize during the treatment, and ensure that all the instructional materials are made available.

Week 2: The researcher demonstrated how to teach the students using guided inquiry method of instruction in the lesson plan and traditional lecture method following how it is written in the lesson plan. After the demonstration, the research assistants taught as the researcher observers them to make necessary corrections.

Phase 2: Teaching the students

Before the actual experiment starts, the two groups were pretested and the script were graded and recorded by the researcher. The test was administered to the two groups. After the pretest, the research assistants started teaching the students following strictly what was written in the lesson plan. The experimental group were taught by their class teachers using the treatment packages for the two groups while the control group was taught the same content in social studies using the lecture method of teaching. The control group was taught by the regular methods teachers' uses at their normal period. Twelve lesson periods (six periods each for both the experimental and control) on the whole was taught with the usual method employed by the teacher in their lesson. The teacher used the lesson plan prepared by the researcher. At the end of the lesson in the sixth week for each group, a revision of all that was taught was done.

Post tests was administered to all the groups in each school a day after the completion of treatment. Furthermore, the items of SSAT were re arranged and administered as delayed posttest. The essence of this is to direct the students from realizing that they have responded to the test instrument before. The scripts were collected, marked and scored. Each of the 50 questions on the GAT was scored 2 marks, giving a total of 100 marks. The data were finally analyzed based on the scores.

Control of Extraneous Variables

The extraneous variables which may introduce bias to study were controlled by adopting the following procedures

Experimenter Bias: One of the major sources of effect on the study is the experimenter bias which is introduced when

the experimenter becomes the investigation. To control this, the researcher makes use of research assistants for the study. Also, the same units of instruction were use for the two groups.

Initial Group Differences: In the selection of the subject for this study, intact classes used because of administrative inconveniences of disrupting normal class setting as practiced in the schools. This therefore would create a non-randomization effect. To control this initial group differences of the subject in the group, analysis of covariance (ANCOVA) was applied in analysing the data from the study using the pre-test scores as covariates to the post-test scores.

Teacher Variable: To control the teacher variable for this study, the researcher was organized the training for the six research assistants so that differences in the effectiveness of individual teachers would be made to follow the lesson plans strictly.

Hawthorne Effect: Hawthorne effect is said to occur where the subject become aware that they are being observed or used in a study and could result in gaps or difference in normal study. Hawthorne effect was controlled in this study by using the regular teachers known to the student.

Class Interaction: The schools for the study have considerable distance from each other since the researcher was aware of possible interaction between the students in the experimental groups and control group.

Novelty Effect: Novelty effect is created when a new teaching or instructional material is introduced in the teaching-learning endeavor. This effect may be positive or negative in nature. The presence of an experimenter for instance, would create this novelty effect on the students, in order to minimize that, the social studies teachers of the students were used for the study.

Pre-test Sensitization: For the fact that the same instrument was used for the study as post-test and retention test students was likely become familiar with the test instrument thereby introducing error in the study. For that, all the instruments were collected by the researcher after post-testing and kept until the day of retention test and students were not-informed that there will be any such. Moreover, the duration before the retention test (two weeks) is enough to diminish any effect of post-test.

Mean and standard deviation scores were used to answer the research questions, while the null hypotheses will be tested at .05 level of significance using Analysis of Covariance (ANCOVA).

Results

This section deals with the presentation and discussion of results based on the research questions and hypotheses which guided the study.

Research Question 1: What is the difference in the mean achievement scores of students taught Social Studies using Guided Inquiry instructional method (GIIM) and those taught using conventional lecture method (CLM)?

Table 1: Difference in the Mean Pretest and Posttest Achievement Scores of Students Taught Using GIIM and those Taught CLM

Gender Mean	N	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Mean Gain	Adjusted
Male	21	21.90	4.09	81.00	3.83	59.10	80.96
Female	27	22.22	4.68	67.70	4.36	45.48	67.73
Difference in Mean	—	0.32	—	13.30	—	13.62	13.23

Table 1 shows the various means on achievement pre-test and post test scores of the students taught Social Studies with Guided Inquiry instructional method (GIIM), and those taught using conventional lecture method (CLM) in Social Studies. From Table 4.1, the gain in mean of the achievement showed that Guided Inquiry instructional method (GIIM) gained 51.44, while conventional lecture method (CLM) gained 18.52. The mean difference between the Guided Inquiry instructional method (GIIM) and

conventional lecture method (CLM) revealed that Guided Inquiry instructional method (GIIM) was more effective in improving the achievement of students in Social Studies than the conventional lecture method (CLM).

Research Question 2: What is the difference in the mean achievement scores of male and female students taught Social Studies using Guided Inquiry instructional method (GIIM)?

Table 2: Differences in pretest and posttest mean achievement scores of male and female students taught Social Studies using Guided Inquiry instructional method (GIIM)

Gender Mean	N	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Mean Gain	Adjusted Mean
Male	21	21.9	4.09	81.0	3.83	59.1	80.96
Female	27	22.2	4.68	67.7	4.36	45.48	67.73
Difference in Mean	—	0.32	—	13.3	—	13.62	13.23

Table 2 shows that male students had 59.1 means gain, while their female counterparts had a mean gain of 45.48. The difference in the mean gain achievement scores of male and female students taught Social Studies using Guided Inquiry instructional method (GIIM) is 13.62. From the gains in mean, there is difference between female and male students' achievement taught Social Studies with Guided

Inquiry instructional method (GIIM) in favour of male students.

Hypotheses 1: There will be no significant difference between the pretest and posttest mean achievement scores of students taught Social Studies using Guided Inquiry instructional method (GIIM) and those taught using conventional lecture method (CLM).

Table 3: Summary of ANCOVA for Significant Difference Between the Pretest and Posttest Mean Achievement Scores of Students Taught Social Studies using GIIM and CLM

Source	SSS	Df	Mean Square	F	Sig.	η ²	Power
Corrected Model	26512.616 ^a	2	13256.308	280.219	.000	.858	1.000
Intercept	11471.077	1	11471.077	242.482	.000	.723	1.000
Pretest	12.356	1	12.356	.261	.611	.003	.080
Method	26505.781	1	26505.781	560.294	.000	.858	1.000
Error	4399.540	93	47.307				
Total	341791.000	96					
Corrected Total	30912.156	95					

Table 3 shows that there is a significant difference between the mean achievement scores of students taught Social Studies using Guided Inquiry instructional method (GIIM) and conventional lecture method (CLM) while controlling for the covariate (pre-test scores) ($F(1,93) = 560.294, P < .05$). The effect size, calculated as eta squared (η^2), was 0.858, indicating a large effect with observed power of 1.000. The effect size suggests that about 85.8% of the variance in the academic achievement scores of students in Social Studies can be accounted for by the method while controlling for the covariate (pretest scores). The null

hypothesis which states that there is no significant difference in the pre-test and posttest mean achievement scores of students taught of students taught Social Studies using Guided Inquiry instructional method (GIIM) and those taught using conventional lecture method (CLM) was rejected.

Hypotheses 2: There is no significant difference in the mean achievement scores of male and female students taught Social Studies using Guided Inquiry instructional method (GIIM)

Table 4: Summary of ANCOVA for Significant Difference Between the Male and Female Mean Achievement Scores of Students Taught Social Studies using GIIM and CLM

Source	SS	Df	Mean Square	F	Sig.	η ²	Power
Corrected Model	2133.017 ^a	2	1066.509	64.423	.000	.741	1.000
Intercept	11251.615	1	11251.615	679.663	.000	.938	1.000
Pretest	44.668	1	44.668	2.698	.107	.057	.362
Gender	2063.561	1	2063.561	124.651	.000	.735	1.000
Error	744.962	45	16.555				
Total	262333.000	48					
Corrected Total	2877.979	47					

Table 4 shows that gender has significant effect on the mean achievement scores of students taught Social Studies using Guided Inquiry instructional method (GIIM) and conventional lecture instructional method (CLIM) while controlling for the covariate (pre-test scores)($F(1,45) = 124.651, p < .05$). The effect size, calculated as eta squared (η^2), was .735, indicating a large effect with observed power of 1.000. The effect size suggests that about 73.5% of the variance in the achievement scores of students in Social Studies can be accounted for by gender when controlling for

pretest scores. In other words, gender has significant effect on the mean academic achievement scores of students taught Social Studies using Guided Inquiry instructional method (GIIM) while controlling for the covariate (pre-test scores).

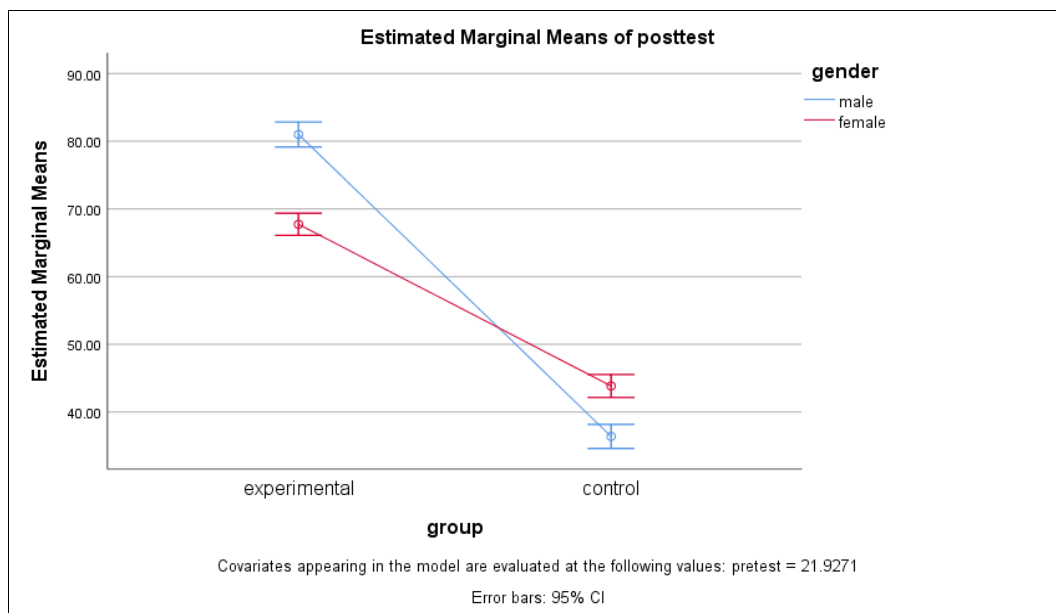
Hypotheses 3: There is no significant interaction effect of teaching methods and gender on students mean achievement in Social Studies.

Table 5: Summary of Analysis of Covariance (ANCOVA) Test for Significant Interaction Effect of Gender and Teaching Methods on Students' Mean Achievement Scores in Social Studies

Source	SS	Df	Mean Square	F	Sig.	η^2	Power
Corrected Model	29257.902 ^a	4	7314.476	402.367	.000	.946	1.000
Intercept	11583.885	1	11583.885	637.226	.000	.875	1.000
Pretest	12.388	1	12.388	.681	.411	.007	.129
Methods	27855.572	1	27855.572	1532.326	.000	.944	1.000
Gender	200.543	1	200.543	11.032	.001	.108	.908
methods * gender	2553.540	1	2553.540	140.469	.000	.607	1.000
Error	1654.254	91	18.179				
Total	341791.000	96					
Corrected Total	30912.156	95					

Table 5 shows the interaction between gender and method of teaching on the achievement of the students in Social Studies. It can be deduced that there exist a significant interaction effect between methods and gender on the mean achievement of the students, thus, $F(1,91) = 140.469, p < .05$ while controlling for the covariate. The effect size, calculated as eta squared (η^2), was .607, indicating a large effect with observed power of 1.00. The effect size suggests that about 60.7 % of the variance in the achievement scores

of students in Social Studies can be accounted for by the interaction of methods with gender while controlling for pretest scores. By implication the mean achievement scores of students taught Social Studies using Guided Inquiry instructional method (GIIM) and conventional lecture method (CLM) depend on their gender. In other words, there is significant interaction effect of methods and gender on students mean achievement in Social Studies while controlling for the covariate (pretest scores). See fig 1 below



Discussion of Findings
Effects of Guided Inquiry instructional method (GIIM) on Academic Achievement

The researcher found out that Guided Inquiry instructional method (GIIM) was more effective in improving the achievement of students in Social Studies than the conventional lecture method (CLM). Corresponding hypothesis shows that there is a significant difference in the pre-test and posttest mean achievement scores of students

taught of students taught Social Studies using Guided Inquiry instructional method (GIIM) and those taught using conventional lecture method (CLM) while controlling for the covariate. The above findings are in line Ani e tal (2021) [3] study that reported that there were significant improvements in the mean scores of high and low ability learners in urban and rural school locations taught Social Studies with the Guided Inquiry method. This guided inquiry can enhance students' ability to learn effectively

from their peers even when instructional resources, teaching aids and teacher time are insufficient in urban and rural areas. However, the findings disagree with Akpoghoi, Ezeudu, Adzape, and Otor (2016) [2] study that showed that the students taught electrochemistry using conventional lecture method (CLM) performed higher than those taught using Guided Inquiry instructional method (GIIM).

Effect of Gender on Academic Achievement in Social studies

The researcher found out that there is difference between female and male students' academic achievement taught Social Studies with Guided Inquiry instructional method (GIIM) in favour of male students. Corresponding hypothesis, there is a significance difference between female and male students' achievement taught Social Studies with Guided Inquiry instructional method (GIIM) in favour of male students. The above findings is in line with Eseine-Aloja (2021) study that revealed that there is a significant statistical difference in the performance of male biology students who attend Guided Inquiry instructional method (GIIM) and female students who do attend biology Guided Inquiry instructional method (GIIM); with male students performing better. The study was also supported by Mwhia (2020) [14] findings there was significant difference in academic achievement among the gender of students, with the male students having better academic achievement scores than their female counterparts using guided inquiry instructional method. The male students were found outperforming their female counterparts. There was statistically significant difference in academic achievement between gender. However, on contrary, the findings disagree with Ani e tal (2021) [3] study that revealed that gender (male/female) had no significant effect on students' achievement in Basic Science and finally, result showed that there was significant interaction effect of treatment and gender on students' academic performance in Basic Science. However, the finding disagrees with James, Joda and Ugwuadu (2024) [12] study revealed that there is a no significant difference between the retention ability mean score of male and female students who were taught with guided inquiry laboratory-based instruction and those taught with unguided

Interaction Effect of Teaching Methods and Gender on the Achievement of Students in Social Studies.

The researcher also found out that there is significant interaction effect of teaching methods and gender on the achievement of students in Social Studies. The above finding is line with Ani e tal (2021) [3] study that showed that there was significant interaction between guided inquiry instructional method and gender on students' academic achievement. James, Joda and Ugwuadu (2024) [12] study also revealed that, there was a significant interaction effect of Guided-Inquiry methods on biology students' academic performance based on gender. The findings agree with Eseine-Aloja (2021) study that revealed that there exist a significant interaction effect of gender and teaching method recorded in the study may be due to the fact that inquiry teaching strategy is activity oriented and encourages active participation of students in teaching and learning process, generally enhance knowledge construction and achievement in students irrespective of gender. However, the finding disagrees with Ekomaye (2019) [6] study that revealed that

there is no significant interaction effect of teaching methods with gender on the mean achievement scores of students taught light and sound waves using Guided Inquiry instructional method (GIIM).

Conclusion

The findings in this study is in line with the work of other researchers who confirmed that learner centred the findings of this study it could be concluded that guided inquiry instructional method is more effective for teaching/learning content during Social Studies lessons in the secondary schools, than the traditional method. The increase in the performance might be attributed to the fact that the guided instructional method encouraged student-to-student interaction thus enhancing learning. The result showed that students can be adequately and deliberately exposed to Social Studies using the Guided Inquiry Instructional Method (GIIM) during the teaching of Social Studies topics.

Recommendations

Based on the findings discussed above, the following recommendations are made

1. Opportunities for functional learning could be provided in the curriculum through the use of Guided Inquiry Instructional Method (GIIM). This would enable students of high and low ability levels in urban and rural school locations learn basic Social skills and gain confidence in their ability to reliably gather and interpret facts as they learn from their own inquiry.
2. The teacher-training curriculum in Nigeria should include Guided Inquiry Instructional Methods in order to equip would-be teachers with the techniques and processes involved in the strategies.
3. Social Studies teachers should be encouraged to use Guided Inquiry Instructional Method (GIIM) to ensure that students of every ability level engage in practical Social Studies curriculum tasks. This would save the cost of high technology materials as well as promote students' achievement in Social Studies.
4. Social Studies specialists should collaborate with NERDC or other support services to produce Guided Inquiry Instructional Method (GIIM) materials suitable for the Nigerian learners.
5. It is necessary for, textbooks writers and publishers to provide for Guided Inquiry Instructional Method (GIIM) experiences in the form of illustrations or step-by-step tutorial in their textbooks so that learners using them can develop their interest

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