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INQUIRY-BASED LEARNING STRATEGY FOR IMPROVING ACADEMIC PERFORMANCE AND RETENTION IN SOCIAL STUDIES IN SECONDARY SCHOOLS IN LAGOS STATE

¹Uzokife, Georgina Chinelo

gc.uzokife@unizik.edu.ng

Department of Education Foundations

Faculty of Education, Nnamdi Azikiwe University, Awka.

²Ihekwe Nkechi Cynthia
ihekwuemenkechi1973@gmail.com
Department of Social Studies
Federal College of Education Eha-Amufu

Abstract

The purpose of this study was to investigate the effectiveness of inquiry-based learning strategy over traditional lecture method in improving academic performance and retention in Social Studies of upper basic education class II students in Lagos State. The study was guided by two research questions. Kosofe Education Zone I upper basic education class II students' forms the population of the study and the sample consists of 60 students drawn from two schools from the zone through simple random sampling technique. Quasi-experimental nonequivalent pretest-posttest control group design was used. Two classes (groups) from the two schools were randomly selected, one from each school and were assigned to experimental and control groups by ballot. The experimental group was taught by inquiry-based learning strategy while the control group was taught by traditional lecture method. The pretest and posttest data were analyzed using mean and standard deviation statistics. The findings of this study show that inquiry based learning strategy improved academic performance of students in social studies to a great extent and enhanced their retention of concepts learned to a great extent when compared with their counterparts taught with the traditional lecture method. Students' also demonstrated interest and enthusiastic attitude towards inquiry based learning strategy. It was recommended that seminars should be organized for social studies teachers on negative effects of inappropriate instructional strategies on students, also that government should organize workshop for social studies teachers on how to adopt inquiry-based learning strategies in teaching social studies at all levels.

Introduction

Generally, education is perceived as a veritable tool for national development and social change. As a matter of fact, the only thing which is constant in this world is change and the educational process and procedure which is the circuit of change must be sensitive to societal expectations and aspirations, at such, must be dynamic. Maduwesi (2005) submits that the need to upgrade all existing instruments made available to school administrators, teachers, educational planners, and to constantly review every aspect of educational programmes and processes cannot be overemphasized.

Friesen and Scott (2013) explains that there is a growing body of research which suggests that models of education designed for the needs of industrial past are consequentially inadequate for the multifaceted challenges and opportunities awaiting the 21st century students. He expresses the view that although the awakening call for educational reforms different from passive transmission based learning to impacting of discrete skills, competences and processes is not new, educational institutions world over are reconsidering some of their assumptions about how they conceptualize learning and how

education should be directed. Akudolu (2005) adds that new approaches, strategies and methods aimed at enhancing accessibility to qualitative education in Nigeria, and for raising the quality of learning processes need to be explored. Social Studies as a value laden subject is not left-out. It is the subject through which social and cultural values of the society are imparted to the younger generations.

Social Studies educators are also in search of student centered pedagogy capable of influencing students three domains of academic development namely: cognitive, affective and psychomotor domains, motivating learners, capturing their interests, provoking critical thinking abilities, improving academic performance and enhancing retention. Lawal & Oyeleye (2003) explain that social studies education is seen as a framework for an overall development of individuals and the society as recipients of such education become useful for themselves, the society and all community of humans at large. The process of education becomes joyful and interesting when students are motivated and their academic performance progressive and encouraging. By implication, social studies students should be capable of identifying the inter-dependant relationship between academic content of concepts taught in school and their real life application to make education relevant and functional.

Unfortunately, Abdu-Raheem (2012) discloses that the level of commitment of students to learning and their academic performance is reducing consistently. She points out that the factors responsible for this among others is traceable to adoption of inappropriate pedagogy by teachers in schools including social studies teachers. She also observed that students find it difficult to identify and seek solution to common life problems but rather depend on teachers and other adults for solution. Adediran and Olugbuyi (2013) explain that with inappropriate strategies, learning in the cognitive, affective and psycho-productive domains is not facilitated. Ajitomi, Salako and Ojebiyi (2013) regret that with teacher centered learning strategies students may acquire head knowledge through mere regurgitation of facts and information but those learning hardly influence their hearts, hands, nor attitude. This explains why students may pass social studies but with little or no observed changes in their behavior as indicated in the goals of social studies education.

Sadly, O'Keefe (2004) posits that our traditional system of education has worked in a way that discourages the natural process of inquiry and intellectual efforts in learning which is detrimental to improved academic performance. According to him, students are not tasked with challenging issues and questions capable of developing their creative abilities, critical thinking skills and inquiry skills. Abdul-Raheem (2012) disclosed that conventional lecture method of teaching had negative effects on students such as, lack of motivation, negative attitude towards the subject, and low performance on both parts of the teacher and learners. She argues that lecturer method applied in teaching social studies in Ekiti state secondary schools proved ineffective. Perhaps, inquiry-based learning strategy applied in social studies teaching can be a panacea for convey the many concepts of social studies so that students can learn, retain, apply the knowledge and perform better in schools?

Inquiry base learning is a project oriented pedagogic strategy based on constructivist and socio-constructivist theories of learning. Stofflet (1994) cited in Abdul-Raheen (2012) explains that conceptual change theory is grounded in constructivist learning theory, recognizing the fact that alternative conceptions learners brought to the classroom affect the learning of new materials. Consequently, he argues that to facilitate conceptual change in social studies education, a new orientation should be directed towards a constructivists learning approach which seems to have the capability of motivating the students to learn and enhance their academic performance. Eric & Reed (2002) posit that inquiry based learning strategy is often described as a cycle or a spiral, which implies formulation of a question, investigation and creation of a solution. Obadiora (2013) maintains that inquiry based learning is extremely student centered and student directed. O'keefe (2004) reports that it is rapidly gaining popularity in the United States, the United Kingdom, in China and Columbia and argues that although, inquiry learning strategy takes time and energy in planning, it can still be used for virtually all subjects.

Eric and Reed (2002) present the features and process of activities engaged by people using inquiry based learning strategy to include:

- Initiating or posing open-ended or probing questions
- Generating information, idea or evidence to answer the questions
- Explaining the idea or evidence obtained
- Associating or relating the explanation to the knowledge generated from the inquiry processes
- Engaging in discussion and deliberation to justify the explanation.

As educators, Bacak and Byker (2021) believe that inquiry based teaching gives students the opportunity to engage in personal learning that is meaningful, and challenging. Whether it was a teaching of science, math, social studies, or literacy, students are encouraged to question and explore, mess around with materials, both physically and mentally and make meanings themselves. Learners learning through inquiry based strategy excel by work-sharing, expressing opinion, discussing and building on every one's work since this strategy is a socio-constructivist design and due to co-operative work within which learners search for resources and use tools.

Similarly, Witt and Umer (2010) posit that using inquiry-based strategy or constructivist curriculum appeared to be more effective in enhancing students' academic performance within a unit of instruction. They submit that inquiry based curriculum yielded great benefit in students' performance without sacrificing state curriculum standards. They concluded that their students' result, at the end of the study demonstrated that inquiry based learning approach can benefit students who have been low performers in the past. In the same vain Abdi (2014) discloses that inquiry based learning curriculum can increase students performance and reduce the gap between high and low performing students as well as increase students interest on what the teachers has to teach. He further reveals that student taught using inquiry-based learning method performed better than those taught using the

traditional method after his study on the effectiveness of inquiry based learning method over traditional instruction. Vega (2015) stated that inquiry based approach in learning allows both low and high achieving students to make academic gains as it prepares them for reflective thinking and personal skills. Based on these, there seem to be a gap in knowledge; and the present study intends to ascertain if inquiry based learning applied in social studies class could enhance students' performance and retention of concepts.

Purpose of the Study

The purpose of this study is to ascertain the effect of inquiry-based learning strategy on the academic performance of upper basic II students of social studies. Specifically, this study seeks to;

1. Ascertain if inquiry based learning strategy would improve the academic performance of upper basic II students in social studies.
2. Determine the extent to which inquiry based learning strategy would improve students retention of concepts in social studies.

Methodology

This work adopts quasi-experimental pre-test, post-test, control group research design. The population for this study comprises all upper basic education students of Social Studies in Kosofe Education Zone in Lagos state, with the total of 10, 952 students. The sample of study consists of 60 upper basic education class II students of social studies from 2 schools in Kosofe education Zone 1, drawn through simple random sampling technique by balloting. Allocation of schools to experimental group school and control group school was by paper-ballot. The social studies Achievement Test (SAT) designed by the researcher serves as the instrument for the study. The instrument which consists of 50 multiple choice items structured from the approved scheme of work for JS II social studies syllabus by the Lagos State Ministry of education, was used for pre-test, post-test and retention test on sampled students. Validation of the instrument was ascertained through face, content, and construct validity by three experts.

Reliability of the instrument was obtained through test-retest method using Pearson product moment correlation and a reliability index of 0.73 was established. The test instrument was administered on 40 students from two schools not used for the study. Thereafter, the test was administrated again on the same students in their class after two weeks to ascertain their reliability. Their responses were correlated and analyzed to obtain the correlation coefficient of 0.73 for the estimation of internal consistency, Cronbach Alpha was applied on the test out-come. The reliability coefficient of 0.71 was obtained which is good enough to measure between control and experimental groups when large samples are involved (Nworgu, 2015).

Procedure

Students in the experimental group were arranged into smaller groups of 5 learners in each, after a pre-test was administered to them. They were directed by their teacher to discover

and construct knowledge by themselves on specified topics with materials provided for them after a little introduction. Specific objectives were clearly stated for them and a period of general discussion was also utilized. The control group were taught by their teacher same topics through conventional lecture method after their pre-test. This went on for a period of five weeks and the post-test was administered for both groups. Both tests were marked, scored and collated by the researcher. Test results were analyzed using mean and standard deviation statistics. The results are presented below.

Research question 1

Would inquiry-based learning strategy help to improve the academic performance of upper basic education class II students in social studies?

Table 1: Descriptive statistics of mean, standard deviation and mean gain of inquiry-based learning strategy on academic achievement in social studies.

Treatment Group	N	Mean Pretest	SD	Mean Post-test	SD	Mean % Gain	Effect size
Inquiry	30	42.50	11.20	58.50	10.67	37.65%	0.35
Lecture	30	42.73	11.30	53.17	10.30	24.43%	0

It can be seen from table 1 that the pretest mean of inquiry based learning strategy group was lower ($X=42.50$, $SD = 11.20$) than that of pretest mean ($X = 42.73$, $SD = 11.30$) of the control group. The table further shows that the posttest of inquiry based learning strategy group is higher than that of ($x = 58.50$, $SD = 10.67$) of lecture method group posttest ($X= 53.17$, $SD= 10.30$). This translates to a mean gain of 37.65%, whereas the mean gain of the lecture method group is 24.43%. The effect size which was measured by partial eta squared gave a value of 0.35 which implies that there is a 35.0% association between the treatment variables of inquiry based and lecture method group with academic performance in social studies. The interpretation of effect size for groups by Cohen (1992) shows that when an effect size for f-ratio involving two or more groups is less than 0.25 and 0.34, it is considered moderate and when it is 0.35 and above, it is considered great.

Thus, this research question can be answered by saying that inquiry based learning strategy can be used to improve academic performance in social studies to a great extent.

Research Question 2

To what extent does inquiry-based learning strategy improve students' retention of concepts in social studies.

Table 2: Descriptive statistic of mean, standard deviation and mean gain of inquiry based learning strategy and lecture method on concept retention in social studies.

Treatment	N	Posttest	SD	Delayed posttest	SD	Mean % loss	Retention
Inquiry	30	58.50	11.46	54.67	14.97	6.55	93.45

Lecture	30	53.17	11.30	43.83	13.04	17.57	82.43
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Table 2 shows that the delayed post-test score which is a measure of retention of concepts was higher for inquiry-based learning strategy ($X=54.67$, $SD =14.92$). The delayed posttest for the lecture method group which served as the control was low ($X=43.83$, $SD = 13.04$). The percentage mean loss of concepts as measured by delayed posttest after a period of two week was low for inquiry based learning as it indicates a loss of 6.55% signifying that 93.45% of the concepts were retained during the period. The lecture method group had a high mean loss of 17.57%

Discussion

The findings of this study from research question I show that inquiry based learning strategy improved academic performance of students in social studies to a great extent. This is in line with the findings of Witt & Ulmer (2010) who posit that inquiry based curriculum yielded significant gains in students' performance without sacrificing state curriculum standards. They conclude that their results demonstrated that an inquiry based strategy can benefit students both high and low achievers in the past. Also, Eysink, Gersen and Gijlers (2015) in agreement with the above explained that inquiry-based curriculum in the middle school classroom had impact on students' academic performance when compared with traditional lecture method as it's more effective in increasing student academic performance within a unit of instruction. Moreover, Abdi (2014) discovered after his research work that an inquiry based curriculum can increase students' performance and narrow the gap between high and low –achieving students. Berhan and Sheferaw (2022) further submit that inquiry based techniques did not only raise students' performance scores overall, but also made score differences between male and female students less evident in the classes; and the student were reported of being more interested in the subject they studied.

The findings of the study from research question 2 show that the percentage mean loss of concept after two weeks was very low, (6.55%) for inquiry based strategy group as shown by the delayed posttest. This implies that students that learnt using inquiry based learning strategy retained greater percentage (93.45%) of the concepts learnt, showing that inquiry-based learning strategy can improve students' retention of concept in social studies to a very great extent. Agreeing with this, Twigg (2010) explained after his study that when learners are taught by indirect, experimental methods, they learned more and retain more than when they are taught by more direct instructional methods. They also observed that when students were asked about their impressions of the two instructional methods, over 80% considered the activities more facilitative of learning and more motivating and 96% reported that they enjoyed the inquiry approach more. This confirms Rosenthal's (2018) cited in Joseph, et al, (2022) submission that inquiry-based learning classes are of particular benefit to students because the hands on activities allow students to construct context, develop positive attitudes towards learning, and engage in authentic conversation with

peers, enabling them to retain and remember what they were part of. They also affirm that inquiry based learning method can benefit culturally social class diverse students and learners with special needs. In line with the above, Ferguson (2010) disclosed that inquiry based method increase students understandings and comprehensions in mathematics, encouraged students to look for partners without teachers directly giving them formal algorithms and rules improve teachers instructions by using effective guided questions.

Conclusion

Recalling that the purpose of the study was to ascertain the effect of inquiry based learning strategy on the academic performance of upper-basic II students in social studies in Lagos state and to determine the extent to which inquiry based learning strategy would improve students' retention of concepts in social studies. The result of the study shows that inquiry-based learning strategy has a positive effect of improving the academic performance of students thereby serving as a panacea for low academic performance in social studies. Also, inquiry based learning strategy improve students retention of concepts in social studies to a great extent. Based on this result, one can say that inquiry-based learning strategy can be a panacea for improving the academic performance of upper basic education students in social studies in Lagos State.

Recommendations

It is disheartening to know that upper basic class II students' poor performance in social studies could be attributed to the use of inappropriate instructional strategy adopted by their teachers. To correct that, the following recommendations are presented thus;

1. Seminars should be organized for social studies teachers on negative effects of inappropriate instructional strategies on students.
2. The government should organize workshop for social studies teachers on how to adopt inquiry-based learning strategies in teaching social studies at all levels.
3. The government should also legislate that only learner centre strategies should be applied in the teaching of social studies as a subject.
4. More research work should be conducted to discover more students or learner friendly teaching and learning strategies for social studies education in our schools.
5. The government should set up a monitoring theme to ensure compliance for the above listed legislation and recommendations.

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