

Improving Academic Achievement of Civic Education Students via Using Guided Discovery Instructional Strategy

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Abstract

The study investigated the effect of the Guided Discovery instructional strategy on students' academic achievement in civic education in the Ijebu Ode Local Government Area of Ogun state, Nigeria. Three null hypotheses were tested in the study. The study adopted a quasi-experimental design. The population of the study comprised all civic education students in public senior secondary schools in Ijebu Ode, local government of Ogun state, Nigeria. Two public co-educational schools were randomly selected from the local government with 126 senior secondary two (SS II) from two intact classes. Data was collected using the Academic Achievement in Civic Education Test (AACET) with a 0.84 reliability index. The data collected was analyzed using both descriptive and inferential statistics. Analysis of Covariance (ANCOVA) was used to test the hypotheses at a 0.05 level of significance. The result shows a significant main effect of instructional strategy ($F_{(1, 121)} = 35.508, P < 0.05$) on students' academic achievement in Civic education. It also shows a significant main effect of gender on students' academic achievement in Civic Education ($F_{(1, 121)} = 4.688, P < 0.05$). While the result of the 2-way interaction effect shows no significant interaction effect of instructional strategy and gender on students' academic achievement in Civic education ($F_{(1, 121)} = .5665, P > 0.05$). It is recommended that more efforts should be geared toward advancing the strategies for use among students of the two gender groups. Further research on these strategies could be carried out in various other classes in other countries of the world.

Keywords: Guided Discovery, Gender Academic Achievement, Civic Education, Secondary School Students.

1. Introduction

Students' academic performance in different subjects has been a source of worry for stakeholders in education and civic education is not an exemption. It aims to help people learn how to become active, informed, and responsible citizens. The subject was introduced as part of the basic education program for the purpose of developing young Nigerian people into responsible citizens (Federal Ministry of Education, 2007). Enu and Odey (2017) maintained that the Civic Education Curriculum is the pathway to realizing the successful political process direly needed in the country. Civic education is expected to inculcate the spirit of nationalism and desirable habits, values, and attitudes in students (Sheu & Eleana, 2020) and also to enhance the attainment of the objectives of education (Azebamwan, 2010). It is a core curriculum for all levels of the contemporary Universal Basic Education (UBE) program including the senior secondary education level (Akpan & Ukpong, 2011). Ab initio, the subject was part of the Social Studies Curriculum before its content separation and was designed to form the core curriculum for implementation in the Universal Basic Education scheme.

According to Odey *et al.* (2021), students' academic performance in Civic related subjects has left more to be desired. Consequently, reports concerning civic social attitudes, civic self-concept and civic competences appear to imply that they may not have been appropriately exposed to the learning experiences offered by the subject (Ali *et al.*, 2015). Poor achievement in Civic Education can be attributed to many factors such as: lack of instructional materials, ill-utilization of time allocation, large class size and poor instructional delivery approaches (Chowdhury & Pati, 2011). According to Etukudo (2009), the fall in standard of achievement is incontrovertibly attributed to poor instructional delivery approach adopted by teachers in schools. West African

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Examination Council (WAEC) Chief Examiner's report (2014-2016) also states that the persistent poor achievement of students at secondary school certificate examinations leaves one in doubt about the effectiveness of instructional delivery approaches popularly used by teachers for teaching and learning. Thus, there appears to be a worrisome trend developing that may possibly negate the purpose of implementing the subject as a core curriculum in the country (Odey et al., 2021). Considering the importance of the subject in Nigeria in relation to the hostile social-political atmosphere of the nation, the eventuality of learners performing below average in the subject could possibly threaten insurmountable issues in the process of nation-building and sustenance of the nascent democratic dispensation in the country. The usefulness of the subject could possibly be why Kayode-Olawoyin (2017) premised that it is a subject that can bring about lasting solutions to numerous obvious social, economic, and political problems prevalent in present-day Nigerian society.

Unfortunately, most secondary schools in Nigeria are too convenient using traditional methods of teaching students. In this method, the teacher stands, receives all the attention from the students, and acts as the sole custodian of knowledge before the students while students listen, take notes, and remain passive throughout the teaching and learning process. This is a teacher-centered approach where the teacher dominates the class and students accept what the teacher says without questioning or contributing to the lecture (Olarinoye, 2001; Offiah & Achufusi, 2010).

However, every teacher has unlimited methods of instruction to pick from relating to the concept to be taught at a particular time. But frequent use of conventional methods of teaching, which are predominantly teacher-centered, reduces students' active participation in the classroom. Uwameiyi and Ogunbemeru (2005) claimed that it is a straightforward way of teaching and its efficiency is always reduced due to the fact that most students lose their focus while receiving the lesson and their mind wanders on other issues outside what the teacher is teaching in the class. It is pertinent, therefore, to integrate practical activities that are capable of promoting students' participation and learning. In this regard, the Guided Discovery strategy is an action-based strategy that can be adopted to improve students' academic achievement in civic education. The strategy belongs to a group of cooperative learning. Guided discovery is based on the constructivist views of learning. It is a learning approach where the learners take an active part in the learning process in which they have a maximum measure of freedom and self-determination. In this strategy, the teacher guides the students in their learning tasks by asking them thought-provoking questions that would assist them in generating their own correct ideas of the subject matter. The students would be made to be active participants in the teaching-learning process individually. It helps students create a good learning atmosphere, and take part actively in the classroom activity in order to increase students' learning. The Guided Discovery method engages learners in first-hand real-world learning. Dajal, Mohammed, and Adamu (2019) defined it as an approach in which students are guided by the teacher to find facts by themselves. Uwameiyi and Ogunbemeru (2005) furthered that the Guided Discovery method encourages learners to explore the content through the use of concrete experience. Guided Discovery Method is a powerful instructional approach that guides and motivates learners to explore information and concepts in order to construct new ideas, identify new relationships and create new models of thinking and behaviour (Adams & Freeman, 2016). O'Neil and Pegrum (2018), Fatokun and Yallams (2007) also describe discovery method as resource-based learning which is an innovation that reverses the usual role of the teacher from that in which he is the main authority and source of all knowledge to that in which he acts simply as a guide to the students to enable them to make use of other source of information. The strategy reduces the extent to which teacher is the focal point but rather the students and use teacher as a facilitator. The method of instruction has been shown to bear beneficial boost on students' achievement. The pedagogical underpinning is that if the students discover the knowledge, they will, in the process, have created and added to their own scaffolded understanding. They will have formulated and evaluated hypotheses, rejected those that do not seem to explain observations, confronted misconceptions, encountered surprises and finally come to an understanding that comports with experiment. The role of teachers in the strategy is to provide initial information and materials

to work on. Another important element is for teachers to ask questions (Mayer, 2003; Rowe, 2004), giving guidance, encouragement, and feedback (Burden & Byrd, 2003; Fasko, 2000). Involvement of the group can also facilitate the learning process (Rowe, 2004).

1.2. Problem of the Study

Students' underachievement in the subject can be associated with the method of instruction a teacher applies. For instance, the results of the West African Examination Council (WAEC) of 2018 revealed that only 38.68% of students who sat for it passed (Ukwayi, et al., 2019; Fapohunda, 2018). Thus, the teaching of the subject may not have been properly done because most of the teachers handling the subject perhaps may have been using the conventional method which is teacher-centered and not student action-based strategy like guided discovery. In essence, the problem of this study was to investigate the effect of guided discovery on students' academic achievement in civic education in public senior secondary school, Ijebu Ode Local Government area of Ogun state, Nigeria.

1.3 Research Hypotheses

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

Ho1. There is no significant effect of instructional strategy on students' Academic Achievement in Civic education in secondary school;

Ho2. There is no significant effect of gender on students' academic achievement in Civic education in secondary school;

Ho3. There is no significant interaction effect of instructional strategy and gender on students' academic achievement in Civic Education in secondary school.

2. Literature Review

Some of the advantages of this learning strategy are encouraging the learner to manipulate the environment and produce new ideas, stimulating curiosity and motivating students to find the solution, inducing students to analyze and manipulate information compared to receiving information and students acquire investigative and reflective skills that can be generalized and applied in other contexts (Westwood, 2008). Studies from the literature suggest that a guided discovery strategy could have a positive impact on students' learning outcomes (Aswardi, 2017).

Adeniran *et al.*, (2016) studied the effect of the WebQuest interactive package on learners' achievement in Civic Education in Nigeria. The interactive package is an internet discovery-oriented activity designed in 1995 for use to enhance learners' explorative learning environment. Using a quasi-experimental design, the interactive package was found to have a significant effect on learners' academic achievement in civic education. The effect of the guided discovery instructional method on secondary school chemistry students' achievement in Nigeria was ascertained by Akani (2017). A quasi-experimental design was employed while ANCOVA was used for data analysis. The Guided Discovery instructional method was found to be significantly more effective than the conventional lecture method which was used for the control group.

Bamidele and Ariyo (2017) compared the effects of guided discovery and demonstration teaching techniques on students' performance in Chemistry in senior secondary schools in Ile-Ife, Nigeria. The result of the analysis showed that students exposed to guided discovery had better retention ability and also outperformed those exposed to the other methods. Those taught with demonstration came up next in each of retention ability and performance while those exposed to expository came up last. Also, studies have reported that gender influenced students' academic achievement. Hence there could be gender differences in students' achievement when instructional strategy is used. More so, Omiko (2017) and Osokoya (2015) had opined those instructional methods used in the classroom may influence gender and students' achievement. Omiko (2017) is of the view that

male students achieve better than their female counterparts but Ademiran (2014) maintained that female students achieve better. Researchers like Nnorom, 2015; Nwafor and Oka, (2016) however are of the position that male and female students have similar performance. This conflicting report in the existing literature on the effect of gender on students' academic achievement requires further investigation.

Bamiro (2015) investigated the effects of guided discovery, think-pair-share, and lecture on senior secondary school students' achievement in chemistry. A pretest, posttest, control group quasi-experimental design with a $3 \times 3 \times 2$ factorial matrix was adopted for the study. Two hundred forty-two Senior Secondary 1 students in intact classes from six secondary schools in Ijebu Ode and Odogbolu Local Government Areas of Ogun State were randomly assigned to the treatment and control groups. Three instruments were developed and used to collect data from students during the 8-week treatment program. The data collected were subjected to analysis of covariance and multiple classification analysis. Scheffé test was further used as a post hoc measure. Where significant interactions were observed, they were represented with graphical illustrations. It was found that students taught with guided discovery and think-pair-share strategies obtained significantly higher posttest mean scores than those in the lecture strategy, $F(4, 223) = 51.66, p < .05$. The use of guided discovery and think-pair-share strategies show great potential for improving achievement in chemistry and science learning generally.

3. Methodology

3.1. Methods

The study adopted a quasi-experimental design with a pre-test treatment and post-test control group method. The study used 2×2 factorial matrix. The design was chosen for the study because it assures internal validity of results through the use of covariates (pre-test) and researchers' selection bias since there was no randomization of the subjects into groups.

Table 1. Research Design

Pretest	Treatment	Post-test
O1	X	O2

In the table above, O1 = the pretest in the experimental group and control group, X = refers to treatment (Guided discovery) and O2 = the post-test in the experimental and control group.

3.2 Population

The population of the study comprised all public Senior Secondary School Students (SS2) offering Civic education as a subject in Ijebu Ode Local Government Area of Ogun state, Nigeria.

3.3 Sample for the Study

The sample consisted of 126 senior secondary two (SS II) students who offer Civic Education using intact class. Two coeducational schools were randomly selected from the local government. The two selected local governments are far from each other to avoid interaction but with similar characteristics. The two selected schools were randomly assigned into experimental (guided discovery) and control groups.

3.4. Procedure

Academic Achievement in Civic Education Test (AACET) developed by the researcher was used for data collection. The AACET has a bio-data section that contains the name and gender of the participants. The test items are made up of 40 items of multiple choice questions with four options (letters A to D) comprising of one key and three distracters. To ensure that the test is valid, test blueprint was constructed while item analysis was carried out. Test items considered too difficult or too simple were drop

while ineffective distracters were modified. The test reliability was conducted using a test-retest method which obtained a 0.84 coefficient. An instructional guide was prepared for the conduct of the experiment using lesson plans for teaching the experimental group (Guided discovery) while the control group was taught using the conventional method of lesson plan. AACET was used for the pretest and post-test, however, the AACET was reshuffled to avoid test-wise-ness. The data collected was analyzed using both descriptive and inferential statistics. Analysis of Covariance (ANCOVA) was used to test the hypotheses at a 0.05 level of significance.

3.5. Results and Analysis

Table 2. Description of respondents according to group and gender

Descriptive Statistics					
Gender	Group	Mean	Std. Deviation	N	
Male	Experimental	47.92	8.418	37	
	Control	51.80	1.014	15	
	Total	49.04	7.311	52	
Female	Experimental	41.88	10.481	17	
	Control	52.30	.963	57	
	Total	49.91	6.652	74	
Total	Experimental	46.02	9.450	54	
	Control	52.19	.988	72	
	Total	49.55	6.916	126	

The data in Table 2 shows that there are 52 male participants, out of which 37 are from the experimental group and 15 from the control group. It further shows that there are 74 females out of which 17 are from the experimental group and 57 from the control group. In all, there are 126 participants.

Ho1. There is no significant effect of instructional strategy on students' Academic Achievement in Civic education in public secondary schools.

Table 3. Results of ANCOVA on significant difference in the achievement mean scores of students

Tests of Between-Subjects Effects						
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	
Corrected Model	2164.564 ^a	4	541.141	17.165	.000	
Intercept	9645.892	1	9645.892	305.966	.000	
Pretest	560.201	1	560.201	17.769	.000	
Gender	147.800	1	147.800	4.688	.032	
Instructional Strategy	1119.433	1	1119.433	35.508	.000	
Instructional Strategy * gender	178.589	1	178.589	5.665	.519	
Error	3814.650	121	31.526			
Total	315305.000	126				
Corrected Total	5979.214	125				

a. R Squared = .362 (Adjusted R Squared = .341)

The results in Table 3 shows the outcome of the analysis to test the effect of instructional strategy (i. e. treatment) on students' academic achievement in Civic education. The result shows significant main effect of instructional strategy ($F_{(1, 121)} = 35.508, P < 0.05$), thus implying that the difference in the students' post-test mean achievement scores in Civic Education after exposure to the two levels of instructional strategy is statistically significant at the .05 level of significance. Hence, the null hypothesis H_01 is rejected.

The magnitudes of the post-test mean achievement scores of students across the levels of instructional strategy and gender is presented in the Multiple Classification Analysis (MCA) that follows.

Table 4. Multiple classification analysis of students' academic achievement scores according to instructional strategy and gender

Grand Mean = 24.85					
Variable + Category	N	Unadjusted Deviation	Eta	Adjusted for Independent + Covariates	Beta
Instructional Strategy					
1. Guided discovery	54	.06106	.202	.7122	.321
2. Conventional Method	72	1.0810		-.01174	
Gender					
1. Male	52	1.61205		1.11563	
2. Female	74	-2.43710	.386	-1.82839	.041
Multiple R Squared					.362
Multiple R					.341

The results in Table 4 show the magnitudes of the post-test mean achievement scores of students exposed to the two levels of instructional strategy. The MCA shows that with a grand mean of 24.85, the students exposed to the Guided Discovery strategy recorded a higher adjusted post-test mean achievement score of 25.562 (i. e. $24.85 + .7122$) if the order of magnitude is considered while students exposed to the conventional method recorded lower post-test mean achievement score of 24.861 (i. e. $24.85 - .01174$). This outcome thus shows that the post-test mean achievement scores of the students exposed to the Guided Discovery strategy come to perform better. The results in Table 4 further show instructional strategy accounted for 32% of the variance in the students' achievement scores while the instructional strategy and moderating variables jointly accounted for 36.2% of the variance in the students' academic achievement in Civic Education.

Ho2. There is no significant effect of gender on students' academic achievement in Civic education in secondary school.

The result of the analysis of covariance in Table 3 shows a significant main effect of gender on students' academic achievement in Civic Education ($F_{(1, 121)} = 4.688, P < 0.05$). This result implies that there is a significant difference in the post-test mean achievement scores of male and female students after exposure to the two levels of instructional strategy used in the study. Hence, the null hypothesis **Ho2 (i)** is rejected.

The result of the multiple classification analysis (MCA) on gender in Table 4 shows that with a grand mean of 24.85, male students showed higher adjusted post-test mean achievement score of 25.965 (i.e. $24.85 + 1.11563$) in order of magnitude compared with female students 23.021 (i.e. $.008 + -1.82839$). This outcome thus shows that when order of magnitude of the post-test mean achievement scores of students in Civic Education according to gender is considered, male students recorded higher score than female. The result in Table 4 further shows that gender, as a moderator variable, accounted for 4.1% of the variance in the students' achievement in Civic Education.

Ho3. There is no significant interaction effect of instructional strategy and gender on students' academic achievement in Civic Education in secondary school.

The result of the 2-way interaction effect in Table 3 shows no significant interaction effect of instructional strategy and gender on students' academic achievement in Civic education ($F_{(1, 121)} = .5665, P > 0.05$). This outcome implies that student post-test mean

achievement scores in Civic education across the two levels of instructional strategy used in the study did not vary across the two levels of gender (male and female). Hence, the null hypothesis H_03 (i) is retained.

3.6. Discussion

The study findings showed that Guided discovery has a significant effect on students' academic achievement in Civic education. This implies that it is an effective strategy for improving students' academic achievement in Civic Education. The obtained data is an indication that students taught with Guided discovery performed better than those in the control group. This implies that the Guided Discovery instructional strategy is a good instructional method relative to the lecture method as discovered in this study. One of the probable reasons for this significant outcome may be attributed to the fact that the strategy engages learners in first-hand real-world learning. Uwameiyi and Ogunbemeru (2005) also confirmed that the strategy encourages learners to explore the content through the use of concrete experience. The findings of this study align with the report of Bamidele and Ariyo (2017) who compared the effects of guided discovery and demonstration teaching techniques on students' performance in Chemistry and found that students exposed to guided discovery outperformed those exposed to the conventional method. The results also show that gender has a significant effect on students' academic achievement in Civic Education. The result indicated that male students were more favored in the Guided Discovery strategy than females. Thus, gender has an effect on learners' performance in Civic education. Thus, there is a need to bridge the gap between male and female students' achievement in Civic education. Negates the report of findings of Ogunkola (2000) and Erinoso (2005), which showed that there were no significant effects of gender on students' achievement in the various subjects. It refutes the report of Abidoye (2015) which shows that there was no significant difference between the academic achievement of male and female students, which is consistent with the report of researchers like Ibrahim (2021) and Omiko (2017) who found that male students achieve better than their female counterparts while Ademiran (2014) is of the view that female students achieve better. The interaction between instructional strategy and gender is not significant. Thus, the student post-test mean achievement scores in Civic education across the two levels of instructional strategy used in the study did not vary across the two levels of gender (male and female). This result agrees with the findings of Dajal *et al.* (2020) who revealed that there was no significant difference between male and female students' achievement taught using the Guided Discovery method. However, the finding disagrees with the findings of Salihu (2015) which showed that male students performed better than female counterparts when taught using the Guided Discovery method.

The study investigated the effect of guided discovery instructional strategy on students' academic achievement in public secondary schools in the Ijebu local government area of Ogun state, Nigeria. From the findings of the study, it is evident that the use of guided discovery is capable of promoting students' learning. Based on the findings of this study, it is hereby recommended that civic education teachers adopt of guided discovery instructional strategy to enhance students' academic achievement in the subject. According to the finding relating to treatment and gender, in which case there was no interaction effect, it is recommended that more efforts should be geared toward advancing the strategies for use among students of the two gender groups. Further research on these strategies could be carried out in various other classes in other countries of the world.

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