PROBLEM BASED LEARNING AND LEARNING OUTCOMES OF OGUN STATE JUNIOR SECONDARY SCHOOL STUDENTS IN CIVIC EDUCATION
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Abstract

This study investigated the relative effectiveness of problem based learning on the learning outcome of junior secondary school Civic Education students in Ogun State. The study adopted pre-test, post-test, control quasi-experimental design. The sample consisted of 120 participants drawn from three co-educational schools across the three senatorial zones of Ogun State. Multistage sampling procedure was used in stratifying the schools along the senatorial zones. One school was selected from each senatorial zone. From each school that met the inclusion criteria, simple random sampling was used in selecting a JSS 2 class from which average of 60 participants were randomly selected. Two null hypothesis was tested at .05 level of significance using Problem based learning training package (PBLTP) and Civic education achievement test (CEAT) (r= 0.81), the administration lasted three weeks consecutively. Data were analyzed using ANCOVA and the Sidak post hoc test to examine the effectiveness of problem based learning on the learning outcome of junior secondary school students in civic education. The result reveals that

there was significant main effect of treatment on students' knowledge gained towards civic education concepts. Also, there was significant interaction effect of treatment and locus of control on the students' achievement scores in civic education concepts. It was recommended that the use of problem based learning should be encouraged in teaching and learning of civic education especially where attitude change is required. And that regular seminars and workshop should be given by experts on the use of problem based learning on civic education teachers at all levels.

Key words: Problem based learning, learning outcome, Civic Education., Locus of control.

Introduction

All societies of the world have always have a long interest in the way in which their young ones are prepared for citizenship and adult life and in how they learn to take part in civic life (Branson & Quigley, 1998). Today, however, that interest might better be described as a concern, in fact, as a growing concern, particularly in developing countries of the world. Civic education, therefore, has become a prime concern. There is no more important task than the development of an informed, effective, and responsible citizenry. Democracies are sustained by citizens who have the requisite knowledge, skills and dispositions. A free and open society cannot succeed where a reasoned commitment on the part of citizens to the fundamental values and principles of democracy is absent. It is imperative therefore, that educators, policy makers, and members of civil society make the case and ask for support of civic education from all segments of society and from the widest range of institutions and governments (Branson & Quiley, 1998). Students who experience high quality of civic learning are more tolerant of others, more willing to listen to differing points of view and take greater responsibility for their actions and to improve their community (Torney-Purta, 2009).

One educational response to this need is the introduction of civic education. NERDC (2007,) has stated in the introduction to

the new civic curriculum for Senior Secondary School that civic education came into existence in Nigeria as a result of desire to bring the reality of everyday societal living to the students at their age of critical thinking and reasoning about the events happening around them. This is with a view of helping them acquire knowledge, attitude, values and basic skills that will help them to become responsible and disciplined members of the societies. In order to achieve this goal, the students need appropriate information which they can gather through participation for purpose of applying what they have learned to their daily experiences. It further states the objectives of civic education as thus; to promote the understanding of inter-relationship between man/woman, the government and the society; highlight the structure of government, its functions and the responsibilities of government to the people and vice-versa; enhance the teaching and learning of emerging issues; and inculcate in students their duties and obligations to the society.

The justification for civic education can further be seen in the importance and benefits the nation seems to achieve through civic education as it teaches about the rights, duties and obligations of every member of a political system. Civic education is out to develop in the leaders those values and skills that will make responsible citizens. Developing in citizens the spirit of effective citizenship and loyalty to the nation is the major aim of civic education. Civic education makes the citizens of new democracies to gain skills, values and behaviour that are thought to be necessary for a stable and effective democracy. It introduces citizens to the basic rules and institutional features of democratic political system and to provide them with knowledge about democratic rights and practice (Mofoluwawo, Jarimi & Oyelade, 2012).

The introduction of the civic education is designed to refocus, re-invigorate and reposition our great country to further realize her full potentials as envisioned by our founding fathers. Specifically, civic education seeks to expose our pupils and students to the tenet and rudiments of citizenship education. It is envisioned that the teaching of the subject in our schools will lay a strong foundation for effective citizenship education and public participation in governance and other ethical issues that affect our lives (NERDC, 2007).

Citizenship education helps to produce motivated and responsible learners, who relate positively to each other, to staff and to the surrounding community; helps to create an active and responsible citizenry, willing to participate in the life of the nation and the wider world and play its part in the democratic process; help people to learn and become active, informed and responsible citizens, prepare citizens for life of democracy (Jekayinfa, Mofoluwawo & Oladiran, 2011).

Losito and Mintrop (2001) stress that civic related courses should be participative, interactive, related to life in school and community, conducted in a non-authoritarian environment, cognizant of diversity and co-constructed with parents and the community. Galvis (2008) emphasised on the need to adopt a method that will help to foster the three dimensions of civics "knowledge, attitudes and skills". The construction of meaningful knowledge requires tools that actually shape student's mind and methods to pursue that goal. Galvis experimented with the use of system dynamics in teaching of civic to 120 students from a Colombian high school and students exposed to these treatments were found to have demonstrated high level of improvement in their academic performance.

However, the peculiar requirement of civic education calls for innovative methods in view of our emerging information society (Kairoh & Houston, 2001). They call for approaches that provide learners with options and critical thinking for actions is also likely to be more successful in promoting civic disposition among the students. In other word, the teaching and learning of civic education demand some skills on the parts of the students and the teachers, this also prompted this study.

One of the innovative strategies is problem based learning, Problem based learning is an approach for structuring curriculum content, facing students with problems from practice, which provides a stimulus for self-directed learning of students following defined steps. Problem-based learning (PBL) is a method that challenges students for working cooperatively. It prepares students to think critically and analytically, and to find and use appropriate learning resources. Problem-based learning means cooperative learning

starting off with a problem. The problem is in the centre of the focus should foster a process among the students of assessing and discussing the issues of the problem. The goal is to activate prior knowledge of the students and to help them to start a learning process by reconstructing their knowledge and making new sense of it.

The conventional method as used in Nigeria is a replica of direct instruction. Kozloff, LaNunziata, Cowardin, and Bessellieu, (2000), asserts that direct instruction was propounded by Siegfried Engleman, Carl Bereiter and Wes Becker who all worked with disadvantaged children (Becker & Carnine, 1981; Bereiter & Engelmann, 1966). Direct instruction has been and developed for over four decades now for the teaching elementary through secondary language, reading, mathematics, history, higher-order thinking (reasoning), writing, science, social studies and legal concepts (Adams & Englemann, 1996; Kameenui & Carnine, 1998). Over the past 30 years, it has been developed for teaching elementary through secondary language, reading, mathematics, higher-order thinking (reasoning), writing, science, social studies, and legal concepts (Adams & Engelmann, 1996; Kameenui & Carnine, 1998). Direct instruction is not without its limitation, Markusic, (2012), stated that the structure of direct teaching can be rigid enough to hinder the creativity of the teacher. There is very little room to improvise because this method follows a step-by-step procedure. The procedure usually starts with an introduction, followed by the rationale for the instruction, then by the instruction itself. The procedure ends with a summary and then followed by an assessment. He further stressed that, direct teaching, if utilized by unprepared teachers, can be disastrous. For direct teaching or instruction to be effective, the teacher must have a mastery of the subject matter, must prepare a well-organized content, and must have excellent communication skills. Without these traits, a teacher could not effectively carry out direct teaching or direct instruction, nor could they develop higher order thinking skills in the students. Opponents of direct instruction believe methods of measuring student progress favour skills that are themselves emphasized by direct instruction and deemphasized by discovery education. In addition, they suggest

aptitude tests focus on students' ability to solve problems, while discovery education emphasizes critical information-seeking and active, fruitful participation in social discourse, goals that cannot be easily measured by traditional empirical methods (Tuovinen, & Sweller, 1999). Despite the limitation of direct instruction, this work is set out to determine if direct instruction would have much impact on the students or whether students would learn civic education better under vignette than direct instruction.

One critical element in sustainable learning is "locus of control". This term, as explained by Grantz(2006), refers to an individual's perception of the main causes of events in life. It is about who controls 'destiny'- oneself or external forces such as fate or other people. LOC is at the root of the type of attribution we make for our success and / or failure in school tasks. Indeed studies have shown that locus of control is related to academic achievement (Grantz 2006; NCREL,2006). Therefore, LOC was selected as a possible moderating variable in this study.

Rationale for the study

The rationale for this study was based on the challenges of responding to the problem posed by the need to teach civic education concepts as part of the new Junior Secondary School, Civic Education programme. Given that previous studies have been done little or nothing in this respect as indicated in the available literature, this study investigated the relative effects of problem based learning and conventional method on the learning outcome of Junior Secondary School Students in Ogun State. In addition, the interaction effects of locus of control was also investigated.

The theoretical foundation upon which this study is built can be found in experiential learning. This theory could support 'interactive modelling' for civic education in order to promote positive changes in the values orientation of the learners. Kolb, (1984), explain that "Learning is the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience". Zuber-Skerritt, (1992) stressed that experiential learning provides "a comprehensive theory which offers the foundation for an approach

to education and learning as a lifelong process and which is soundly based in intellectual traditions of philosophy and cognitive and social psychology" .Dewey popularized the concept of Experiential Education which focuses on problem solving and critical thinking rather than memorization and rote learning.

The relevance of experiential learning theory resides in the fact that it supported civic education pedagogy which is expected to be interactive, participatory and dialogical using such methods as case-based learning , scenario based learning, problem-cased based learning, brainstorming, cooperative learning projects, problem-solving frameworks alternative future exercises, and case studies of peace movements across the globe in order to foster critical thinking (Readon & Cabezudo, 2002).

Steps in implementing problem based learning in classroom

Problem based learning sessions are usually organized according to the Maastricht seven step procedure but may be modified. Generally, those seven steps are:

Step 1: (Clarifying terms). The teacher Identifies and clarifies unfamiliar terms presented in the scenario.

Step 2: (Defining the problem). The teacher define the problem or problems to be discussed

Step 3: (Brainstorming). Aspects on basis of prior knowledge are collected.

Step 4: (Learning objectives) Formulating learning objectives; group reaches consensus on the learning objectives; tutor ensures learning objectives are focused, achievable, comprehensive, and appropriate.

Step 5: (Searching for Information) Self-independent learning; during this phase students are go home and study.

Step 6. (Synthesis)Group shares results of private study. The tutor checks learning and assess the group. So, the final step is synthesizing and testing the newly acquired information.

Step 7: (Feedback). Students gives feedback on the case, the process and the tutor, to improve the learning process.

Objectives

The following questions are to be answered in this paper. They are:

1. Explore the relative effectiveness of problem based learning and conventional method in enhancing knowledge of civic education among junior secondary school civic education students.

2. Assess the moderating effects of locus of control on junior secondary school Civic Education students in Civic education when taught using problem based learning and conventional method.

Hypotheses

H_{01}: There is no significant difference in the mean post-test achievement scores of participants exposed to the different treatment conditions.

Ho_2 There is no significant difference in the mean post-test achievement scores of male internal and external locus of control exposed to civic education concepts under the different teaching strategies.

Method

The study adopted pre-test, post-test, control quasi-experimental design. The sample consisted of 120 participants drawn from three co-educational schools across the three senatorial zones of Ogun State. Multistage sampling procedure was used in stratifying the schools along the senatorial zones. One school was selected from each senatorial zone. From each school that met the inclusion criteria, simple random sampling was used in selecting a JSS 2 class from which average of 60 participants were randomly selected. Two null hypothesis was tested at 0.05 level of significance using Problem based learning training package (PBLTP) and Civic education achievement test (CEAT) (r= 0.81), the administration lasted three

weeks consecutively. Data were analyzed using ANCOVA and the Sidak post hoc test to examine the effectiveness of problem based learning on the learning outcome of junior secondary school students in civic education.

Table1:1   Comparison on Pre-test and post score of students by Treatment Groups

Treatment Group		Achievement		Attitude	
		Pre-test	Post-test	Pre-test	Post-test
Problem Based Learning	N	60	60	60	60
	Mean	11.66	14.83	51.17	54.60
	Maximum	2.55	3.92	5.47	6.08
	Minimum	7	5	34	35
	Std. Deviation	18	27	61	65
Conven-tional Method	N	60	60	60	60
	Mean	11.26	13.48	58.66	52.87
	Maximum	3.42	3.15	5.74	6.44
	Minimum	5	6	49	37
	Std. Deviation	22	20	70	69
Total	N	120	120	120	120
	Mean	11.63	14.52	53.57	53.85
	Maximum	2.94	3.69	6.49	5.75
	Minimum	5	5	34	35
	Std. Deviation	22	27	70	69

The result in Table 1.1 presents the mean post-test achievement scores of students in civic education concepts when taught using the different teaching strategies. The students exposed to problem based learning recorded highest mean score of 14.94 while the students exposed to the conventional method recorded post-test mean achievement score of 13,48. The table further shows that the highest post-test achievement test of 27 was recorded by a student exposed to problem based learning and at the same time recorded the least post achievement score of 5. The result thus suggest that

the problem based, with the highest mean post-test achievement score had the greatest effect on the students' achievement in civic education.

Table1.2: Comparison of Pre-test and Post-test achievement Scores by Locus of Control Groups

Treatment Group		Achievement		Attitude	
		Pre-test	Post-test	Pre-test	Post-test
Problem Based Learning	N	58	58	58	58
	Mean	11.19	14.00	52.67	54.05
	Maximum	2.78	3.78	7.24	5.86
	Minimum	5	5	34	35
	Std. Deviation	16	21	69	69
Conven- tional Method	N	62	62	62	62
	Mean	12.02	14.97	54.35	53.68
	Maximum	3.03	3.58	5.68	5.67
	Minimum	6	8	37	37
	Std. Deviation	22	27	70	64
Total	N	120	120	120	120
	Mean	11.63	14.52	53.57	53.85
	Maximum	2.94	3.69	6.46	5.75
	Minimum	5	5	34	35
	Std. Deviation	22	27	70	69

The result in table 1.2 presents the students' post-test mean achievement scores in civic education concepts according to locus of control pattern after exposure to the different teaching strategies. The external locus control students recorded highest post-test achievement score of 14.97 than the internal students who recorded a mean score of 14.00. The table further reveals that the higher mean post achievement score of 27 was recorded by an external student while the internal students recorded the lowest mean post-test achievement score of 5. This result thus reveals that the external

students recorded the better post-test achievement scores in civic education concepts.

The outcomes of the test of the 2 hypotheses in this study are presented below.

H_{O1}: There is no significant difference in the mean post-test achievement scores of participants exposed to the different treatment conditions.

Table 1.3: Summary of Analysis of Covariance of Students' Achievement according to Treatment and Locus of Control

Source of Variation	Sum of Squares	Df	Mean square	F	Sig. of F
Main Effects	904.94	1	904.94	71.08	.000
Covariates (pre-test)	53.71	1	53.71	4.22	.042
Treatment	42.95	2	21.48	1.69	.190
Locus of Control (LOC)	5.25	1	5.25	.412	.522
One way interaction					
Treatment x LOC	11.52	2	5.76	.452	.637
2 Ways Interaction					
Treatment x LOC	36.49	2	5.76	1.43	.24
Explained	256.836	8	21.40	1.681	.081
Residual	187.63	109	12.73		
Corrected Total	1644.467	121			

Denote Significant F at .05level R squared = .156 (Adjusted R Squared = .063)

The result of the table 1.3 presents the main effect of treatment (teaching strategies) on the students' achievement scores in civic education concepts. The analysis indicates that there is no significant main effects of treatment on the students' achievement scores ($F_{(2,109)}$ = 1.687, P > 0.05). The result implies that the post mean achievement scores of the students exposed to the civic education concepts through the different teaching strategies are not significant different, hence, the hypothesis (H_{O1}) that stated that there is no significant

difference in the mean post test achievement scores of participants exposed to the different treatment conditions is accepted.

Table 1.4 Multiple Classification Analysis of Students' Achievement Scores According to Treatment and Locus of Control

Variable + Category Teaching Strategy	N	Unadjusted Deviation	Eta	Adjusted for Independent + Covariates	Beta
Teaching Strategy 1. Problem based Learning 2. Conventional Method	60 60	-0.55 -0.81 -2.28	.06		.24
Locus of Control 1. Internal 2. External	60 60	-0.83 -1.18	.01		.13
Multiple R squared					.15
Multiple R					.39

Table 1.4 reveals that, with a grand mean of 14.54, the students under the problem based learning recorded the highest adjusted mean pot-test achievement score of 16.54, while the students in the conventional group recorded the least adjusted post-test mean achievement score of 14.89. This outcome shows that although not significantly different from other group, the students taught using problem based learning recorded the highest post-test mean achievement score in civic education. The table further reveals that while treatment alone accounted for 5.76 %$(0.024)^2$ of the variance in the students' achievement scores, the independent and moderator variables jointly accounted for 15.6% $(0.39)^2$ of the variance in the students' post-test achievement scores.

Ho_2 There is no significant difference in the mean post-test achievement scores of male internal and external locus of control exposed to civic education concepts under the different teaching strategies.

The result of the main effect of locus of control recorded in table 1.4 reveals no significant main effect of locus of control on the students' achievement scores in civic education concepts ($F_{(2,109)}$ = 0.412, P > 0.05). The result implies that the mean post-test achievement scores of internal and external students taught with the different teaching strategies are no significantly different. Therefore, the hypothesis two (Ho_2) that states that there is no significant difference in the mean post-test achievement scores of male internal and external locus of control exposed to civic education concepts under the different teaching strategies is accepted.

Conclusion

The results of this study shows that the Problem based learning produced significantly higher mean achievement score than conventional methods, indicating that the problem based learning is better in the teaching of Civic Education concepts than the Conventional Method. The study found that the effect of teaching strategies is not the same across the levels of locus of control as it concerns students' knowledge acquisition in civic education.

This study revealed that students in the experimental group, that is, problem based learning, has higher mean post-test scores than the students in the conventional method. The implication of this study is that there is no good or bad method of teaching but the effectiveness of a method depends largely on various variables involved in the teaching and learning processes.

Recommendations

Based on the results of this study, the following recommendations are made

(a)   The use of problem based learning should be encouraged in teaching and learning of civic education especially where attitude change is required.

(b)   Regular seminars and workshop should be given by experts on the use of problem based learning on civic education teachers at all levels

(c) Civic education students at all levels should be exposed to the rudiments of problem based learning.

(d) Conscious efforts should be made to promote the use of problem based learning within the teacher education programmes at the college, polytechnic and university levels for both the pre-service and in-service teacher candidate.

(e) The ministry of Education should mandate Nigeria Educational Research and Development Council (NERDC) to produce relevant textbooks, manuals and other instructional resources that will enhance the use of spatial learning strategies in school, colleges and universities in Nigeria.

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