Effects Of Conceptual Diagrams Techniques On the Achievement On Displaced Children In Civic Education In Borno And Yobe State Nigeria

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This study was conducted to examine the Effects of Conceptual Diagram Technique on Achievement of Displaced Children in Civic Education in junior secondary school. Quasi experimental research of equivalent pre-test and post-test, non The sample of schools is made up of 4 junior secondary schools, selected from 30 junior secondary schools that fall within study area. Sample size is 216 students to form four intact classes assigned for experimental and control groups. Criteria that guide choice of schools includes: Displaced students and Non-displaced students. The schools also comprise of male and female students. Randomized research was adopted. The population of the study was 4282 junior secondary school students offering Civic Education from 30 junior secondary schools in Borno state and Yobe state. Civic Education Achievement Test (SSPT) was used for the collection of data. The reliability of SSPT was established using test-retest. Mean and standard deviation were used to answer the two research questions, while hypotheses were tested with Analysis of Covariance (ANCOVA) at 0.05 level of significance. The research revealed Conceptual diagram improve students' Achievement in Civic Education while gender have no substantial impact on students' Achievement in Civic Education. The study also attempt to investigate how conceptual diagram technique can help internally displaced children adopt to a life in a new society and how the teachers need to employ teaching techniques that can help the students acquire good moral values to enable them create positive attitude toward learning. Based on the findings of this study, it is recommended that Civic Education teachers incorporate conceptual diagram technique in the teaching, to enable students interrelate concepts, and team work.

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Introduction

Teaching with diagrams helps to prepare students to acquire skills that can help in adapting to new opportunities and appreciate socio-cultural complexities and internal perspective in school and out of school. There is evidence that suggests large learning gains when instruction includes different strategies and techniques (Oti, Egan, Salami &Uzochukwu, 2020). This indicates that teaching techniques alone do not always lead to improvement in learning outcome. Thus, they create ways to expose students to more effective way of learning such as the conceptual diagrams technique. Innovation into teaching techniques for the purpose of internally displaced children is needed in the area of the study (Borno and Yobe state) with the aim of improving students' achievement in new school environment. Schunk, A. and Shaibu (2017) explained forther that there is need for students' active participation in the learning process making students active regulators in pursuit of learning in a deliberate manner is among the objectives of conceptual diagram technique. Conceptual diagram techniques

allow students to ignore rote learning, support reflective thinking, and ideas are systematically arranged. The technique require participation among students therefore increases team work and meaningful learning. The impact of using this technique is the development of creative thinking in students, team work and cooperation in learning which can reorient the displaced students in their new environment.

Statement of Problem

The achievement of students in Civic Education has not been consistently good and encouraging (Erinosho, 2019). The low achievement is reflected by Nigerian government educational reforms, educators, parents and students are concern about the causes of low achievement. Mezieobi (2014) responded by emphasizing the need to use learner – dominated teaching techniques in teaching concepts. Students' low achievements in Civic Education in the Basic Education Examination for many years constitute great worries to educators in the States under study. A comprehensive look at students' achievement in Civic Eduction is discouraging. A study conducted by Universal Basic Education 2017 shows that achievement in Civic Education among students at junior secondary schools in Borno State and Yobe state is low, students' results from 2014 to 2019 indicates that the pass rate had for most part, fallen below 50 %. The abysmal achievement of students in Civic Education is worrisome, indicating that the quest to achieve national educational objectives and Civic Education objective through effective instruction may be difficult, despite emphases on the best instructional method, strategies and techniques.

Conceptual diagrams technique seems not to be given the suitable weight of importance in actual teaching process in junior secondary school Erinosho (2019). In 2014, out of population of 23,113 that sat for junior secondary school examination 47% failed while 53% passed. In 2015, 12,379 students sat for the examination with 44% failed and 56% passed. Also, in 2016, 24,140. In 2017, 37% failed while 63% passed. 2018 out of population of 12,832, 41% failed and 59% passed, and in 2019 46% failed while 54% passed out of population of 13,613 and 2019 64% failed while 34% passed. Analysis shows that the level of students' academic achievement in Social Studies fluctuated within 2014-2019 in Borno State.

Nigeria Government and researchers are making frantic efforts to improve students' achievement through paradigm shift from the teacher-centered technique to the student-centered pedagogical approaches in teaching. Workshops have been organized by Borno State and Yobe state government in collaboration with National Teachers' Institute, Kaduna on how to enhance teachers' pedagogical skils of teaching yet, students' achievement is low. If this is allowed to continue it will affect students who wish to continue with studies in the area of social science and humanities. Hence the need to employ students' centered method such as conceptual diagram techniques, and the need for the present study on Effects of Conceptual Diagram Technique on Attitude and Achievement in Junior Secondary School Civic Education in Borno State and Yobe state

Objectives of the Study

The aim of this study is to investigate the effects of conceptual diagrams technique on achievement of internally displaced children in Borno and Yobe states, Nigeria. Specifically, the objectives of the study are to

i. find out the pre-test and post-test achievement mean scores of internally

displaced children in Borno State and Yobe state.

ii. determine the post-test achievement mean scores of internally displaced children in the experimental group based on gender in the two states

Hypotheses

The following hypotheses will be tested at 0.05 level of significance.

a. There is no significant difference in the posttest achievement mean scores of students in Civic Education in the experimental and control groups in Borno and Yobe state.
b. There is no significant difference between the posttest achievement mean scores of internally displaced children in Civic Education in the experimental and control group in Borno state and Yobe state.
c. There is no significant difference between the posttest achievement mean score of students in Civic Educations in the experimental group based on gender.
d. There is no significant difference between the posttest achievement mean scores of male and female students in Civic Education in the experimental group in Borno state and Yobe state.

Methodology

The researcher adopt descriptive and inferential statistics in analyzing the data for the study. The descriptive statistics mean and standard deviation analyse data for answering the research questions. While ANCOVA analyse data for testing the hypotheses formulated for the study. All hypotheses were tested at 0.05 level of significance using Statistical Package of the Social Sciences (SPSS) version 22.2 the t–test for independent samples determine any significant difference in mean score of two different groups base on the variables under investigation.

Research Design

The research adopt the quasi-experimental research design. The design use non-equivalent pretest/posttest control group design which involves two groups, the experimental and control groups. The design is selected because it allows for separate determination of main effect and interaction effects of independent and moderating variables on students' attitude and achievement. The quasi-experimental design allows use of intact classes because randomization will not be possible. Moreover, true experimental design may not be acceptable to school administrators because lessons will be disrupted.

Expanding on school-friendly experiment, Ali (2013) suggests that in situation like this, quasi-experimental design should be used because it is school-friendly design that does not disrupt major classroom structure, timetable or academic events. The design use non- randomized groups because it can use the groups already organized as intact classes. The design is diagrammed thus:

Group	Pretest	Tretment	Posttest
Experimental	01	X	02
Control	03		04

Figure – Illustration of Non-Randomized Pretest – Posttes Quasi Experimental Design

o1 pretest for the experimental group

o2 posttest of experimental group

o3 pretest for the control group

o4 posttest for the control group

X stands for treatment (conceptual diagram technique)

_ _ _ Dotted lines stand for non-randomization of subjects

The design will have the experimental group as group 1 and control group as 2. The experimental and the control groups will be given the pre-test and the experimental group will be exposed to treatment while no treatment for control group and both groups will be given posttest.

Population

The population of this study will consist of all the 4282 junior secondary school students offering Civic Education from 30 junior secondary schools in Borno state and Yobe state. Data source is obtained from Borno State and Yobe Ministry of Education, 2021. The population is made up of 2123 male and 2159 female. In terms of location, it consist of 1826 displace and non-displaced students from 2456. The distribution of population is presented in Table 1.

Table 1
Population of JSSII Civic Education Students based on gender and school location

S/N	School Type	Number of Schools	Male	Female	Total
1	Displaced students	8	907	921	1828
2	Non-displaced	24	1216	1238	2456
	Total	**30**	**2123**	**2159**	**4282**

Source: Borno state and yobe state Ministry of Education, 2021.

Sample

The sample of schools is made up of 4 junior secondary schools, selected from 30 junior secondary schools that fall within study area. Sample size is 216 students to form four intact classes assigned for experimental and control groups. Criteria that guide choice of schools includes: Displaced students and Non-displaced students. The schools also comprise of male and female students.

Sampling technique

The study adapt disproportionate stratified and simple random sampling technique because it chances of selection and representation of sampled schools. A list of all the junior secondary schools in the study area was compiled. The researcher then assign numbers to each school and select four schools from selected schools under study. The selected schools by the researcher was assigned into the experimental and control group using balloting. Out of the four schools selected for study, two of these schools use conceptual diagram technieque while the other two will apply the presentation teaching technique.

Instrument for Data Collection

The researcher will use two self-designed instruments to collect data for the study. The instruments are; Civic Education Achievement Test (CEAT) and Civic Education Attitude Questionnaires (CEAQ) for junior secondary school students.

Description of the Instrument

The Civic Education Achievement Test (CEAT) for Junior Secondary School students is an instrument used to measure the Civic Education achievement of students under study. It have sections A and B. Section A contain personal data of the testtees such as name of school, school location, and gender, while section B contain 45 options multiple choice with options A-E to fill in the blank

spaces and 5 essay question prepared based on the content of junior secondary II Civic Education syllabus.

Reaserch Questions

The following research questions will guide the study:

a. What is the pretest and posttest attitude mean scores of Displaced and Non-displaced in Civic Eduction in experimental and control groups in Borno and Yobe States?
b. What is the posttest attitude mean scores of Displaced and Non-displaced students in Civic Education in experimental group Borno state and Yobe state?
c. What is the pretest and posttest achievement mean scores of Displaced and Non-displaced students in Civic Education in experimental and control groups in Borno State and Yobe state?
d. What is the posttest achievement mean scores of male and female JSSII students in Civic Education in Borno state and Yobe state, after exposure to conceptual diagrams instruction?
e. What is the posttest achievement mean scores of Displace and Non-displaced students in the experimental group in Borno state and Yobe state?

Method of Data Analysis

The researcher the descriptive and inferential statistics in analyzing the data for the study. The descriptive statistics mean and standard deviation will be used to analyse data for answering the research questions. All hypotheses will be tested at 0.05 level of significance using the Statistical Package of the social sciences (SPSS) version 22.2 the t–test or independent samples will be used to determine any significant difference in the mean score of two different groups base on the variables under investigation.

TABLE 2. Pre-test and Post-test Achievement of Students towards Civic Education in the Experimental and Control Groups

Group	Test	N	$\overline{X}$	SD	Mean Gain	Mean Difference
Experimental	Pre-test	65	52.03	9.150	43.59	
	Post-test	65	95.62	14.713		33.24
Control	Pre-test	60	49.98	8.333	10.35	
	Post-test	60	60.33	10.823		

Table 2 show the pretest and posttest achievement mean score of students in Civic education in the experimental and control group in Borno and Yobe State. Students taught Civic Education using conceptual diagrams technique and those taught with chalk and board method had pre-test mean scores of 52.03 and 49.98 with standard deviation scores of 9.15 and 8.33, respectively. The post-test mean scores of the experimental and control groups are 95.62 and 60.33, with standard deviation scores of 14.71 and 10.35, respectively. The mean gains were 43.59 and 10.35 for two groups respectively with a mean difference of 33.24. This implies that conceptual diagrams technique does help change students' attitude positively towards Civic education.

TABLE 3. Post-test achievement Mean Scores of Male and Female Students in Civic Education in the Experimental Group

Group	Gender	Post-test			
		N	Mean	SD	$\bar{x}$- Difference
Experimental	Male	34	100.88	13.09	11.04
	Female	31	89.84	14.40	

Post-test achievement mean score of male and female students in Civic education in the experimental group. Male students have a mean score of 100.88 with a standard deviation of 13.09 in the post-test achievement mean score of Civic education. The female students also have a mean score of 89.84 with a standard deviation of 14.40. The findings shows that male students in the experimental group have a higher mean score (100.88) than the female students when students were taught Civic eduacation using conceptual diagrams technique with a mean difference of 11.04. This implies that male students have a more positive attitude than female students in Civic Education after exposure to conceptual diagrams technique in the study areas.

TABLE 4. Attitude Mean Scores of Displaced and Non-Displaced students in Civic Education

Group	Location	Post-test			
		N	Mean	SD	$\bar{x}$- Difference
Experimental	Displaced	39	95.21	15.02	1.02
	Non displaced students	26	96.23	14.51	

Table four indicates the post-test achievement mean scores of internally displaced and non displaced schools. Displaced students have a mean score of 95.21 with a standard deviation of 15.02. Non displaced students have a mean score of 96.23 with a standard deviation of 14.51 with a mean difference of 1.02. This implies that the attitude mean score of urban and rural school students are almost same after conceptual diagrams technique in the study areas.

TABLE 5. Pre-test and Post-test Achievement of Students towards in the Experimental and Control Groups

Group	Test	N	$\overline{X}$	SD	Mean Gain	Mean Difference
Experimental	Pre-test	65	27.72	10.52	36.08	
	Post-test	65	63.80	12.53		16.48
Control	Pre-test	60	24.77	9.28	19.6	
	Post-test	60	44.37	7.38		

Table five show the pretest and posttest achievement mean score of students in Civic education in the experimental and control group in Borno State and Yobe Stae. Students taught Civic Education with conceptual diagrams technique and those taught with chalk and board method had pre-test achievement mean scores of 27.72and 24.77 with standard deviation scores of 10.52 and 9.28, respectively. The post-test mean scores of the experimental and control groups are 63.80 and 44.37, with standard deviation scores of 12.53 and 7.38, respectively. The mean gains were 36.08 and 19.6 for the two groups respectively with a mean difference of 16.48. This implies that conceptual diagrams technique does help improve students' achievement in Civic education.

TABLE 6. Achievement Mean Scores of Male and Female Students in Civic Education after exposure to Conceptual Diagrams Technique

Group	Gender	Post-test			
		N	Mean	SD	$\bar{x}$- Difference
Experimental	Male	34	62.62	13.37	2.48
	Female	31	65.10	11.61	

Table 6 show the pretest and posttest achievement mean score of students Civic education in the experimental and control group in the study areas. Students taught Civic education using conceptual diagrams technique and those taught with Chalk and Board method had pre-test achievement mean scores of 27.72and 24.77 with standard deviation scores of 10.52 and 9.28, respectively. The post-test mean scores of the experimental and control groups are 63.80 and 44.37, with standard deviation scores of 12.53 and 7.38, respectively. The mean gains were 36.08 and 19.6 for the two groups respectively with a mean difference of 16.48. This implies that conceptual diagrams technique does help improve students' achievement in Civic Education.

TABLE 7. Achievement Mean Scores of Displaced students and Non Displaced Students in Civic Education

Group	Location	Post-test			
		N	Mean	SD	$\bar{x}$- Difference
Experimental	Urban	39	60.82	13.896	7.45
	Rural	26	68.27	8.586	

Table seven indicates the post-test attitude mean scores of Internally Displaced students and Non Displaced students. A mean score of 60.82 with a standard deviation of 13.90, while non displaced students have a mean score of 68.27 with a standard deviation of 8.59. The findings shows that non displaced students have a higher mean score (68.27) than the internally displaced students when taught Civic Education using conceptual diagrams technique with a mean difference of 7.45. This implies that non displaced students achieved better than displaced students in Civic Education after exposure to conceptual diagrams technique in study area.

TABLE 8. ANCOVA Result on Achievement Mean Scores of Students in Civic Education in the Experimental and Control Groups

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	11787.773a	2	5893.887	54.263	.000	.471
Intercept	46135.149	1	46135.149	424.747	.000	.777
Covariate	4.954	1	4.954	.046	.831	.000
Group	11595.291	1	11595.291	106.753	.000	.467
Error	13251.379	122	108.618			
Total	395939.000	125				
Corrected Total	25039.152	124				

a. R Squared = .471 (Adjusted R Squared = .462)

In the table 8 is Analysis of Covariance (ANCOVA) result on significant difference between the achievement mean scores of students in Civic Education in the experimental and control groups. From the result, $F(122) = 106.75$, $P < 0.05$, since the P-value of .000 is less than .05, the null hypothesis was therefore rejected, it was concluded that there is a significant difference in the post-test achievement mean scores of students in Civic Education in the experimental and control groups. The result further shows an adjusted R squared value of .462, which means that 46.2% of the variation in the dependent variable which is students' achievement is explained by variation in treatment, while the remaining is due to other factors not included in this study. This implies that conceptual diagrams technique can help improve student's achievement in Civic Education.

Hypothesis Three

There is no significant difference between the posttest achievement mean scores of male and female students in Civic Education in the experimental group in Borno State and Yobe State.

TABLE 9. ANCOVA Result on Attitude Mean Scores of Male and Female Students in Civic Education in the Experimental and Control Groups

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	150.107[a]	2	75.053	.470	.627	.015
Intercept	34302.774	1	34302.774	214.906	.000	.776
Covariate	50.446	1	50.446	.316	.576	.005
Gender	122.332	1	122.332	.766	.385	.012
Error	9896.293	62	159.618			
Total	274625.000	65				
Corrected Total	10046.400	64				

a. R Squared = .015 (Adjusted R Squared = -.017)

Analysis of Covariance (ANCOVA) was conducted to determine if there is a significant difference in the achievement mean scores of male and female students taught Civic Education with conceptual diagrams technique. In the table above, it shows that the F-value for gender is .766 with significant P-value of .385 which is greater than .05 level of significance. The null hypothesis was therefore rejected, it was concluded that there was no significant difference between the achievement mean scores of male and female students taught Civic Education using conceptual diagrams technique. The result further shows an adjusted R squared value of -.017 which means that there is no significant effect of treatment on gender. Hence, conceptual diagrams technique can help improve the achievement of both male and female students in Civic Education.

Hypothesis Four

There is no significant difference between the achievement mean scores of internally displaced students and non displaced students in the experimental group in the study area.

TABLE 10. ANCOVA Result on Achievement Mean Scores of Displaced students and Non Displaced Students in Civic Education in the Experimental and Control Groups

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	997.209[a]	2	498.605	3.416	.039	.099
Intercept	23933.803	1	23933.803	163.981	.000	.726
Covariate	131.668	1	131.668	.902	.346	.014
School Location	969.435	1	969.435	6.642	.012	.097
Error	9049.191	62	145.955			
Total	274625.000	65				
Corrected Total	10046.400	64				

a. R Squared = .099 (Adjusted R Squared = .070)

The table 10 show that the F-value for the school location(urban/rural) is 6.64 with significant P -value of .012 which is less than .05 level of significance. The null hypothesis was therefore rejected, it was concluded that there was a significant difference between the achievement mean scores of urban and rural school students taught Civic Education using conceptual diagrams technique. The result further shows an adjusted R squared value of .070 which means that 7% of the variation in the dependent variable which is students' achievement is explained by variation in school location, while the remaining is due to treatment and other factors not included in this study. This means that conceptual diagrams technique has an effect on achievement of Internally Displaced and Non Displaced students in Civic Education. This implies that conceptual diagrams technique can help improve the achievement of both Displaced and Non Displaced students in Civic Education in favour of Internally Displaced students.

Discussion of Findings

The pretest and posttest achievement mean score of students in Civic education in the experimental and control group in Biu, Borno and Yobe State. Students taught Civic Education using conceptual diagrams technique and those taught with chalk and board method had pre-test mean scores of 52.03 and 49.98 with standard deviation scores of 9.15 and 8.33, respectively. The post-test mean scores of the experimental and control groups are 95.62 and 60.33, with standard deviation scores of 14.71 and 10.35, respectively. The mean gains were 43.59 and 10.35 for the two groups respectively with a mean difference of 33.24. This implies that conceptual diagrams technique does help change students' attitude positively towards Civic education.

Post-test achievement mean score of male and female students in social studies in the experimental group. Male students have a mean score of 100.88 with a standard deviation of 13.09 in the post-test achievement mean score of Civic education. The female students also have a mean score of 89.84 with a standard deviation of 14.40. The findings shows that male students in the experimental group have a higher mean score (100.88) than the female students when students were taught Civic eduacation using conceptual diagrams technique with a mean difference of 11.04. This implies that male students have a more positive attitude than female students in Civic Education after exposure to conceptual diagrams technique in the study areas.

Conclusion

Effective use of Conceptual diagrams technique in Civic Education instruction can help improve achievement of both male and female students in.

- Nondisplaced students achieved better compared with displaced students in Civic Education after exposure to conceptual diagrams technique in study area.
- Conceptual diagrams technique does help improve students' achievement in Civic Education.
- Male students have a more positive attitude than female students in Civic Education after exposure to conceptual diagrams technique in the study area.
- Conceptual diagrams technique is found to be effective in improving students attitude to civic education in the study area.
- Displaced students participation in learning with conceptual diagram is found to be helpful in building confidence.

Recommendations

Based on the findings of this study, it is recommended that :

- Students should be taught Civic Education with Conceptual diagrams technique since the technique is found to improve academic achievement.
- Civic Education teachers need to employ collaborative teaching technique for students with special needs such as internally displaced for social inclusion.
- Government and Curriculum planners need to motivate teachers to use instructional technique such as Conceptual Diagram for the attainment of 21st centuary Educational goal of Learner Centerd and Teacher Passive Instruction
- Researchers in Civic Education and other related disciplines need to conduct studies in teaching techniques for effective learning in line with 21st centuary Educational goals.
- There is the need for pre-service and in-service training for teachers on instructional techniques and other related learning activities for effective learning in schools.

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