Concept Mapping and Cooperative Learning Strategies on Junior Secondary School Students' Performance in Social Studies

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Abstract
The study investigated effect of concept mapping and cooperative learning strategies on junior secondary school students' performance in Social Studies in Ika South Local Government Area, Delta State. Five research questions and five hypotheses were formulated for the study. Quasi-experimental, non-randomized pretest-posttest control group design was adopted. The population for the study was 5,522 public secondary school students in Ika South LGA. A sample of 141JSSII students was used through multistage sampling technique. Data were collected via a 50-item instrument titled: "Social Studies Performance Test" (SSPT). The instrument was validated by seven experts. A reliability coefficient of 0.75 was obtained using Pearson Product Moment Correlation. Mean and standard deviation was used to answer research questions while analysis of covariance (ANCOVA) was used to test the hypotheses at .05 level of significance. The results revealed that all the independent variables were significant to improved students' performance in Social Studies. Also, both the male and female students benefitted equally from the concept mapping strategy. However, a disparity was found between the male and female students taught using cooperative learning strategy, in favour of female students. Based on the findings and conclusion it was recommended that seminars and workshops should be organized for Social Studies teachers on the use of strategies (concept mapping and cooperative learning) across the federation so as to enhance meaningful teaching/learning in Social Studies Education. It is also recommended that concept mapping and cooperative learning strategies be included in the pre-service teaching methods at the Nigeria Certificate in Education (NCE) and degree programmes and be practiced during the Teaching Practice Exercise.

Keywords: *Concept mapping strategy, Cooperative learning strategy, Junior secondary school, Students' performance, Social Studies.*

Introduction

Teaching methods in Social Studies education have been one of the focal point of professional discourse among Social Studies educators, since the introduction of the subject into the Nigerian school curriculum. Thus, the traditional methods were reported to be the most frequently used methods of teaching which has become the model for most schools. Traditional methods are fully teacher-centred process. Students are given update of the factual materials in direct and logical manner and this has gotten a number of limitations, such that communication is one way, learning is difficult to grasp and audience are passive. Therefore, there are many flaws in the present day teaching system. Students are passive listeners; there are no exposures to critical thinking; no active learning, thereby discouraging students from learning (Yore, 2012).

Obviously, these teaching methods have failed to bring about the desired outcome of producing thinking students. A survey of literature on teaching methods in Social Studies education has clearly shown that traditional teacher-centred approach to teaching which

informs the use of methods like lecture and recitation have been relegated to the background. In response to the above assertion Njok and Sunday (2014), blamed Social Studies teachers for not using inquiry-related strategies. This attitude is said to contribute to the ineffective teaching and learning of the subject. The limitation experienced with the traditional teacher-centred methods led to the search for more innovative strategies of teaching Social Studies.

Reacting to the above scenario, Mezieobi (2014) emphasized the need to use learner-dominated methods in teaching concepts in this area. Some of the commonly identified methods include: the discovery method, the value clarification method, the discussion method, the simulation and game method, and the dramatization method. Also, the National Teachers' Institute (NTI, 2009) recommended the following teaching methods for appropriate accomplishment of Social Studies goals in the classroom: Inquiry method, guided discovery, concept mapping, cooperative learning, game and simulation under the inquiry-related strategies.

Concept mapping is a metacognitive learning strategy used in measuring individual's knowledge structure and organization in a specific domain of knowledge. Metacognition refers to "cognition about cognition" or "knowing about knowing" or "thinking about thinking". Concept mapping, is a technique used to represent the relationships among concepts in a two dimensional graph. Concept mapping represents a collection of interconnected concepts with specified relationships between pairs of concepts identified on the links connecting them (Derbentseva & Safayeni, 2004). Concept-mapping is a useful way of representing concepts in a topic or unit and showing their interrelationships in a two-dimensional structure. Both the teacher and the learner can use the map to show how they think about a group of concepts and their relationships. Concept-mapping is an instructional strategy that has been found to bring about improvement in teaching and learning in any subject. Depending on its intended use, concept mapping has also been referred to as cognitive mapping, mental mapping, concept webbing, concept trees, knowledge maps, clinical correlation maps, patterned note taking, and flow charting. All of these terms refer to the notion of presenting related ideas in a graphical manner.

Concept mapping provides a visual representation of a particular domain which could assist students to make better use of materials available. Looking through the map, he/she may be able to see the key concepts and can arrange them from general to specific and relate them to each other in a meaningful way. Thus, concept mapping is a powerful but simple way of using diagrams to show information in the same way one thinks. Concept mapping makes it easy to understand, remember, and communicate complex information. In this setting, the teacher's role has shifted from that of imparting knowledge to a facilitator (Borich, 2004).

Similarly, Akeju, Rotimi, and Kenni (2012) investigated the effects of teaching with concept mapping instructional strategy on learning performance in Nigeria secondary schools and found that: Concept mapping instructional strategy contributed to learning performance in physics; there is significant effect of treatment on students' retention of learned materials; there is significant effect in students' learning attitude. The result also established that the instructional strategy when integrated with any method of instruction resulted in improved learning performance. Ojebiyi and Salako (2013) examined the effect of concept mapping instructional strategy on junior secondary school student's knowledge of multiculturalism in the global 21st century Social Studies classroom and found that concept mapping is an effective strategy for instruction. Also, Macnamara (2012) conducted a study on whether concept mapping can be used to assist students to improve their learning performance, as well as,

interests and found that: First, concept mapping strategy significantly improve student's learning performances compared to using the traditional expository teaching method. Secondly, most of the learners were satisfied with using concept mapping in an advanced accounting course. Atomatofa (2013) investigated the effects of advance organizers on attainment and retention of students' concept of gravity and weightlessness in Nigeria. Results showed a significant difference in the attainment of the concept of gravity between subjects exposed to advance organizers and those not exposed to organizers with the organizer group performing better than the non-organizer group. Afamasaga-Fuata'i (2012) investigated the effect of using the concept mapping strategy in teaching on the performance of fifth graders in science and found that concept mapping is an effective strategy for teaching and learning mathematics, which is capable of improving students' mastery of content at the higher-order levels of cognition. Concept mapping is an important strategy for meaningful learning. It helps students to organize new information to what they already known, thereby promoting long-term retention of the information in a usable integrated Network (Novak and Canas, 2009). Also, Boujaoude and Attieh (2008) in separate studies reported that concept mapping helped students to build explicit links and relationships between concepts that stimulated the construction of integrated knowledge structure to achieve higher in tests that measure high cognitive levels.

On the other hand, cooperative learning instructional strategy organizes students in small groups so that they can work together to maximize their own and each other's learning. Specifically, the cooperative learning approach to instruction is where students are arranged in pairs or small groups to help each other learn assigned material. Unlike self-directed inquiry, in cooperative learning groups, students generally take responsibility for each other's learning. There are four basic elements in cooperative learning models. These basic elements include: small groups which must be structured for positive interdependence; there should be face-to-face interactions, individual accountability, and the use of interpersonal and small group skills.

Cooperative learning has been found to be very useful in several areas and prominent among them are: (i) helping learners to acquire from the curriculum the basic cooperative attitudes and values they used to think independently inside and outside the classroom. (ii) Promoting the communication of pre-social behaviour; encouraging high thought processes and fostering concept understanding and performance. Cooperative learning is known to actively engage students in the learning process and seeks to improve the critical thinking, reasoning, and problem solving skills of the learner (Borich, 2004). Jacobson and Baribor (2012) reiterated that group work could arouse students' learning interest, cultivate their exploring ability and creative thinking and improve their team spirit and social communication skills. According to Şimek, Byilar and Kucuk (2013) cooperative learning is a process meant to facilitate the accomplishment of a specific end product or goal through people working together in groups. Similarly, Ruel and Bastianns (2003) see cooperative learning as an instructional method which allows the students the independence to use mental processes to contribute to knowledge.

Effect of gender and students' performance

Gender difference and students performance have always been a controversial inclusive and contradictory, some researchers reporting significant differences and others no significance at all. Various studies have found male students performing, on average, better than their female counterpart student (Moroz, 2001). Nzewi (2010) maintained that gender does not absolutely control performance on its own. Also, Viann (2004) observed no significant gender difference in his study on difference and effect of cooperative learning in mathematics

classroom setting. Spencer (2004) argued that gender does not influence performance of students exposed to mathematics course or another subject. Hyde (2004), decried that the cognitive difference between females and males has been exaggerated. Nwaigwe (2001) asserted that research has raised enough evidence to show that women (females) are capable and talented as men (males) in every aspect of human endeavour. Supporting the above assertion, Arigbabu and Mji (2004), Bilesanmi-Awoderu (2006), affirmed the view that there is no contrast in students attainment in the cognitive, affective and psychomotor domain in terms of gender.

Conversely, Croxford (2002) observed that the level of accomplishment for males is lower as compared to females in terms of the stages of the entire curriculum. This assertion is affirmed by the study of Meltem and Serap (2007), in which they found a significant difference in the academic performance of male and female students in favour of females in terms of Cumulative Grade Point Average (CGPA). Abdu-Raheem (2012) noted a significant influence of gender on students' academic performance in favour of female students.

The learning which lasts long and always available for use later is the process whereby knowledge is created through the transformation of experience. With the expansion of education, creation of new fields of discipline, development of different instructional approaches regularly, and the increasing emphasis on lesson clarity, promotion of self-activity, stimulation of interest and curiosity, teaching methods associated with subject matter discipline, instructional variety, retention rates and life-long learning, there is therefore good reason to explore other instructional approaches for teaching Social Studies different from the one predominantly used for very long time. Therefore, the present study intends to determine if concept mapping and cooperative learning strategies have varying effects on students' performance.

Statement of the Problem

There are many conditions that are considered adequate for effective teaching and learning processes which have eluded the present classroom situations in Nigerian schools today. Several studies in Nigeria revealed unsteadiness in performances of students in Social Studies education at the junior secondary school level. Many reasons have been linked with this, one of which is the teaching methods. Mezieobi, Fubara, and Mezieobi (2013) attributed the dismal declining performance in Social Studies education at the junior secondary school level in Nigeria to the use of inappropriate approaches by the teachers in teaching the subject. The regular use of chalk and talk method is suspected to have contributed to the decline in the performance of students in Social Studies education at the junior secondary school level over the years. Research findings by Mezieobi (2014) also suggested that most of the teachers have continued to use teacher-centred delivery approaches rather than student-centred inquiry approach.

In addition, the constant use of teacher-centered approaches has also been identified to contributing to students low performances (Opoh, Sunday & Ogbaji, 2014). Opoh, Adams and Akai (2017), also revealed an evidence of inconsistent performance trend of Social Studies students for a period of four years (2010-2013). Similarly, in principle, the researcher observed that the instructional methods that teacher uses could be responsible for the low performance of learners in Social Studies.

However, it had been observed that using an appropriate teaching strategy at any given learning objective enhanced students' performance. This provides the impetus for this study. Therefore, the problem of this study in declarative form is to examine the effect of concept

mapping and cooperative learning strategies in enhancing students' performance in Social Studies?

Aim and Objectives of the Study

The aim of the study was to examine the effects of concept mapping, and cooperative learning strategies on students' performance in Social Studies.

Specifically, the study sought to:

1. Find out the effect of concept mapping learning strategy on the academic performance of students in Social Studies.
2. Examine the effect of cooperative learning strategy on the academic performance of students in Social Studies.
3. Compare the effect of concept mapping learning strategy on the academic performance of male and female students in Social Studies.
4. Compare the effects of cooperative learning strategy on the academic performance of male and female students in Social Studies.
5. Determine the combined effects of concept mapping and cooperative teaching strategy on the academic performance of students in Social Studies.

Research Questions

The following research questions guided the study.

1. What are the mean performance scores of students taught Social Studies using concept mapping strategy and those taught using traditional method?
2. What are the mean performance scores of students taught Social Studies using cooperative learning strategy and those taught using traditional method?
3. What difference exists between the mean performance scores of male and female students taught Social Studies using concept mapping?
4. What difference exists between the mean performance scores of male and female students taught Social Studies using cooperative learning strategy?
5. What difference exists in the academic performance of students taught Social Studies using concept mapping strategy and those taught with cooperative teaching strategy?

Hypotheses

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

1. There is no significant difference between the mean performance scores of students taught Social Studies using concept mapping learning strategy and those taught using traditional method.
2. There is no significant difference between the mean performance scores of students taught Social Studies using cooperative learning strategy and those taught using traditional method.
3. There is no significant difference between the mean performance scores of male and female students taught Social Studies using concept mapping strategy.
4. There is no significance difference in the mean performance scores of male and female students taught Social Studies using cooperative learning.
5. There is no significant difference between the mean performance scores of Social Studies students taught using concept mapping and cooperative learning strategies on the academic performance of students in Social Studies.

Methodology

Quasi experimental design was used for this study. Specifically, a non-randomized pretest-posttest control group design. The intervention class lasted for three weeks. The

population of the study was all JSSII Social Studies students in public secondary schools in Ika South Local Government Area of Delta State. A sample of 141 students made up of 65 male and 76 female students respectively were used. Multistage sampling technique was adopted to obtain the sample. The instrument for data collection was Social Studies Performance Test (SSAT), which consist of fifty (50) multiple choices objective questions, with options (A-E).The instrument was validated by five experts in Curriculum Studies and Educational technology, University of Port Harcourt. A reliability coefficient of 0.75 was obtained for the study using Pearson product moment correlation coefficient. The treatment exercise lasted for three weeks before the post-test. Mean and standard deviation were used to answer the research questions, while the null hypotheses were tested with analysis of covariance (ANCOVA) at 0.05 level of significance.

Results

1. What are the mean performance scores of students taught Social Studies using concept mapping strategy and those taught using traditional method?

Table 1: Mean and standard deviation of pretest and post-test scores of students' exposed to concept mapping strategy and those taught with traditional method.

Group	N	Pre-test		Post-test		Gained mean
		Mean	SD	Mean	SD	
Concept mapping strategy (Exptal. I)	47	32.60	6.056	79.38	11.706	46.78
Traditional method (Contr)	46	32.65	6.339	39.96	10.071	7.31

Table 1 show that students exposed to concept mapping strategy had a higher gained mean than those taught with traditional method.

2. What are the mean performance scores of students taught Social Studies using cooperative learning strategy and those taught using traditional method?

Table 2: Mean and standard deviation of pretest and post-test scores of students' exposed to cooperative learning strategy and those taught with traditional method.

Group	N	Pre-test		Post-test		Gained mean
		Mean	SD	Mean	SD	
Cooperative learning strategy (Exptal. II)	48	34.71	9.239	56.38	9.942	21.67
Traditional method (Contr)	46	32.65	6.339	39.96	10.071	7.31

Table 2 show that students exposed to cooperative learning strategy had a higher gained mean than those taught with traditional method.

3. What difference exists between the mean performance scores of male and female students taught Social Studies using concept mapping?

Table 3: Mean and standard deviation of pretest and post-test scores of male and female students' exposed to concept mapping strategy.

Gender	N	Pre-test Mean	SD	Post-test Mean	SD	Gained mean	Mean Difference
Male	23	31.57	7.31	82.35	9.95	50.78	7.82
Female	24	33.58	4.49	76.54	12.74	42.96	

Table 3 shows that male students exposed to concept mapping strategy had a higher gained mean than the female counterparts with a mean difference of 7.82.

4. What difference exists between the mean performance scores of male and female students taught Social Studies using cooperative learning strategy?

Table 4: Mean and standard deviation of pretest and post-test scores of male and female students' exposed to cooperative learning strategy.

Gender	N	Pre-test Mean	SD	Post-test Mean	SD	Gained mean	Mean Difference
Male	21	33.90	10.54	52.10	9.35	18.2	-6.17
Female	27	35.33	8.25	59.70	9.23	24.4	

Table 4 shows that female students exposed to cooperative learning strategy had a higher gained mean than the male counterparts with a mean difference of -6.17.

5. What difference exists in the academic performance of students taught Social Studies using concept mapping strategy and those taught with cooperative teaching strategy?

Table 5: Mean and standard deviation of pretest and post-test scores of students' exposed to concept mapping strategy and cooperative learning strategy.

Group	N	Pre-test Mean	SD	Post-test Mean	SD	Gained mean
Concept mapping strategy (Exptal. I)	47	32.60	6.06	79.38	11.71	46.78
Cooperative learning strategy (Exptal.II)	48	34.71	9.24	56.38	9.94	21.67

Table 5 shows that students exposed to concept mapping strategy had a higher gained mean than those taught using cooperative learning strategy.

Ho_1: There is no significant difference between the mean performance scores of students taught Social Studies using concept mapping learning strategy and those taught using traditional method.

Table 6: Analysis of Covariance (ANCOVA) of the significant difference in the mean performance scores of students taught Social Studies using concept mapping strategy and those taught using traditional method.

Source	Type III Sum of Squares	df	Mean Square	F	*P*	Sig.
Corrected Model	36138.670[a]	2	18069.335	149.677	.000	P<0.05
Intercept	11592.043	1	11592.043	96.022	.000	P<0.05
Pretest	1.991	1	1.991	.016	.898	P>0.05
Group	36133.446	1	36133.446	299.310	.000	P<0.05
Error	10865.029	90	120.723			
Total	380485.000	93				
Corrected Total	47003.699	92				

The result in Table 6 show a significant difference in the mean performance scores of students taught Social Studies using concept mapping strategy and those taught using traditional method. An F-ratio of 299.310 was obtained with associated probability value of .000. Since the associated probability value of .000 was less than 0.05 set as level of significance, the null hypothesis ($H0_1$) was therefore rejected.

Ho_2: There is no significant difference between the mean performance scores of students taught Social Studies using cooperative learning strategy and those taught using traditional method

Table 7: Analysis of Covariance (ANCOVA) of the significant difference in the mean performance scores of students taught Social Studies using cooperative learning strategy and those taught using traditional method.

Source	Type III Sum of Squares	Df	Mean Square	F	*P*	Sig.
Corrected Model	6451.862[a]	2	3225.931	32.297	.000	P<0.05
Intercept	13666.634	1	13666.634	136.828	.000	P<0.05
Pretest	119.919	1	119.919	1.201	.276	P>0.05
Group	6451.557	1	6451.557	64.592	.000	P<0.05
Error	9089.244	91	99.882			
Total	235200.000	94				
Corrected Total	15541.106	93				

The result in Table 7 show a significant difference in the mean performance scores of students taught Social Studies using cooperative learning strategy and those taught using traditional method. An F-ratio of 64.592 was obtained with associated probability value of .000. Since the associated probability value of .000 was less than 0.05 set as level of significance, the null hypothesis (Ho_2) was therefore rejected.

Ho_3: There is no significant difference between the mean performance scores of male and female students taught Social Studies using concept mapping strategy.

Table 8: Analysis of Covariance (ANCOVA) of the significant difference in the mean performance scores of male and female students taught Social Studies using concept mapping strategy.

Source	Type III Sum of Squares	df	Mean Square	F	*P*	Sig.
Corrected Model	411.371[a]	2	205.686	1.536	.227	P>0.05
Intercept	10207.673	1	10207.673	76.232	.000	P<0.05
Pretest	15.440	1	15.440	.115	.736	P>0.05
Gender	359.191	1	359.191	2.682	.109	P>0.05
Error	5891.735	44	133.903			
Total	302481.000	47				
Corrected Total	6303.106	46				

The result in Table 8 show the mean scores of male and female students taught Social Studies using concept mapping strategy. An F-ratio of 2.682 was obtained with associated probability value of .109. Since the associated probability value of .109 was greater than 0.05 set as level of significance, the null hypothesis (Ho_3) which stated that there is no significant difference between the mean performance scores of male and female students taught Social Studies using concept mapping strategy was upheld. This means that gender is not a significant factor in determining students' performance in Social Studies using concept mapping strategy.

Ho_4: There is no significance difference in the mean performance scores of male and female students taught Social Studies using cooperative learning.

Table 9: Analysis of Covariance (ANCOVA) of the significant difference in the mean performance scores of male and female students taught Social Studies using cooperative learning strategy.

Source	Type III Sum of Squares	df	Mean Square	F	*P*	Sig.
Corrected Model	1031.286[a]	2	515.643	6.421	.004	P<0.05
Intercept	13589.254	1	13589.254	169.209	.000	P<0.05
Pretest	347.475	1	347.475	4.327	.043	P<0.05
Gender	757.134	1	757.134	9.428	.004	P<0.05
Error	3613.964	45	80.310			
Total	157196.000	48				
Corrected Total	4645.250	47				

The result in Table 9 show the mean scores of male and female students taught Social Studies using cooperative learning strategy. An F-ratio of 9.428 was obtained with associated probability value of .004. Since the associated probability value of .004 was less than 0.05 set as level of significance, the null hypothesis (Ho_4) which stated that there is no significant difference between the mean performance scores of male and female students taught Social Studies using cooperative learning strategy was rejected.

Ho_5: There is no significant difference between the mean performance scores of Social Studies students taught using concept mapping and cooperative learning strategies on the academic performance of students in Social Studies.

Table 10: Analysis of Covariance (ANCOVA) of the significant difference in the mean performance scores of students taught Social Studies using concept mapping strategy and those taught using cooperative leaning strategy

Source	Type III Sum of Squares	Df	Mean Square	F	*P*	Sig.
Corrected Model	12888.714[a]	2	6444.357	55.771	.000	P<0.05
Intercept	27477.780	1	27477.780	237.797	.000	P<0.05
Pretest	317.639	1	317.639	2.749	.101	P>0.05
Group	11812.315	1	11812.315	102.226	.000	P<0.05
Error	10630.718	92	115.551			
Total	459677.000	95				
Corrected Total	23519.432	94				

The result in Table 10 show a significant difference in the mean performance scores of students taught Social Studies using concept mapping and cooperative teaching strategy. An F-ratio of 102.226 was obtained with associated probability value of .000. Since the associated probability value of .000 was less than 0.05 set as level of significance, the null hypothesis (Ho_5) was therefore rejected.

Discussion of findings

Results in Table 1 shows that students in experimental group I (concept mapping strategy) had higher achievement scores in Social Studies compared with their control group (traditional method) counterparts. This is further confirmed by the results in Table 6 which indicate that method is a significant factor to Social Studies students' performance. This means that students who were taught using the concept mapping strategy performed better than those who were taught using the traditional method. This finding agrees with Akeju, Simpson, Rotimi and Kenni (2012) who found a significant difference between experimental and control groups in favour of concept mapping group. The finding also corroborates with Ojebiyi and Salako, (2013) who observed that learners learned better with concept mapping. Along the same vein Macnamara (2012) maintained that, concept mapping strategy promotes meaningful learning as well as students' academic performance. Afamasaga-Fuata'i (2012) also found that concept mapping improves long-term information retention, reduces verbatim of non-meaningful information and improves transfer of knowledge in future problem solving activities.

Results in Table 2 shows that students in experimental group II (cooperative learning strategy) had higher achievement scores in Social Studies compared with their control group (traditional method) counterparts. The result in Table 7 also show a significant difference in the mean performance scores of students taught Social Studies using cooperative learning strategy and those taught using traditional method. This finding is in consonance with Jacobson and Baribor (2012) who observed that group work could arouse students' learning interest cultivate their exploring ability and creative thinking and improve their team spirit and social communication skills. Borich (2004) noted that cooperative learning can give weak students the opportunity to learn and achieve maximally. Şimşek, Yilar and Kucuk (2013) also defined cooperative learning as a process meant to facilitate the accomplishment of a specific end goal

through people working together in groups. Ruel and Bastianns (2003) also observed that cooperative teaching strategy allow the students the independence to use his/her mental processes to contribute to knowledge.

Results in Table 3 shows that male students exposed to concept mapping strategy had a higher gained mean than the female counterparts with a mean difference of 7.82.However, the result in Table 4.8, revealed that gender is not a significant factor in determining students' performance in Social Studies using concept mapping strategy. This finding harmonizes with Nzewi (2010), who aver that gender does not absolutely control performance on its own. Spencer (2004) reported that gender does not influence performance of students. Nwaigwe (2001) noted that research has raised enough evidence to show that women (females) are capable and talented as men (males) in every aspect of human endeavour. Arigbabu and Mji (2004), Bilesanmi-Awoderu (2006), revealed no contrast in students' attainment in the cognitive, affective and psychomotor domain in terms of gender. This finding aligns with Viann (2004), who observed no significant gender difference. Spencer (2004) argued that gender does not influence performance of students exposed to mathematics course or another subject. Hyde (2004) reiterated that the cognitive difference between male and female has been exaggerated.

Results in Table 4 shows that the male students taught Social Studies using cooperative learning strategy had a posttest mean of 52.10 with a standard deviation of 9.348. While the female counterparts had a posttest mean of 59.70 with a standard deviation of 9.227. The result in Table 4.9 show that female students taught Social Studies using cooperative learning strategy performed better than the male counterparts. This finding agrees with the studies of Abdu-Raheem (2012) who reported a significant influence of gender on students' academic performance in favour of female students. Croxford (2002) asserted that the level of accomplishment for males is lower as compared to females in terms of the stages of the entire curriculum. This assertion is affirmed by the study of Meltem and Serap (2007), in which they found a significant difference in the academic performance of male and female students in favour of females in terms of Cumulative Grade Point Average (CGPA).

The findings from Table 5 showed that students taught Social Studies with concept mapping strategy outperformed their counterparts taught using cooperative learning strategy. Table 10, also revealed a significant difference between the performances of students taught social studies using concept mapping and cooperative learning strategies. Thus, we affirm that there is a significant difference between the effect of concept mapping and cooperative learning strategies on the academic performance of students in Social Studies in favour of concept mapping strategy as an effective strategy for Social Studies teaching and learning. This finding is in agreement with Atomatofa (2013), who conducted a study on the effects of advance organizers on attainment and retention of students' concept of gravity and weightlessness and found a significant difference in the attainment of the concept of gravity between subjects exposed to advance organizers and those not exposed to organizers, with the organizer group performing better than the non-organizer group. This finding also concurs with Afamasaga-Fuata'i (2012) who affirmed that concept mapping is capable of improving students' mastery of content at the higher-order levels of cognition. Novak and Cannas (2009) reported that concept mapping helps students to organize new information to what they already know, thereby, promoting long term retention of the information in a usable integrated network.

Conclusion

The teaching strategies (concept mapping and cooperative learning) improved students' performance in Social Studies. Also, both the male and female students benefitted equally from the concept mapping strategy (CMS). However, a disparity was found between the male and female students taught using cooperative learning strategies (CLS), in favour of female students.

Recommendations

The following recommendations have been made, based on the result of the study:

1. Seminars and workshops where teachers are trained on the use of strategies (concept mapping and cooperative learning) should be organized by principals and Post Primary School Board across the federation.
2. Classroom teachers should expose students to concept mapping and cooperative learning strategies so as to enhance meaningful teaching/learning in Social Studies Education.
3. Government at all levels should lay emphasis on student-centre learning rather than the traditional teacher-centred so as to promote learning by doing.
4. It is also recommended that concept mapping and cooperative learning strategies be included in the pre-service teaching methods at the Nigeria Certificate in Education (NCE) and degree programmes and be practiced during the Teaching Practice Exercise.

References

Abdu-Raheem, B.O. (2012). Gender differences and students' academic performance and retention in Social Studies among junior secondary schools in Ekiti State. *European Journal of Educational Studies*, 4(1), 155-161.

Afamasaga-Fuata'i, K. (2012). *Concept mapping in mathematics: Research into practice*. New York: Springer.

Akeju, O.O., Simpson, J., Rotimi, C.O. & Kenni, A.M. (2012). Teaching with concept mapping instructional strategy in Nigeria secondary schools. International Association for Teaching and Learning (IATEL). *Proceedings of the 2012 International Conference on Teaching, Learning and Change*. 1 & 2, 637-643.

Arigbabu, A.A. & Mji, A. (2004). Is gender a factor in mathematics performance among Nigerian Pre-service Teachers*? Sex Role*, 51(11&12), 749.

Atomatofa, R. (2013). Effects of advanced organizers on attainment and retention of students' concept of gravity in Nigeria. *International Journal of Research Studies in Educational Technology*, 2(1), 81-90.

Bilesanmi-Awoderu, J.B. (2006). Effect of computer-assisted instruction and simulation/games on the academic performance of secondary school students' in biology. *Sokoto Educational Review*, 8(1), 49-60.

Borich, G.D. (2004). *Effective teaching methods, fifth edition.* New Jersey: Merrill, Prentice Hall.

Boujaoude, S.A. & Attieh, M. (2008). The effect of using concept maps as study tools on performance in chemistry. *Eurasia Journal of Mathematics Science and Technical Education*. 4(3), 233-246.

Croxford, L. (2002). *Gender and National Curriculum:Shifting Agendas inthe UK and Europe,* London: Routledge.

Derbentseva, N. & Safayeni, F. (2004). Experiments on the Effects of Map Structure and Concept Quantification during Concept Map construction. In J.D. Novak, A.J. Canas, & F.M. Gonzalez (Eds), Concept maps, Theory, Methodology, Technology.

Proceeding of the FirstInternational Conference On Concept Mapping. Pamplona, Spain: Universidad Pública de Navarra.2004.

Jacobson, B.N. & Baribor, V. (2012). The effects of teaching techniques on achievement in integrated science: the cooperative learning dimension. *Journal of education & training technology*, 3(1).

Macnamara, J. (2012). *Names for things: A study of human learning. Cambridge*, MA: M.I.T. Press.

Meltem, D. & Serep, T. (2007). Gender differences in academic performance in a Public University in Turkey. *Higher Education*, 53, 255-277.

Mezieobi, K.A (2014). *Bolstering Social Skills in Nigeria Through the Instrumentality of Social Studies.* An Unpublished Paper Presented at the 30th SOSCEAN conference held at ABU Zaria.

Mezieobi, K.A., Fubara, V.R. & Mezieobi, S.A. (2013). *Social Studies in Nigeria: teaching methods, instructional materials and resources.* Owerri: Acadapeak Publishers.

Moroz, W. (2001). A study of teacher and students attitudes towards Social Studies in the middle and upper grade of government primary schools in Western Australia. *Unpublished Doctorial Dissertation*. Curtin University of Technology, Perth Western Australia.

National Teachers' Institute (NTI) (2009). *Manual for the Re-Training of Primary School Teachers*. Kaduna: National Teachers Institute (NTI) Press.

Njok, P.C & Sunday, D.E. (2014). Socio-cultural factors affecting the teaching and learning of Social Studies in Nigeria. *Journal of Education Practice*, 5 (24).

Novak, J.D. & Canas, A. (2009). What is concept map? Retrieved from: *http://www.cmap.ihmc. us/docs/conceptmap.html* on 19 February 2014.

Nwaigwe, B.O. (2001). Enhancing female interests and participation in science and technology through the Universal Basic education (UBE) Programme. Proceedings of the 42nd Annual Conference of Science Teachers Association of Nigeria.

Nzewi, U.M. (2010). It's all in the brain: of gender and performance in science and technology education. *51st Inaugural Lecture*, University of Nigeria, Nsukka.

Ojebiyi, O.A. & Salako E.T. (2013). Effect of concept mapping instructional strategy on junior secondary school student's knowledge of multiculturalism in the global 21st century Social Studies classroom. *Journal of Education and Practice*, 4(13), 15-21.

Opoh, F.A., Adams, A.P. & Akai, K.P. (2017). Evaluation of upper basic social studies students' performance trend in public examination Between 2010-2014 in Cross River State, Nigeria. *International Journal of Innovative Education Research* 5(3), 42-47

Opoh, F.A., Sunday, D.E. & Ogbaji, D.I. (2014). Introduction of social studies education in Nigeria schools: A success or a failure. *International Journal of Education and Research* 2(2).

Ruel, G. & Bastiaans, N. (2003). *Free riding and team performance in project education, International Journal of Management Education* 3(1), 26-37.

Simek, U. Byilar, Y. & Kucuk, B. (20l3). Effects of cooperative learning methods on students' academic performances in social psychology lessons. *International Journal on New Trends in Education and Their Implications*. 4 (3), 1309-6249.

Viann, E. (2004). Gender difference and the effect of cooperative learning in college level mathematics. (*Unpublished Ph.D Thesis*), Curtin University of Technology.

Yore, N. (2012). Teacher effectiveness. In H.E. Mitzel (Ed.), *Encyclopedia of Educational Research.* New York: The Free Press, (4), 1894-1903.