

EFFECT OF FLIPPED CLASSROOM ON SECONDARY SCHOOL STUDENTS ACADEMIC ACHIEVEMENT IN SOCIAL STUDIES IN IMO STATE

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Abstract

The study investigated the effect of flipped classroom on secondary school students' academic performance in Social Studies in Imo state. The study was guided by two research questions and two hypotheses. Quasi-experiment of non-equivalent control groups design was adopted. The population of the study comprises 28,304 male and 29,965 female public junior secondary school students in Imo state. The sample size was 40 male and 40 female JSS2 pupils. Multiple Choice Social Studies Achievement Test I (MCSSAT I) and Multiple Choice Social Studies Achievement Test II (MCSSAT II) with reliability coefficient of internal consistency 0.89 and 0.81 respectively and reliability coefficient of temporal stability as 0.85 and 0.96 respectively were used for the study. Mean and standard deviation were used to answer the research questions while analysis of covariance was used to test the null hypotheses at 0.05 significant levels. Findings showed that flipped teaching and learning method is very effective in enhancing students' academic achievement and gender has no significant effect on the achievement of students who were taught Social Studies contents with flipped classroom. Teachers should be encouraged to use the method in teaching and learning in schools.

Key Words: Flipped classroom method of teaching, traditional teaching method and Social Studies

Introduction

Social problems are among the numerous problems the Nigerian society hoped to provide solutions to through education. Although education has been recognized as an instrument for national development and social change (Federal Republic of Nigeria, 2013), Jimoh (2012) alleged that the responsibility of curbing the endemic social problems in Nigeria society has been left to school system. Some of these endemic social problems according to Information Parlour (2017) include: prostitution, indecent dressing, robbery, cultism, pocket picking, drug addition, examination malpractice, premarital sexual activities and rape among others.

The objectives and contents of Social Studies in Upper Basic Levels (UBL) of education in Nigeria attest that education especially Social Studies among other subjects could help in curbing some of these social vices which are on the increase. The specific objectives which the country hopes to achieve through teaching and learning of Social Studies in UBL of education include to:

develop in the learners the ability to adapt to his or her changing environment; enable learners to become responsible and disciplined individuals capable and willing to contribute to development of their societies; enable learners to inculcate the right type of values; enable learners to develop a sense of comprehension towards other people, their diverse cultures history and those fundamental things that make them humans; enable learners to develop the capacity to recognize the many dimension of being human in many different cultural and social contexts; and enable learners to develop sense of solidarity and sharing based on the sense of security in one's own identity (Nigerian Educational Research and Development Council, 2007:4-5).

Duru (2012), explained how education could be beneficial to an individual:

When an individual (i.e a member of the society) acquires the knowledge skills and competences and is also culturally well adjusted, he uses the knowledge and skills which he has learned to live effectively in the society and contribute to the solution of the human complex social problem in

the society (p,3) which social studies as a functional subject is set to achieve.

This implies that through the learning of Social Studies (which is the part of education the learner receives), the individual understands the right type of societal values and norms, civic duties/obligations and civic rights among others and this will definitely enable the individual to live and function effectively in the society. In other words, through the learning of Social Studies the articulated objectives above can be easily achieved. The curriculum content is very rich in those areas. In terms of content, Social Studies whether as a subject or part of subject, because presently it is fused with civic education to form a subject known as National Values, is highly instrumental for realization of the second, third and fourth objectives of junior secondary education in Nigeria which are to:

develop patriotic young people equipped to contribute to social development and the performance of their civic duties; inculcate values and raise morally uprightly individuals capable of independent thinking and who appreciate the dignity of labour and inspire national consciousness; and harmonious co-existence; irrespective of differences in endowment, religion, colour, ethnic and socio-economic background (Federal Republic of Nigeria, 2013, 9).

Based on these objectives, it is expected that after being exposed to the contents of the curriculum of this subject, students would contribute meaningfully to the development of the society by obeying societal laws, norms, rules and regulations and also in maintaining cultural values as well as having good respect for elders. By doing so, they transfer the learned skills and values that are positive to other members of the society.

On the contrary most of the social problems in the society continue to rise (Kolanole, 2005). The realization of the objectives of Social Studies have appeared elusive (Ajeka, 2011), while students achievement in Social Studies in Basic Educational Certificate Examination as revealed by Planning, Research and Statistics Unit of Secondary Education Management Board Owerri from 2015 – 2016 has shown that 30% of the population of students that registered the exam passed with distinction and credit (Onwudiwe,2019).

The researchers are hypothesizing that the traditional teaching method in the secondary schools which is more or less a combination of lecture and

discussion method could have contributed to this poor performance. This method is teacher-centred. The teacher does most of the activities while students only listen passively and copy note written by the teacher either on the white board or chalkboard. Zvavanh (2010), has identified lecturing, dictation, drill and teacher led discussion or explanation method as examples of traditional teaching method. The author (Zvavanh), averred that in traditional teaching method, students are regarded as having ‘knowledge hole’ that needed to be filled with the right information. The students put all their focus on the teacher, students work alone, collaboration is discouraged, it discourages learner’s autonomous study-skills and open inquiry. It has been found that one of the reasons for poor performance of students in some subjects is due to poor instructional methods which are teacher centered (Idigo, 2010). Without doubts learner-centred method of teaching-learning process like flipped classroom could be used to solve the problem of poor understanding of the content of instruction and retention of students. This is so, because it makes learning more real and meaningful and hence, skills and attitudes learned cannot be easily forgotten.

Flipped classroom is also known as inverted classroom. Vanderbilt University (2018) explained that flipped classroom is one in which students review lecture materials before class as homework while the class time is dedicated to discussions, interactive exercises and independent work that would have previously been completed at home. The lesson is taught in advance, recorded in a digital device like Compact Disc (CD) and the students will watch it at home before lesson. In other words, students have opportunity of learning the lessons by watching them with their siblings, friends and even parents at home before the lesson is discussed in the class. Students can pause, rewind, and/or skip to master every aspect of the topic. Because of the differential level of the understanding of students, those with difficulty at grasping a subject matter have the opportunity of taking out extra time to study it at length without being left behind in the class. Parents have the opportunity to see what goes on in their wards classroom. The students’ motivation to learn through this means is already there because the students love watching television, going through internet among others. Studies have shown that flipped learning is very effective in improving students’ academic performance (Fen, 2017; Hsiu-Tung, 2015). Also according to Flipped Learning Network (2017), 71% of teachers who flipped the classes noticed improved grades and 80% reported improved students attitudes while 99% reported that they would continue to flip their classes.

On the other hand, Adigun, Onihunwa, Irunokhai, Sada & Adasina (2015) reported that gender has no significant effect on students academic

performance in Computer Science in senior secondary schools while Godpower & Ihenkos (2017) found that gender has significant influence on students interest and academic achievement of students in Integrated science in Rivers State.

Based on the foregoing the researchers decide to carry out this study and since gender is more likely to influence the academic achievement of students when taught with the method under investigation, its influence was also sought.

Research Questions

The following research questions guided the study.

1. What are the mean achievement scores of students who were taught some Social Studies contents with flipped classroom method and those who were taught the same Social Studies with traditional teaching (lecture) method?
2. What are the mean achievement scores of male and female students who were taught the same Social Studies contents with flipped classroom method?

Hypotheses

The following hypotheses were formulated and tested at 0.05 significant levels.

1. There is no significant difference in the mean achievement scores of students who were taught some Social Studies contents using flipped classroom method and those taught the same contents with traditional teaching/lecture method.
2. There is no significant difference in the mean achievement scores of male and female students who were taught the same Social Studies contents using flipped classroom method.

Methods

Quasi-experiment of non-equivalent control groups research design was adopted. The population is 58,269 which comprise 28304 male and 29965 female public junior secondary school students of Imo State (SEMB, Owerri 2018/2019 Students Enrolment). Two co-educational public junior secondary schools were randomly drawn and one stream of JSS2 was randomly drawn from each of the two schools and the intact class size of 40 (20 male and 20 female students, achieved under special arrangement) each were used giving a total sample size of 80 pupils. Multiple choice Social Studies Achievement Test (MCSSAT I) which was developed from what the students have already

learnt that are related to the contents to be taught and administered to students before the treatment was applied (i.e. as pretest) and Multiple Choice Social Studies Achievement Test (MCSSAT II) which was developed from what the students are to be taught and administered to students after the treatment was applied (i.e. as post test). They were validated by three experts in Educational Measurement and Evaluation and two specialists in Social studies were used for the study. Each of the instruments contains 50 items with five answer options per item. The reliability coefficients of internal consistency of MCSSAT I and MCSSAT II were 0.89 and 0.81 respectively while their reliability coefficients of temporal stability were 0.85 and 0.96 respectively. MCSSAT I was given to the two streams independently and one stream in one school was taught social studies units with flipped learning while the other stream of the other school was taught the same units of Social Studies by the usual traditional teaching method. After the treatment the MCSSAT II was administered to obtain the posttest scores. Mean and standard deviations were used to answer the research questions while analysis of covariance was used to test the hypotheses at 0.05 significant levels.

Results

Research Question One: What are the mean achievement scores of students who were taught some Social Studies contents with flipped classroom method and those who were taught the same Social Studies contents with traditional teaching (lecture) method?

Table 1: Pretest and Posttest Mean Scores of Students in Flipped Classroom Method Group and Traditional Teaching Method

Teaching method	n	Pretest Statistics \bar{X}	Statistics S	Post test Statistics \bar{X}	Statistics S
Flipped classroom method	40	30.975	4.329	43.90	3.657
Traditional teaching method	40	32.775	5.929	38.80	2.897

Maximum Obtainable score = 50; Minimum Obtainable Score = 0. X = Mean, S = Standard Deviation

Table 1 showed that pretest mean and standard deviation of students in flipped learning method are 30.975 and 4.329 respectively while those in traditional teaching method are 32.775 and 5.929 respectively. Also the table showed that the posttest mean and standard deviation of students in flipped

learning method are 43.90 and 3.657 respectively while those in traditional teaching method group are 38.80 and 2.897 respectively.

Hypothesis One: There is no significant difference in the mean achievement scores of students who were taught some Social Studies contents using flipped classroom method and those taught the same contents with traditional teaching/lecture method ($p < 0.05$).

Table 2: Summary Result of ANCOVA Test of Hypothesis One

Sources of Variation	Sum of Squares	df	MS	F-ratio cal.	SL	F-tab.
Adjusted means	581.135	1	581.135	63.547	0.05	3.96
Error	704.168	77	9.145			
Total	1285.303	78				

Table 2 showed that the calculated F-ratio (63.547) is greater than the tabulated F-ratio at 0.05 significant levels and laid 77 degrees of freedom (3.96), hence null hypothesis one is rejected.

Research Question Two: What are the mean achievement scores of male and female students who were taught the same Social Studies contents with flipped classroom method?

Table 3: Pretest and Posttest Mean Scores of Male and Female Students in Flipped Classroom Method Group

Gender	n	Pretest \bar{X}	Statistics S	Post test \bar{X}	Statistics S
Male	20	30.55	4.123	43.25	3.625
Female	20	31.40	4.593	44.56	3.665

Maximum Obtainable Score = 50; Minimum Obtainable Score = 0. X = mean, S = Standard Deviation

Table 3 showed that pretest mean and standard deviation of male students as 30.55 and 4.123 respectively while that of the female students as 31.40 and 4.593 respectively. Also the table showed the posttests mean and standard deviation of male students as 43.25 and 3.625 respectively while that of female students as 44.56 and 3.665 respectively.

Hypothesis Two: There is no significant difference in the mean achievement scores of male and female students who were taught the same Social Studies contents using flipped classroom method ($p < 0.05$).

Table 4: Summary Result of ANCOVA Test of Hypothesis Two

Sources of Variation	Sum of Squares	df	MS	F-ratio cal.	SL	F-tab.
Adjusted means	9.389	1	9.389	0.873	0.05	4.11
Error	398.109	37	10.760			
Total	407.498					

Table 4 showed that F-ratio calculated (0.873) is less than F-ratio tabulated at 0.05 significant levels 1 and 37 degrees of freedom (4.11) hence, null hypothesis is accepted.

Discussion of Results

The result shows that students who learnt the Social Studies units using flipped learning method performed significantly better than students who were taught same units of Social Studies using traditional teaching method. This is quite instructive to teachers of Social Studies, curriculum experts and the government.

Teachers of Social Studies may decide to give it full attention though it is capital intensive and time consuming in purchasing and using the compact disc, teaching and recording the lessons in it (disc) for students to watch and study at home before the normal class. The curriculum experts could see a way of infusing this idea of flipped classroom into the curriculum while the government who are interested in giving her citizens quality education may decided to encourage and motivate teachers through providing the gadgets and organizing seminars and workshops for teachers to effectively adopt this method in teaching students in other subject areas also. The present finding is in tandem with the findings of Fen (2017) who found in Europe that flipped learning enhances students' academic performance in Ophthalmology Clerkship and Hsiu-Tung (201) who also found that flipped classroom was very effective in teaching and learning of English Language.

The result also shows that there is no significant difference between mean achievement scores of the male and female students who were taught the same social studies units with flipped classroom method. This implies that gender has no significant effect on the achievement of students who were taught the same Social Studies contents. This is in line with the findings some earlier studies. Godspower & Ihenko (2017) and Adigun, Onihunwa, Irunohai, Sada & Adesina (2015) who found that gender has no significant influence on the academic performance of students in Integrated science and computer science respectively. The present finding also means that the flipped

classroom method is gender-friendly since there is no significant difference between the male and female students mean scores.

Conclusion

The study has shown that flipped classroom method is a very effective pedagogical method that enhances students understanding of what is being taught and hence their academic performance and gender has no influence on academic achievement of students who were taught Social Studies with flipped classroom method hence flipped classroom method should be given all the attention it deserves for its full implementation in our school system.

Recommendations

Based on the findings and their implications the following recommendations are made:

1. Teachers of Social Studies should start using flipped classroom method in teaching students.
2. Curriculum experts should try to introduce or incorporate it in the school system.
3. The government should organize seminars and workshops for teachers on flipped classrooms since it is a new area.
4. The government should make the fund available for teachers to use to implement this pedagogical approach in teaching their various subjects.

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