

Effect of collaborative teaching method on students' academic achievement in Business Studies in junior secondary schools in Edo State, Nigeria

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Abstract

This study investigated effect of collaborative teaching method on students' academic achievement in Business Studies in Junior Secondary Schools in Edo State, Nigeria. Two research questions were raised, and two hypotheses were tested at 0.05 level of significance. Quasi-experimental research design of non-randomized pre-test, post-test was employed. The population of the study was 182 Business Studies students in Junior Secondary Schools in Oredo Local Government Area of Edo State. The study sample was made up of 160 intact group classes of Junior Secondary School (J.S.S 2) students. A multi-stage sampling technique was employed. The instrument for data collection was 50 multiple choice items Business Studies Achievement Test for both pre-test and post-test. The reliability of the study was determine using test re-test method which gave a coefficient value of 0.78. The result of the pre-test and post-test were analyzed using Mean, Standard Deviation, ANCOVA and independent t-test. The findings revealed that there was a significance difference between the mean academic achievement scores of students exposed to collaborative teaching and those exposed to lecture method. There was also a significance difference between the mean academic achievement scores of male and female students in Business Studies. It was concluded that the collaborative teaching method produce better academic achievement in Business Studies than lecture teaching method. It was recommended among others that collaborative teaching method should be used as a method of teaching in business studies classes in Junior Secondary School since it leads to exchange of ideas and better understanding among students.

Key Words: Collaborative teaching, academic achievement, business studies, junior secondary schools.

Introduction

Business Studies is one of the prevocational subjects offered at the Junior Secondary level of education in Nigeria. The pre-vocational subjects which include Agriculture, Home Economics, Computer Education, Fine Art, Music and Business Studies form part of the curriculum of the junior secondary school. Business studies is taught as one of the basic subjects that will enable students acquire further knowledge, skills and attitude which are common and fundamental to all personal and occupational activities. The subjects enable students at Junior Secondary School (JSS) level to be exposed to various opportunities available in the world of work, and create an awareness about occupational areas to enable

them to be entrepreneurially and skilfully oriented. It also enhances the need for school continuity at the senior secondary level and beyond in related subjects or fields of studies.

Business Studies is expository and practical in nature, therefore enables students to discover those skills and potentials that help individuals to directly enter into the world of work and life-long education. The curriculum is wide and rich in various subjects and students are expected to cover all the various subjects for them to possess such skills. The JSS business studies curriculum, (Federal Ministry of Education, 2007), has the following objectives;

1. To provide basic business skills for personal use both now and in the future
2. To prepare students for further training in business studies
3. To relate knowledge and skills to national economy
4. To develop basic skills in office practice
5. To provide the opportunity and basic skills for which to start an occupation for those who may not have the opportunity to further their training beyond JSS.

These objectives properly fit into the National Policy on Education which emphasizes the acquisition of appropriate skills and the development of mental, physical and social abilities and competencies as equipment for the individual to live in and contribute to the development of the society (Federal Republic of Nigeria, 2004).

Towards the realization of these objectives, adequate teaching methods must be put in place for teaching and learning, so that optimum students' academic achievement can be guaranteed. In other words, educators must be in constant search for teaching and learning approaches and techniques that can improve their practice, encourage learners to participate actively in the learning process and adapt more perfectly to peculiar classroom situations. This could be geared towards improving learning outcomes and meeting the societal and industrial needs. Teaching methods have been seen as being efficacious in teaching and learning and they increase students achievement and attitude towards business subjects. Furthermore, conventional methods commonly used (e.g. lecture method) are often utilised by business studies teachers in implementing business studies curriculum in the junior secondary schools, in the hope that they would cover most students scheme of work.

According to Cantrell (2004) conventional methods of teaching such as lecture, traditional demonstration, discussion, guest speaker, panel discussion, case study, role play, story-telling, dramatization, and reading of textbooks, manuals or hand-outs sometimes referred to as "talk and chalk" methods are widely used in schools, and are usually content driven and certainly not learner centred. These methods are predominantly used for teaching in JSS which place emphasis on transmission of knowledge from the teacher to passive students and encourage rote memorization of facts (Norbert, John, & Otmar, 2009). The conventional method seems not to give the students the room to develop ideas and experience themselves, this is because the transmission of knowledge emanate from just the teacher alone, consequently limit the student horizon on the subject matter (Ahmed, 2013).

The lecture method involves a formal discourse or exposition on a subject matter to attain a stated instructional objective, the teacher does the talking while the learners listen and occasionally take notes (Ukoha & Eneogwe, 1996). Okoro (1999) asserted that in lecture method, the teacher or some other knowledgeable person supplies information to the students. According to Aguele (1997), the lecture method is a traditional method of teaching in which knowledge flows from the teacher to the students. In a similar vein, Awotua-Efebo (2003) explained that lecture method is a teaching method whereby the teacher transmits information (subject matter, content) verbally to the students. Research carried out by Imhanlahimi and Aluede (1997) reported a superiority of lecture method to discovery method (which is student-centred, like Collaborative learning) as students who were taught with the former performed better in biology than those taught with the latter. Aguele (1993) reported that guided discovery method is more effective than lecture method as the students taught with the former performed better in mathematics than those taught in the later. Iyamu (1996) opined that lecture method is a teaching and

learning situation in which the teacher plays dominant role in producing and presenting the knowledge for the students to learn passively. This approach to Iyamu has been condemned by educators (Uwameiye & Aduwa-Ogiebgean, 2006; Imhanlahimi & Aluede, 1997) as it makes the learners inactive, uncreative, gullible and narrow-minded.

Lecture method being one of the conventional teaching method present the teacher as the sole authority and this to a large extent makes it impossible for students to participate and contribute to learning process in business studies (Garrett, 2008). This situation, is however, in contrast with collaborative teaching method which require less talk on the part of the teacher and more activities on the part of the students.

Consequently, for optimum academic achievement to be actualised in Business Studies, students need to constantly share ideals, experience and understanding through an interactive approach to foster the teaching and learning of business studies. Therefore, there is need to shift focus to collaborative teaching which welcome social interdependencies among business studies students in the JSS. Collaborative teaching is a system of instruction in which the students come together to share common ideas and understanding with little intervention or guidance of the teacher. It is therefore a mutual engagement of students in a coordinated effort to solve a problem together (Dillenbourg, 1999). Collaborative teaching is a situation in which two or more persons learn or attempt to learning something together. It is based on the model that knowledge can be created within a population where members actively interact by sharing experience and ideas. It is therefore a method of instruction where students of the same class and age bracket exchange ideals in order to foster learning.

The social interdependence theory propounded by Koffta (1922) contribute to the success of collaborative learning. The main argument of this theory is that interaction with people is essential for survival. In the educational setting, social interdependence refers to students' effort to achieve develop positive relationships, adjust psychologically and show social competence. The social interdependence perspective of collaborative learning presupposes that the way social interaction is structured determines the way persons (students) interact with each other. This implies that groups are dynamics wholes in which the interdependence among members could vary and outcomes are consequence of interaction among persons.

The relevance of this theory to this study therefore is that, effective and efficient teaching can be realize through a collaborative learning method which is most desirous especially in a subject like Business Studies that is compartmentalized and highly specialized to the extent that no one Business Studies teacher can effectively and efficiently handle all the components that makes up the subject. The application of this theory will therefore help to facilitate the extent to which students interact with their peers at more advanced cooperative level in Business Studies. Under this view, knowledge is not something that is handed down from the teacher to the student; rather, knowledge is constructed through interactions among collaborators.

Collaborative teaching therefore, provides a non-judgement acceptance, care and support opportunities to give and receive from others and creates a non-competitive, but empowering environment. It introduces the much balance between cooperation and competition in the socialization process of students. According to Slavin (1992), collaborative learning refers to instructional method in which students of all levels of performance work together in small groups towards a goal. Gokhala (1995) also see it as an instructional technique in which students work in groups towards a common goal, and rewards depends on not on 'doing better than someone else' but on 'doing well with someone else'. Van Boxtel, Van der Linden and Kanselaar (2000) explain, collaborative learning activities allow students to provide explanations of their understanding, which can help students elaborate and reorganize their knowledge. Slavin (1992) found that 63 percent of the collaborative learning groups analyzed had an increase in achievement. The research carried out by Obomanu, Nwanekzie and Ekineh (2014) revealed that students taught ecology concepts using the collaborative teaching strategy performed significantly better than those taught using guided inquiry strategy. Jonson and Johnson (1993) summarized the goal and spirit of cooperative student-student interaction as follows:

Collaborative efforts result in participants striving for mutual benefit so that all group members benefit from each other's efforts (your success benefits me and my success benefits you), recognizing that all group members share a common fate (we all sink or swim through together) recognizing that one's performance is mutually caused by oneself and one's colleagues (we cannot do it without you), and feeling for achievement (you got an A, that is terrific.) In collaborative learning situations, there is a positive interdependence among students' goal attainments; students perceive that they can reach their learning goals if and only if other students in learning group also reach goals (p.138).

Khan and Ahmad's (2014) study also revealed that cooperative method was more effective instructional paradigm for English as compared to the traditional method of teaching. Adeola's (2004) findings revealed that students exposed to peer tutoring method performed significantly better than those exposed to conventional or traditional method. Another study conducted by Kerlinger as cited in Ojikutu (2005) showed a pattern of achievement result in mathematics which indicated that girls were more successful than boys in Belgium, Thailand, Finland and Hungary but least so in France, Nigeria, Israel and Netherlands. Research carried out by Webb (1991) found significant differences in the collaborative learning experience of boys and girls. Boys were more likely than girls to give and receive elaborated explanations, and their explanations were more likely to be accepted by group mates than girl's explanation. From the foregoing, it is obvious that students' academic achievement in Business Studies may not be actualised in the conventional methods of teaching. To this end, students' academic achievement through the use of collaborative teaching can be predicted on the amount and quality experience and knowledge acquired overtime through the exchange of ideals, interactive discussion and interpersonal relation among group member.

The annual reports of the Chief Examiner in Business Studies indicated that students' performance in Junior Secondary School Certificate Examination in Business Studies remain very low (NECO Chief Examiner's Report, 2008). Before then studies by Adeboye (2002) also reported students' poor performance in Business Studies which give supporting evidence to the assertion by NECO Chief Examiner. The methods employed by educators seem inadequate for equipping business students because the teacher is seen as sole authority in the teaching and learning process which makes the students passive and not active learner. More so, under the prevalent method of teaching, the students lack structured group interaction and exchange of ideas among them, thereby affecting their academic achievement in business studies. Adeboye (2002) concludes that teaching approach used by teacher coupled with lack of understanding of the subject ultimately affect students' performance in business studies.

Apart from inadequate teaching and learning resources of business studies, political instability, insufficient fund among others, teaching method employed by teacher also prove to be a major factor affecting student's academic achievement. Nwogu (2011) discovered that there is high rate of students' poor performance in Business Studies. In the face of glaring evidence that students' academic achievement in business studies is influenced by the teaching methods applied by teachers, a new approach such as collaborative teaching may be suggested and tried if it would yield a better result. Therefore, the main purpose of this study was to determine the effect of collaborative teaching method on the students' academic achievement in Business Studies in Junior Secondary Schools in Edo State.

Research Questions

The study was guided by the following research questions:

1. What is the mean difference between the academic achievement scores of students exposed to collaborative teaching and those exposed to lecture teaching method in business studies?
2. What is the mean difference between the academic achievement scores of male and female students exposed to collaborative teaching in business studies?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

- Ho1: There is no statically significant difference between the mean academic achievement scores of students exposed to collaborative teaching and those exposed to lecture teaching method in Business Studies.
- H1.: There is a statically significant difference between the mean academic achievement scores of students exposed to collaborative teaching and those exposed to lecture teaching method in Business Studies.
- Ho2.:There is no statically significant difference between the mean academic achievement scores of male and female students exposed to collaborative teaching in Business Studies.
- H2.:There is a statically significant difference between the mean academic achievement scores of male and female students exposed to collaborative teaching in Business Studies.

Methodology

The researchers employed a pre-test, post-test non-equivalent control group quasi-experimental research design. It is a non-equivalent control group quasi-experimental design because intact classes were used for different experimental treatments and control groups. According to Gall, Gall and Borg (2007), quasi-experimental design involves non-randomization experimental studies in which two groups are studied with one group receiving new treatment while the other receives the usual treatment or none. The pre-test post-test indicate that both groups were tested before treatment was administered. This is however suitable because this study administered new treatment (collaborative learning) to a group, while the other group was taught with the conventional methods. Both groups were pre-tested and then post-tested. This design is illustrated symbolically as follows:

Group	Pre-test	Treatment	Post-test
Experimental	O1	X1	O2

Control	O1	X2	O2

Where: C represents control group (those taught with conventional method)
E represent experimental group (those taught with collaborative learning method).

O1 represents pre-test observation for the two groups

O2 represents post-test observation for the two groups

X2 represents the usual treatment (conventional methods)

X1 represents new treatment (collaborative method)

----- indicates that experimental groups and control group were not formed randomly (meaning that they were intact classes).

The population of the study was 130,748 Business Studies students in Oredo Local Government Area of Edo State. The target population is all the Business Studies Students in JSS in Nigeria. The accessible population, which represents the sample size of this study consisted of 160 students in intact group classes of second year Junior Secondary School (J.S.S), selected from four schools comprising two schools each from public and private schools. Forty students each from the public and private schools formed the experimental group while 40 students each from the public and private school formed the control group, this gave a total of 160 students used for the study. A multi stage sampling technique (stratified random sampling, convenience sampling and purposive sampling techniques) was employed to arrive at the sample size of the study. The instrument that was used for this study was a 50 item multiple choice achievement test titled Business Studies Achievement Test (B.S.A.T). The reliability of the study was determine using test re-test method and a correlation coefficient of

0.78 was obtained. The data collected from the B.S.A.T were analysed using Mean (\bar{x}), Standard Deviation (SD), Analysis of Co-Variance (ANCOVA) and two sample independent t-test.

Findings

Data Presentation, Analysis and Discussion

Research Question 1

What is the mean difference between the academic achievement scores of students exposed to collaborative teaching and those exposed to lecture teaching method in business studies?

Table 1: Mean and Standard Deviation Scores of Students Taught with Collaborative Teaching and those Taught with Lecture Method

<i>Group</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Mean Difference</i>
Control	80	25.20	5.644	5.64
Experimental	80	30.84	4.804	
Total	160	28.02	5.940	

Note. Field Work. (2018) SD (Standard Deviation)

Data in Table 1 show the mean academic achievement of students who were taught Business Studies with collaborative teaching method and lecture method. The data presented show that the control group taught Business Studies with lecture method had a mean score of 25.20 and a standard deviation of 5.644 while the experimental group taught with collaborative teaching had a mean score of 30.84 and a standard deviation of 4.804. The mean difference in the performance between the two groups is 5.64. With these results, the experimental group performed better than the control group. The implication therefore is that collaborative teaching method had positive effect than the lecture method of teaching as a result of marginal increase in the mean score of collaborative teaching method over the lecture method of teaching Business Studies.

Research Question 2

What is the mean difference between the academic achievement scores of male and female students exposed to collaborative teaching in business studies?

Table 2: Mean and Standard Deviation Scores of Male and Female Students Taught Using Collaborative Teaching Method

<i>Gender</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Mean Difference</i>
Male	40	31.30	4.328	0.92
Female	40	30.38	5.251	

Note. Field Work. (2018) SD (Standard Deviation)

Data in Table 2 show the gender academic achievement scores of students taught with collaborative method in business studies. The data show the mean score of 31.30 and a standard deviation of 4.328 for male subjects while the mean score of 30.38 and a standard deviation of 5.251 for the female counterparts in the experimental group. The difference in the mean gain of male and female subjects in the experimental group is 0.92 in favour of the males. With these results, the male students perform better than the female students. The implication is that collaborative teaching method had positive effects on male students as compared to female students as a result of marginal increase in the mean score of male students over the female students exposed to collaborative teaching method in business studies.

Hypothesis 1

There is no statically significant difference between the mean academic achievement scores of students exposed to collaborative teaching and those exposed to lecture teaching method in Business Studies.

Table 3: Analysis of Covariance (ANCOVA) for Difference in Performance of Business Studies Students based on Method of Teaching

<i>Source</i>	<i>Type III Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Corrected Model	1542.029 ^a	2	771.015	29.750	.000
Intercept	4265.684	1	4265.684	164.592	.000
Pretest	270.773	1	270.773	10.448	.001
Group	360.608	1	360.608	13.914	.000
Error	4068.914	157	25.917		
Total	131219.000	160			
Corrected Total	5610.944	159			

a. R Squared = .275 (Adjusted R Squared = .266)

Note. P-Value Significant at 0.05 level (2-tailed) (Reject Hypothesis)Field Work. (2018)

The data presented in Table 3 show that the F-value for the effect of collaborative teaching on student's academic achievement is 13.914 with a significance of .000, which is lower than the 0.05 level at which it is tested. The results in Table 3 show that the achievement scores of Business Studies students taught with collaborative teaching were significantly different from and higher than those of the students taught with the lecture teaching method. Therefore, the null hypothesis which states that there is no statically significant difference between the mean academic achievement scores of students exposed to collaborative teaching and those exposed to lecture teaching method in Business Studies is rejected. Consequently, there is a statically significant difference between the collaborative teaching method and lecture teaching method in the academic achievement of Business Studies students.

Hypothesis 2

There is no statically significant difference between the mean academic achievement scores of male and female students exposed to collaborative teaching method in Business Studies.

Table 4 :t-test Showing Difference between Male and Female Students Taught Business Studies Using Collaborative Teaching Method

<i>Gender</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>df</i>	<i>t-val</i>	<i>p-val</i>	<i>Decision</i>
Male	40	31.30	4.328	78	.860	.393	NS
Female	40	30.38	5.251				

Note. P-Value Not Significant (NS) at 0.05 level (2-tailed) (Retain Hypothesis) Field Work. (2018)

Data in Table 4 show the difference between mean academic achievement of male and female students taught Business Studies using collaborative teaching method. The data reveal a male mean score of 31.30 and a female mean score of 30.38 with a degree of freedom of 78 and a calculated t-val of 0.860. The t-value is not significant at p-value of 0.393, because it is greater than alpha value of 0.05. Therefore the null hypotheses which states

that there is no statically significant difference between the mean academic achievement scores of male and female students exposed to collaborative teaching in Business Studies is therefore accepted. Consequently, there is no statically significant difference between male and female mean academic achievement of students taught Business Studies using collaborative teaching method.

Discussion of Findings

The findings from Research Question 1, revealed that students that are exposed to collaborative teaching method had a better mean difference compared to those exposed to lecture method. This implies that collaborative teaching method has positive effect on mean academic achievement of business studies students in junior secondary schools in Edo State. This is in line with the findings of Khan and Ahmad (2014) who reported that mean score of cooperative teaching method was higher than the mean score of the traditional teaching method. That is, the mean score was in favour of experimental group. This fact is however at variance with the findings of Imhanlanhimi and Aluede (1997) who reported that students in the experimental group were outscored by students in the traditional expository method.

The findings of Research Question 2, showed that the male students performed better than the female students exposed to collaborative teaching method. This is in line with the findings of Webb (1991) who found out that boys had a better mean score compared to girls. As a result, boys were more likely than girls to give and receive elaborated explanations, and their explanations were more likely to be accepted by group mates than girls' explanation.

The findings of the study with regards to Hypothesis 1 revealed that there is a significant difference in students' academic achievement in business studies as a result of the collaborative teaching method used in teaching the students. This finding of the present study is consistent with the findings of similar experimental studies by Obomanu, Nwanekzie and Ekineh (2014), Khan and Ahmad (2014), Uwamaeiye and Aduwa-Ogiebgean (2006), Adeola (2004), respectively where the experimental treatment (collaborative teaching method) produced greater student achievement than the control treatment (lecture teaching method).

After testing for Hypothesis 2, the findings of the study showed there is no significant difference between male and female mean academic achievement of students taught business studies using collaborative teaching method. The findings of this present study is however in line with the findings of Uwamaeiye and Aduwa-Ogieben (2006), Ojikutu, (2005), Adeola (2004) who also reported that there is no significant difference in the academic achievement in pre-vocational subjects and sciences in both male and female students.

Conclusions

It was concluded that collaborative teaching enhance better students' academic achievement in Business Studies as compared to lecture teaching method. Despite efforts being made to stimulate the intellectual skill and personal growth of the students, the major cause of the poor performance in Business Studies could be attributed mainly to traditional instructional strategies employed by teachers. This study lends empirical support to the fact that performance of students in Business Studies could be greatly improved if they are exposed to collaborative teaching method. The collaborative teaching method facilitates Business Studies students' academic achievement more than individualized teaching method. It should be noted that from the findings that gender does not affect students' academic achievement. The decline in Business Studies students' academic achievement is likely to persist except corrective measures (collaborative teaching) is taken immediately so as to avoid stating objectives that cannot be actualized. To this end, the findings of this study provide empirical support for beliefs about the greater effectiveness of active collaborative teaching method compared with more traditional approaches which to a large extent, help Business Studies teachers to have other better options in the teaching and learning of Business Studies.

Recommendations

Based on the findings of the study, the following recommendations are considered imperative:

1. Collaborative teaching method should be used as a method of teaching in Business Studies classroom in Junior Secondary Schools. That is, students should be paired into groups so that they will be able to exchange ideas and understand.
2. Government should ensure that Business Studies teachers who lack the knowledge and competence for group learning is equipped with the necessary skills and knowledge. Business Studies teachers should be encouraged through in-service training, seminars, workshops, conferences and other forms of training on-the-job to employ collaborative teaching method. This is because collaborative method were found to be superior to lecture teaching method which is commonly and currently in use in Junior Secondary Schools in Nigeria.
3. Adequate conducive environment should be made available by school management for positive class interaction between male and female students in order to avoid gender disparity in the academic achievement of students in business studies.
4. There is need for the developers of curriculum materials, for instance students' textbooks and associated teachers' guide in Business Studies to incorporate the use of collaborative method in the teaching and learning process during Business Studies lessons. The text materials should contain details of how collaborative teaching could be integrated into the teaching of Business Studies at the Junior Secondary School level.

Implications of the finding

The findings of this study will have a significant impact on business studies teachers, students, curriculum planners and government at all levels.

The implication of the findings to Business Studies teachers is that, if collaborative teaching is adopted as a method of teaching business studies, it will help to remove the burden of seeing teacher as the only repository of knowledge; thereby promoting critical thinking skill among the students for increased academic achievement. This will, in turn, add value to the education system of Nigeria specifically, and benefit the society at large.

Additionally, the implication of the findings of this study to students is that it will help reduce the psychological stress associated with learning. The students' active involvement in the teaching and learning process is expected to make them acquire academic skills, develop social behaviours and enhance peer relations. As such, slow learners' attitude towards learning business studies will positively increase.

To curriculum planners, the implication of the findings is that it will bring to their awareness the need to implement policies that will recognise other methodologies of teaching business studies, and perhaps incorporate such method in the curriculum so as to ensure robust teaching and learning of the subject.

Finally, the study has a significant implication in the theoretical background of collaborative learning in that it has extended the existing literature on collaborative learning in the context of business education and junior secondary school students in Nigeria.

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