

COLLABORATIVE LEARNING METHOD: EFFECTS OF ABILITY LEVELS AND SCHOOL-TYPE ON THE JUNIOR SECONDARY STUDENTS' BUSINESS STUDIES ACHIEVEMENT IN EDO STATE

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Abstract

This study investigated collaborative learning method: effects of ability levels and school-type on the junior secondary students' business studies achievement 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 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 11 (J.S.2) students. A multi-stage sampling technique was employed. The instrument for data collection was 50 items multiple choice use in Business Studies. The reliability of the instrument was determine using test re-test method which gave a coefficient value of 0.78. The data collected were analyzed using Mean, Standard Deviation, ANCOVA and independent t-test. The findings revealed that there was a significant difference in the mean academic achievement scores based on the ability level of the students exposed to collaborative teaching method, which occurred between the high and low ability level students. There was no significant difference between the mean academic achievement scores of students in public and private schools exposed to collaborative teaching in Business Studies. It was concluded that that private school students performed better than the public school students when exposed to collaborative learning. It was recommended among others that collaborative learning method should be used as a method of teaching Business Studies in Junior Secondary Schools since it leads to exchange of ideas and better understanding among students.

Keywords: Collaborative learning, Academic Achievement, Business Studies, Public and Private Schools.

Introduction

In a developing country like Nigeria, the importance of Business Studies cannot be overemphasized. This is because, it helps to ensure continuous availability of students in expected number who take important Business Studies related advanced careers such as Accounting, Economics, Office Management, Marketing, Insurance, Banking and so on. Business Studi is one of the prevocational subjects offered at the Junior Secondary level of education in Nigeria. It is a subject which is expected to expose the students to general business knowledge and to have basic idea about business. Its components include shorthand, typewriting, office practice, and bookkeeping, which are taught as separate subjects with emphasis on practical skill acquisition or training. According to Adeoye and Igbiniedion (2018) 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. They further emphasized that, 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 as the objectives; to provide basic business skills for personal use both now and in the future, to prepare students for further training in Business Studies, to relate knowledge and skills to national economy, to develop basic skills in office practice and 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 fit properly into the National Policy on Education which recommends student activity-based mode of teaching method for 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 attainment of these objectives, appropriate methods of teaching must be put in place for effective and efficient learning process, so that optimal students' academic achievement can be guaranteed. According to Oyediji (1998), teaching methods were described as specific instructional devices employed by a teacher to teach their lessons. Uwameiye (1990) and Oyinloye (1993) suggested that the method or approach used by teachers in presenting their lessons is very important because it can make the learners like or dislike their subjects. Awotoa-Efebo (2003) stated that the mediocre teacher tells, the good teacher explains, the superior teacher demonstrates and the great teacher inspires. Therefore, Business Studies teachers must be in endless pursuit of appropriate teaching and learning methodologies and techniques that can enhance their practice, stimulate learners interest, inspire learners to engage vigorously in the learning process and adapt more perfectly to a certain classroom situations.

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 often referred to as "talk and chalk" methods are usually employed in teaching and learning process in schools. These conventional methods are usually content oriented and certainly not learner focused. They are primarily employed for teaching in the JSS which lay emphasis on transmission of knowledge from the teacher to passive students and encourage rote memorization of facts (Norbert, John, & Otmar, 2009). The conventional methods appear not to provide opportunities for active learning and meaningful communication among learners, this is subject to the fact that the transmission of knowledge originate from the teacher alone, consequently limiting the critical and creative thinking skills of the students (Ahmed, 2013; Olatoye, Aderogba & Aanu, 2011). The conventional method that is commonly used by Business Studies teachers in implementing the Business Studies curriculum in the JSS is the lecture method. The lecture teaching method is probably one of the oldest methods of teaching (Noel, 2015). According to Aruna and Thenmozhi (2014), the lecture method is a traditional method of teaching in which knowledge flows from the teacher to the students. The teacher conducts him or herself as the custodian of knowledge which he or she dishes out in form of ideas, opinions, and information and backs them up with citations of reputable authors. It is characterized by teacher dominance and little or no pupil participation (Esmaeili, Mohamadrezai & Mohamadrezai, 2015).

According Wood and Gentile (2003) it is now being recognized that there are better ways to learn than through the lecture method of learning. It has become important to seek strategies that will employ approaches that ensure and enhance better academic performance of the students in Business Studies. Interestingly, in education today, there are modern methods that enable students to have an active control over their own learning and also enhance academic achievement (Olatoye, 2008). One of these modern method of teaching is Collaborative learning method. 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 method of instruction where students of the same class and age bracket exchange ideas in order to foster learning. Collaborative learning method is a mutual engagement of students in a coordinated effort to solve a problem together (Zhang & Meng, 2016). The theory of this study is hinged on social interdependence theory propounded by Koffka (1922) 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 dynamic 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 realized through a collaborative learning method which is most desirable 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.

Laal and Laal (2012) see collaborative learning as an instructional technique in which students work in groups towards a common goal, and rewards depend not on 'doing better than someone else' but on 'doing well with someone else'. Van Boxtel, Van der Linden and Kanselaar (2000) explain that collaborative learning activities allow students to provide explanations of their understanding, which can help students elaborate and reorganize their knowledge.

Collaborative learning teams are therefore said to attain higher level thinking and preserve information for longer times than students working individually. Students tend to have different ability levels (ability level can also connote level of achievement). Ability grouping simply put is the practice of dividing students for instruction on the basis of their perceived capacities for learning. It is the practice of placing students of similar academic ability in the same group for instruction. It can be categorized into three, namely high ability level (high Achievers), average ability level (average Achievers) and low ability level (low Achievers). Research by Kempa and Dube (1974) and Roberts (1995) reported that the achievements of low ability students have been found to be lowest while that of high ability students was the highest. Research carried out by Adodo and Agbayewa (2011) revealed that there is a significance difference between high ability, average and low ability level students. However, the research carried out by Adesoji (1998) reported that there was no significant difference in the performance of students in the three ability level groups after exposing them to the teacher-directed problem solving strategy. Furthermore, school-type in the contest of this study refers to public and private schools. In Nigeria, it is generally understood that private schools are better in terms of the availability of human and physical facilities and consequently students' performance than public schools (Alimi, Ehinola & Alabi, 2012). This position has contributed to parents enrolling their children in private secondary schools. It has been observed that most students who gained admission into tertiary institutions are mostly from private secondary schools. Therefore, Alewu, Nosiri & Ladan (2009) and Sunku, Hwan and Boyoung (2014) reported that private school students do better than the public school students. Research carried out by Igbinedion and Epumepu (2012) also indicate that there was significant

difference in academic performance in Business Studies between public and private schools. From the foregoing it is obvious that students' academic achievement in Business Studies may not be actualized using the conventional methods of teaching; to this end, students' academic achievement might be predicted based on the amount and quality of experience and knowledge acquired overtime through the exchange of ideas, interactive discussion and interpersonal relation among group members. Therefore, the main purpose of this study was to determine collaborative learning method: effects of ability levels and school-type on the junior secondary students' business studies achievement in Edo State.

Research Question 1

What are the mean differences in academic achievement of the students' scores based on the ability levels after being exposed to collaborative teaching method in Business Studies?

Research Question 2

What is the mean difference between the academic achievement scores of students in public and private schools exposed to collaborative learning in business studies?

Hypotheses

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

1. There is no significance difference in the mean academic achievement scores based on the ability level of students exposed to collaborative teaching method in business studies.
2. There is no significance difference between the mean academic achievement scores of students in public and private schools exposed to collaborative teaching in business studies.

Methodology

The researchers employed a one short case study or classical experimental research design. This design is however suitable because this study administered new treatment (collaborative learning) to a group (different ability levels, school-type). The groups were only post-tested and exposed to the new treatment. The population of the study comprised the Business Studies students in Oredo Local Government Area of Edo State. The sample size of this study consisted of 160 students in intact classes of Junior Secondary 11 (J.S. 11), selected from four schools - 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 instrument was determined 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 Variance (ANOVA) and two sample independent t-test.

Data Presentation, Analysis and Discussion

Research Question 1

What are the mean differences in academic achievement of the students' scores based on the ability levels after being exposed to collaborative teaching method in Business Studies?

Table 1

Descriptive data on influence of Ability Level on Students Exposed to Collaborative Learning Method

Ability Level	N	Mean	SD	Mean Differences
High	48	31.96	4.405	2.21
Average	20	29.75	5.067	1.58
Low	12	28.17	4.802	3.79
Total	80	30.84	4.804	

Table 1 shows the mean academic achievement scores based on the ability level of students exposed to collaborative learning method. The data presented shows that the high ability level students had a mean score of 31.96 and a standard deviation of 4.405, average ability level students had a mean score of 29.75 and a standard deviation of 5.067 while the low ability level students had a mean score of 28.17 and a standard deviation of 4.802. The mean differences in performance between the high ability level students and average ability students is 2.21, between high ability level students and low ability level students is 3.79 while that of average ability level students and low ability level students is 1.58. With these results, the above mean score showed that high ability level students had a superior mean difference over average and low ability level students. The implication therefore is that high ability level students had a marginal increase in the mean score over the average and low ability level students exposed to collaborative learning method in business studies.

Research Question 2

What is the mean difference between the academic achievement scores of students in public and private schools exposed to collaborative learning in business studies?

Table 2

Mean and Standard Deviation Scores of Public and Private School Taught Using Collaborative Learning Method

School Type	N	Mean	SD	Mean Difference
Private	40	32.28	4.443	2.88
Public	40	29.40	4.771	

Note. Field Work. (2019)

N (Sample Size), SD (Standard Deviation)

Table 4 shows the academic achievement scores of students taught collaborative learning method in business studies based on school type. The table shows the mean score of 32.28 and a standard deviation of 4.443 for private schools while the mean score of 29.40 and a standard deviation of 4.771 for the public schools in the experimental group. The difference in the mean gain between private and public schools in the experimental group is 2.88 in favour of the private schools. With these results, the above mean score showed that the private school perform better than the public school. The implication therefore is that collaborative learning method had positive effects in private schools compared to public schools as a result of marginal increase in the mean score of private schools over the public schools exposed to collaborative learning method in business studies.

Hypothesis 1

There is no significance difference in the mean academic achievement scores based on the ability levels of students exposed to collaborative learning method in business studies.

Table 3
ANOVA Showing Difference between Ability Level of Students Taught Business Studies using Collaborative Learning Method

Sources of Variance	SS	df	MS	F	Sig.	Decision
Between Groups	169.55	2	84.78	3.95	.023	Significant
Within Groups	1653.33	77	21.47			
Total	1822.89	79				

The data presented in Table 3 shows that the F-value for the effect of collaborative learning on student’s academic achievement is 3.95 with a significance of .023, which is lower than the 0.05 level at which it is tested. Table 3 shows that the ability level of students taught business studies using collaborative learning method was significant. Therefore, the null hypotheses which states that there is no significance difference in the mean academic achievement scores based on the ability levels of students exposed to collaborative learning method in business studies is not retained. Consequently, there is a significance difference in the mean academic achievement scores based on the ability level of students exposed to collaborative learning method in business studies. Thus post hoc test of multiple comparisons was carried in order to determine were the significance lies in the ability level.

Table 4
Post Hoc Test of Multiple Comparison

(I) Ability Level	(J) Ability Level	Mean Difference (I-J)	Sig.	Decision
High	Average	2.21	0.21	NS
	Low	3.79*	0.05	S
Average	High	-2.21	0.21	NS
	Low	1.58	0.65	NS
Low	High	-3.79*	0.05	S
	Average	-1.58	0.65	NS

Table 4 shows the post hoc comparison test between the groups based on ability level. The table shows that comparison of high ability level students and average ability level with a mean difference of 2.208, and a significance of 0.208 which is higher than the 0.05 level at which it is tested, this therefore indicate that there is no significant difference between high ability and average ability level students. Hence there was no superiority of one over the other. Also, there was no superiority between average ability level students and low ability level with a mean difference of 1.583, and a significance of 0.647 which is higher than the 0.05 level at which it is tested, this therefore indicate that there is no significant difference between average ability and low ability level students. But the paired comparison between high ability level and low ability level students showed a mean difference of 3.792, and a significance of 0.046 which is less than the 0.05 level at

which it is tested, this therefore indicate that there was a significant difference between high ability and low ability level students. This means students in high ability level were superior to the low ability level students. Consequently high ability level students performed significantly better than the low ability level students.

Hypothesis 2

There is no significance difference between the mean academic achievement scores of students in public and private schools exposed to collaborative teaching method in business studies.

Table 5

t-test Showing difference between Private and Public Schools Taught Business Studies Using Collaborative Learning Method

<i>School Type</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>df</i>	<i>t-cal</i>	<i>Decision</i>
Private	40	32.28	4.44	78	2.79	Significant
Public	40	29.40	4.77			

Table 5 shows the difference between mean academic achievement of private and public schools taught business studies using collaborative learning method. The table indicate private school mean score of 32.28 and public school mean score of 29.40 with a degree of freedom of 78 and a calculated t-cal of 2.79. The t-value is significant because it is less than alpha value of 0.05. Therefore the null hypotheses which states there is no significance difference between the mean academic achievement scores of students in public and private schools exposed to collaborative teaching method in business studies is not retained. Consequently, there is a significant difference between private and public mean academic achievement of students taught business studies using collaborative teaching method.

Discussion of Findings

The findings of research question 1, revealed that the mean academic difference between high and average ability level students and between average and low ability level students is low compared to high and low ability level students. This is in line with the findings of Kempa and Dube, (1974) and Roberts (1995) who reported that achievements of low ability students have been found to be lowest while that of high ability students was the highest.

The result of data analysis in research question 2, showed that the private school students perform better than the public school students exposed to collaborative learning method. This means that collaborative learning method in business studies is more effective in private school than the public school. This was supported by Alewu, Nosiri&Ladan (2009) and Sunku, Hwan and Boyoung (2014) who reported that private school students do better than the public school students.

The findings relating to hypothesis 1 indicated that there is a significant difference in the ability level of students exposed to collaborative learning method but the ability levels where the significance occurred was not known, as a result of this, post hoc comparison test was conducted. Although the findings revealed that there was significance but this significance did not occurred between the high and average ability level students, neither did it occurred between average and low ability level but occurred between the high and low ability level students which indicate that high ability level students are superior to low ability level students. This findings was in line with that of Adodo and Agbayewa (2011) who reported that there is a

significance difference between high ability, average ability and low ability level students. However, the findings of this study is at variance with that of Adesoji (2008) who reported that there was no significant difference in the performance of students in the three ability level groups in after exposing them to the teacher-directed problem solving strategy.

The findings of the study with regards to hypothesis 2 showed that there is a significance difference between private and public mean academic achievement of students taught business studies using collaborative learning method. This therefore indicates that private schools perform significantly better than public school taught business studies using collaborative learning method. The findings of this present study was however in line with the findings of Igbinedion and Epumepu (2012) reported that there was significant difference in academic achievement performance in business studies between public and privates schools.

Conclusions

Based on the findings of the study, it was concluded that collaborative learning is an indispensable method that promote better students' academic achievement in Business Studies as compared to lecture teaching method. In spite of efforts being made to stimulate the interest and creative thinking skills of the students, the major source of the poor performance in Business Studies could be ascribed mainly to conventional method of teaching used by teachers. It is eminent that from the findings that there is a significant difference in the ability level of students when exposed to collaborative learning method. The differences in the ability level is likely to persist except corrective measures (collaborative teaching) is taken immediately so as to avoid stating unattainable objectives. Similarly, the differences between the academic achievement of private and public school can be brought to bear using this method. To this end, better academic achievement of student in Business Studies can be guaranteed using collaborative learning method.

Recommendations

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

1. Teachers should focused on the slow learners using collaborative learning method so as improve their learning outcome as their counterparts.
2. Adequate conducive environment should be made available by the public school management for positive class interaction between the students in order to avoid disparity in the academic achievement of public and private school business studies students.

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 learning business studies, it will help to remove the burden of seeing teacher as the only repository of knowledge; thereby promoting critical and creative 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, fast, average and slow learners can positively complement each other.

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