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EXPLORING GENDER RELATION IN THE CONTEXT OF COLLABORATIVE LEARNING AND SELF EFFICACY OF SECONDARY SCHOOL STUDENTS

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ABSTRACT

This study examined the relationship among collaborative learning, self- efficacy and academic achievement of secondary school students based on gender. Two specific purposes, two research questions and two hypotheses guided the study. Correlational design was adopted for the study. The study was carried out at Obollo-Afor Education Zone of Enugu State. The population of the study consists of all the SS2 secondary school students in Obollo-Afor Education Zone. The number consists of five thousand and forty-five (5, 045) students (1, 974 males and 3, 071 females). The sample size of the study was 358 which consist of 198 female and 300 male students. A questionnaire with two sections was used for the study; the sections have 25 and 20 items respectively. In answering the research questions, mean and standard deviation were used, while Pearson Product Moment coefficient was used to test the hypothesis at 0.05 level of significance. The results indicated that there is a significant relationship between collaborative learning and academic achievement of students based on gender. The result equally indicated significant relationship between collaborative learning and self-efficacy based on gender.

KEYWORDS: Gender, Collaborative Learning, Self-Efficacy, Academic Achievement

INTRODUCTION

Different behaviours and abilities are expected from boys and girls based on the cultural norms in the society. According to Okeke (2001), gender refers to the social or cultural construct, characteristics, behaviours and roles which society ascribes to males and females. There has been the controversy over gender difference. While some maintained that gender may affect the academic performance of students others objected to this assertion. The difference might be as a result of the orientation given. According to Mboto and Bassey(2004), Due to the gender differences, the psychological and physiological make up of the child differs. Boys and girls are raised differently and this may affect their academic performance.

Onyemerenkeya (2002) stated that the interaction between the teacher and students, students and students in the school is a social support that contributes to students' self-efficacy which improves academic achievement. If the students' self-efficacy is high, the student is likely to achieve higher academically, but if the students' self-efficacy is low, there is the tendency that his academic achievement may equally be low. Going by this definition, gender has nothing to do with academic achievement; rather it is the self-efficacy that determines ones perception and perception.

Covington (2000) speculated that researches in the field of education and in particular in the role of self-efficacy on academic achievement has shown positive correlation with performance attainment. The most challenging task for any teacher is that of building positive attitude or self-efficacy in children. Since collaborative learning involves a learning

situation where students take turns in acting as tutors and tutees for instruction, it is therefore expected that collaborative learning would predict self-efficacy and thereby enhance academic achievements among secondary school students. This expectation comes from the belief that collaborative learning helps students to be better learners who are independent, active and confident.

Achievement according to Nwachukwu (2004) is doing something successfully, typically by effort, courage and skills, the art of achieving attainment or accomplishing a task. It is maintained that achievement is accomplishing whatever goals you set for yourself, which is doing what you want to do within the bounds of the law, overcoming obstacles and attaining a high standard. It is the pursuit of dreams without fear and unbelief. Achievement requires drive and single mindedness and it is about completing goals one has set for one self. Everybody wants to be achiever but the problem is how to go about it.

In the educational system, a poor or under achiever is some whose performance is consistently below average (George, 2008). Pandey (2008) defined academic achievement as the performance of the students in the subjects they study in the school. Academic achievement determines the students' status in the class. It gives children an opportunity to develop their talents, improve their grades and prepare for the future academic challenges. Students with high academic achievement are considered to achieve their identity in the society, get good career opportunity, get acceptance from peers, parents and teachers, and enhance their self-confidence and self-efficacy. In today's competitive world, academic achievement is considered as one of the criteria to judge one's total potentialities and capabilities. A child with high academic achievement is likely to be rated as capable of excelling in his/her career, where as academic failure leads to frustration, stress, inferiority complex, rejection by loved ones and corruption. Academic achievement in this study is the outcome of education through persistent learning in a group.

Poor academic achievement sometimes may be linked with the students' self-efficacy. Aremu and Sokan (2003) identified some factors that could bring about poor academic achievement such as; motivational orientation, self-efficacy, emotional problems, teaching styles, study habit and poor inter personal relationship. If the student's self-efficacy is high, the student is likely to achieve higher academically, but when the student's self-efficacy is low, there is the probability that his or her academic achievement may equally be low.

Iroegbu (1997) is of the opinion that teachers who are well disposed towards their students and show warmth, enthusiasm and concern in their interactions with the students are more likely to be perceived by students as encouraging collaborative learning than teachers who do not show these qualities. This goes to show that proper interactions among teachers and students and students among students make the learner to be confident thereby enhancing academic achievement. Collaborative learning is a situation in which two or more people learn or attempt to learn something together (Dillenbourg, 2009). Collaborative learning is a variety of approaches in education that involves joint efforts by students or students and teachers. This is commonly illustrated when group of students work together to search for understanding.

Generally, learning is seen as a change in behaviour. This change could be temporary or relatively permanent in native that are acquired through experience. For Ramalingam (2006) learning is a relatively permanent modification of behaviour resulting from experience or practice. Learning may take place without remembering, as normally occurs in the acquiring of motor skill. If this is so then it is relevant to device means of helping learners to retain and recall what they had already learnt. According to Onyemerenkeya (2002), any learning strategy that involves interaction between teachers

and students or students and students, improves students self-efficacy beliefs. Collaborative learning which is interactive in nature may no doubt improve students' self- efficacy as well as their academic achievement because students with high self-efficacy are bound to get over any academic task they are faced with (Turk and Monarch, 2002). Unlike individual learning, people who engage in collaborative learning capitalize on one another's resources and skills, asking one another for information, evaluating one another's ideas, and monitoring one another's work (Chiu, 2002). As a result, no one fails easily and it could help both the self-efficacy and academic achievement of students.

Theoretical Framework

McClelland (1961) developed a theory and maintained that individuals acquire the need to achieve success during the course of development, and the desire to achieve success varies among individuals. Such individuals set challenging goals for themselves, assume personal responsibility for goal accomplishment, are highly persistent in the pursuit of these goals, take calculated risks to achieve the goals and actively collect and use information for purposes of feedback. Atkinson (1964) confirmed that some people are success oriented while others are concerned about failure. Success oriented people often set goals within their capabilities and therefore succeeds often. The theorist believes that achievement of success depends on the probability to achieve and the desire to achieve.

According to the theory, people with high achievement tend to set goals of moderate difficulty. They pursue goals that are challenging yet attainable with hard work ability and persistence. On the other hand, people with low aspiration for achievement are not willing to take chances when it comes to testing their own skills and abilities. The theorist is of the view that individuals with high academic achievement see their success as a result of their own efforts and capabilities. They do not attribute it to influence of other people or out of luck, but when individuals with low aspiration failed to attain to their goal, they attribute it to lack of ability. Teachers as well as parents may likely have children with high achievement if they allow them to take up responsibilities on their own. This may improve their self-efficacy and academic achievement, and also improve their learning abilities in school.

Theoretically, Bandura's social learning theory which held that students can learn through observing and imitating a model. This was used to show that students need to work in small groups irrespective of gender (male or female), as it helps to improve both self-efficacy and academic achievements of students. This is realized as they take turns to teach and be taught. Practically, the results of this study will be of use to students because, after learning in small groups, students build themselves with positive self-efficacy as they take turns in acting as tutors and tutees for instructions thereby enhancing academic achievement among them. The study will enable the students to realize that through collaborative learning, their self-efficacy and academic achievements are influenced.

Review of Related Studies

Pandey (2008) in his study observed relationship of academic achievement with parental education. The study was conducted on 92 higher secondary pupils of Mizo tribe. Self-prepared information form for parental background and the marks obtained by the pupils in the half yearly examination from official record for achievement scores were used. Four research questions using mean and standard deviation to answer them, and four null hypotheses using t-test guided the study. The result revealed that academic achievements of pupils were not affected by educational level of parents as the result was not significant. Parental education involves interaction, imitation and modeling just like

collaborative learning. Therefore, there may be relationship between academic achievement and collaborative learning in this study based on gender.

Gill and Sidhu (1998) carried out a study on academic achievement among the children belonging to different socio-economic groups in rural Punjab. The sample consists of 80 pupils studying in the 9th class. On the Lasis of the information collected from the pupils, the subjects were divided into their socio-economic groups, that is, service men, agriculturalists and labourers. The total mark obtained in the 8th standard verbal intelligence scores and non-verbal intelligence scores were taken. Three research questions and three null hypotheses guided the study. Mean and standard deviation were used to answer the research questions while t-test was used in testing the hypotheses. The result showed that highest marks were obtained in the service group, followed by agriculturalists and then the labourers' class. Hence, the results showed that occupation of parents influence the school performance of their children.

Parental and group relationship behaviour was assessed with the help of parent adolescent behaviour measure developed by Khan and Jemberu (2002), and academic achievement was assessed by their previous year's grades. The result revealed that maternal support was significantly related to academic achievement for African American youth and maternal behavioural control and psychological control were significantly related to academic achievement for European American youth. This goes to show that collaborative effort can go a long way in promoting academic achievement of male and female students since maternal behavioural control significantly relates to academic achievement of female students in some areas.

Graybill (2000) study on gender related difference of adolescents in problem-solving ability. The purpose of his study was to determine gender differences in the transition from concrete to formal operational stage, and that boys would become successful than girls in solving selected science problems. The subjects included for study were pairs of 9, 11, 13, and 15 years old boys and girls. Each subject was interviewed on each of the four problems selected: equal angle, floating bodies, rod and chemical combination. Interviews were recorded on tape for later analysis. A spearman rank order correlation test was used to compare the ratings of each subject. The result shows that girls differ from boys in point at which they develop logical thinking abilities and that boys scored better than girls on every experiment at each level except for the chemical combination results in 9 years old formal group.

Mboto and Bassey (2004) in their study on attitude and gender in science, technology and mathematics (STM) students' performance investigated the influence of attitude and gender with respect to performance in science, technology and mathematics (STM). The population of the study was senior secondary school two (SS 11) students of physics, chemistry and mathematics. Out of the total of 300 students from the eight secondary schools in the area, 240 students were used for the study (110 boys and 130 girls). Random sampling technique was used to obtain the sample. A face validated attitude 15 items inventory scales was used to classify the subject with respect to positive and negative attitudes. Similarly, carefully prepared lesson plans were used to teach specific science, technology and mathematics topics for four weeks under homogenous conditions using actual subject teachers as trained assistants. The topics were: Ohms law (physics), balancing of equation (chemistry) and solution of linear quadratic equation (mathematics). A 30 items multiple choice achievement test was administered alongside the scale. The result of the study shows that attitude has a significant influence on science, technology and mathematics on students. It is evident therein that students with positive attitude towards a subject usually performed better than students with negative attitude. The result also showed that boys performed

far better than girls in the science, technology and mathematics achievement test. If attitude in the above study has a significant influence on science, technology and mathematics students, high academic self-efficacy which is related to attitude in this study may have relationship with academic achievement.

Tiwari and Bansal (2004) carried out a study on self concept of high and low achieving adolescent girls. The sample comprised of 885 girls from schools of Rudrapur, who appeared in high school examination. The results revealed that there were significant difference in social temperamental, educational and intellectual self concept of high and low achieving adolescent's girls. The study indicated that high achievers have better self concept than low achievers. Therefore, in this study there may be relationship between self- efficacy and academic achievement of senior secondary school students.

Begum and Phukan (2001) aimed to explore the difference in boys and girls academic achievement. The sample included 180 students of which 118 were boys and 62 were girls. Total marks obtained in the examination were taken as academic achievement scores of the students. The chi-square test result indicated that there was no difference between boys and girls with respect to high and low academic achievement. In this present study, gender may or may not have any significant influence on student achievement.

Statement of the Problem

The Nigerian society has been faced with the challenge of poor academic achievement. It has been observed that some graduates of different professions deviate from their areas during the choice of life careers. Such deviations stem from the said poor academic achievements in schools and low self-efficacy that student's experience from their early school age. This may be as a result of their learning strategies; hence, any learning strategy that can facilitate students' self-efficacy may equally enhance their academic achievement.

The emphasis in Nigerian schools is more on teaching methods over learning methods thereby neglecting the latter and the result of poor learning is poor academic achievement. Annual results from West African Examination Council (WAEC) revealed poor achievement of students. WAEC/SSCE results (2007-20 13), from the Chief Examiner's reports showed that less than forty percent (40) of the registered students credited all the subjects including the core subjects of English language and Mathematics, while about sixty percent (60) either had ordinary pass or failure grades each year. This consistent poor academic achievement has led to the deterioration of students' self- efficacy. Self-efficacy according to Aremu and Ogbuagu (2005) is one of the measures on one's own competence to complete tasks and goals. The low self-efficacy among students could account for the fast spreading of examination malpractices and mass failure in the West African School Certificate Examination in our country Nigeria (Osunde and Aduwa-Ogiegbaen, 2005). This problem has attracted unpredictable concern from parents, teachers, and even the government, the students not left out.

Consequently, a variety of researches have been conducted to detect the way out of the undesired situation. Aremu and Ogbuagu (2005) attributed the problem to low self-efficacy, Obetta (2008), attributed the problem to the lack of learning skills and poor teaching methods. However, Uroko (2009) maintained that the real root of the problem is poor learning skills among the students. On the other hand, it is opined that, so far as the students lack good learning skills when they learn individually, students should be made to involve in a small group learning- collaborative learning.

Controversy over which gender achieves better in academics is evident, while some research studies showed evidence of girls' superiority over boys; others showed boys superiority over girls. The problem of this study put in a question form is, what is the relationship among collaborative learning, self-efficacy and academic achievement of secondary school students based on gender?

Purpose of the Study

The purpose of this study is to determine the relationship among collaborative learning, self-efficacy and academic achievement of senior secondary school students based on gender. Specifically, the study seeks to:

- Ascertain the relationship between collaborative learning and students' self-efficacy based on gender (male and female).
- Investigate the relationship between collaborative learning and students' academic achievement based on gender (male and female).

Research Questions

The following research questions were posed to guide the study:

- What is the relationship between collaborative learning and students' self-efficacy based on gender?
- What is the relationship between collaborative learning and students' academic achievement based on gender?

Research Hypotheses

The following null hypotheses were formulated to guide the study and will be tested at 0.05 levels of significance.

Ho_1: There is no significant relationship between collaborative learning and students' self-efficacy based on gender.

Ho_2: The relationship between collaborative learning and students' academic achievement based on gender is not significant.

Methodology

The study was conducted with senior secondary two (SS2) students in Obollo-Afor Education zone of Enugu state in Nigeria. Obollo-A for education zone comprises of three local government areas namely; Udenu, Igboeze North and Igbooeze South local government areas. There are 47 public secondary schools in the zone.

Research Design

The study adopted a correlational research design. According to Punch (2011) a correlational study is used here to stress the relationship between variables. It is a study that applies the principles of experimental reasoning to the non-experimental situations. In this case, the researchers explored the influence of collaborative learning on students' self-efficiency and academic achievement based on gender.

The population of the study was made up of all the senior secondary two (SSII) students. All together the numbers consisted of five thousand and forty-five (5, 045) students. 3071 females and 1974 males students. There were 47 public secondary schools in Obollo-Afor Education Zone with forty-one (41) 10-co-educational schools and six (6) same sex

schools (Planning, Research and Statistics) (PRS) Post Primary School Management Board (PPSMB), Obollo-Afor education zone, 2014. The sample size of the study was three hundred and fifty-eight (358) students. This is in line with the National Education Association Krejcie and Morgan (1970) which stated that when the population is between 5, 000 to 6, 000 the sample size will range between 357 and 361

Instrument for Data Collection

The instrument for data collection was questionnaire. The questionnaire was in two sections. The first section was made up of 25 item designed to elicit information on collaborative learning based on gender. The second section is a 20-item questionnaire which was designed to elicit information about students' self-efficacy based on gender. Both sections were rated on a four point rating scale ranging from strongly agree, agree, disagree and strongly disagree. In measuring the academic achievement students annual results were used. The instrument was face validated by three experts, two from Educational Psychology and one from Measurement and Evaluation. The researchers adhered to the corrections made by the experts before producing the final copy. In determining the reliability of the instrument Cronbach Alpha was used. In determining the internal consistency the results of the trial testing were used. The instrument was found reliable with 0.85 and 0.91 respectively.

Method of Data Analysis

In analyzing the data mean ($\overline{X}$), standard deviation (SD) were used to answer the research questions while Pearson product moment co-efficient was used to test the hypotheses at 0.05 level of significance.

RESULTS AND DISCUSSIONS OF STUDY

Table 1: Mean, Standard Deviation and Pearson Product Moment Co-Efficient Analysis Table Showing Relationship between Collaborative Learning and Students' Self-Efficacy Belief Based on Gender

Variables	Gender	$\overline{X}$	SD	N	r	R^2
Collaborative learning	Male	2.76	.32	300		
	Female	2.78	.26	198	.631	.399
Self-efficacy belief.	Male	2.75	.35	300		
	Female	2.82	.30	198		

The result in table 2 above shows mean and standard deviation scores of 2.78 and .26 for female collaborative learning, and 2.76 and.32 for male collaborative learning. Also, the female response on self-efficacy shows mean and standard deviation of 2.82 and .30, while that of the males revealed 2.75 and .35. The regression coefficient r of.63 shows that a moderate linear relationship exists between collaborative learning and students' self-efficacy based on gender. The coefficient of determination R^2 of .399 means that 39.9% of students' self-efficacy in terms of their gender is predicated by collaborative learning.

Table 2: Mean, Standard Deviation and Pearson Product Moment Co-Efficient Analysis Table Showing Relationship between Collaborative Learning and Students' Academic Achievement Based on Gender

Variables	Gender	$\overline{X}$	SD	N	r	R^2
Collaborative learning	Male	2.76	.32	300		
	Female	2.78	.26	198	.191	.036

Table 2: Contd.,

Academic achievement	Male	60.25	17.93	300		
	Female	61.38	17.38	198		

The result of table two above shows a mean score and standard deviation of female students' academic achievement score as 61.38 and 17.38, for female and that of the males as 60.25 and 17.93. The female students' mean and standard deviation response on the collaborative learning for female was shown to be 2.78 and .26, and the male students' mean and standard deviation response on collaborative learning was shown to be 2.76 and .32. Also, the regression coefficient value r of .19 shows that a low linear relationship exists between students' academic achievement and collaborative learning based on gender. The coefficient of determination R^2 of .036 means that 3.6% of the students' academic achievement in terms of gender is predicated by collaborative learning.

Table 3: Pearson Product Moment Co-Efficient Table Showing Relationship between Collaborative Learning and Self-Efficacy of Secondary School Students Based on Gender

Model		Sum of Squares	df	Means Squares	f	Sig. (2-Tailed)	Probability Level	Decision
	Pearson Product Moment Co-efficient Regression	9.352	2	4.676				
I	Residual	14.115	195	0.72	64.603	0.000	0.05	Significant
	Total.	**23.468**	**197**					

The result from table 3 shows that the significant level for two tailed test 0.000 is less than the probability level of 0.05. Hence, the stated null hypothesis is not accepted. This means that there is a significant relationship between collaborative learning of secondary school students and their self-efficacy based on gender.

Table 4: Pearson Product Moment Co-Efficient Table Showing Relationship between Collaborative Learning and Students' Academic Achievement Based on Gender

Model		Sum of Squares	df	Means Squares	f	Sig. (2-Tailed)	Probability Level	Decision
	Pearson Product Moment Co-efficient Regression	2320.672	2	1160.336				
	Residual	61309.919	195	314.410	3.691	0.027	0.05	Significant
	Total	**63630.591**	**197**					

The result in table 4 shows that the significant level of two tailed test 0.027 is less than the probability level of 0.05. Hence, the null hypothesis is not accepted. This means that there is a significant relationship between collaborative learning of secondary school students and their academic achievement in favour of female group with higher mean score of 61.30.

Result shows that moderate linear relationship exists between students' self-efficacy and collaborative learning in terms of their gender. Also, coefficient of determination shows that students' self-efficacy could be attributed to collaborative learning in terms of their gender. This finding revealed that collaborative learning alone cannot account for

students' self-efficacy in terms of gender that other variables accounted for the of students' self- efficacy apart from gender, although these variables are not under considerations in this study. The result shows that there is a significant relationship between collaborative learning of secondary school students' and their self-efficacy based on gender. This is in line with Tiwari and Bansal (2004) s' study on self-concept of high and low achieving adolescent girls. Therefore, students with high self-efficacy belief achieve better.

The result of the study shows that Low linear relationship exists between collaborative learning and students' academic achievement. Also, coefficient of determination shows that students' academic achievement in terms of gender could be attributed to collaborative learning. One could infer that collaborative learning alone cannot be attributed to students' academic achievement in terms of their gender. Some other factors could be attributed (like students intelligent quotient, socioeconomic background, students study habit, teaching aids used in teaching, nature of curriculum, and level of gender inclusiveness in the class) that are not within the research consideration of this study. The result also shows that there is a significant relationship between collaborative learning of secondary school students' and their academic achievement in favour of female. This finding disagreed with Begum and Phukan (2001) that aimed at exploring the difference in boys and girls academic achievement which indicated that there was no difference between boys and girls with respect to high and low academic achievement.

CONCLUSIONS AND RECOMMENDATIONS

From the discussion of the findings, it could be inferred that there is a significant relationship between collaborative learning of secondary school students and their self-efficacy based on gender. There is a significant relationship between collaborative learning of secondary school students and their academic achievement based on gender. It is encouraging to enable the students to realize that through collaborative learning their self-efficacy and academic achievement are gender independent.

The findings of this study have far reaching implications for the students, teachers, educators and future researchers. For the students, the results of this study will enable them to realize that collaborative learning enhances and promotes students' self-efficacy and academic achievement. The study will enable the students to realize that through collaborative learning, their self-efficacy and academic achievements are gender dependent.

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