

EFFECTS OF GROUP LEARNING STRATEGIES ON SECONDARY SCHOOL STUDENTS' ATTITUDES TO GEOGRAPHY

Peter Adewale Amosun

*Department of Teacher Education
University of Ibadan, Ibadan, Nigeria.*

E.mail: amosun2002@gmail.com; pa.amosun@mail.ui.edu.ng

ABSTRACT

Geography as a subject is seen to be wide in nature and scope. This fact appears to make both teachers and students in Nigeria and elsewhere have negative attitude towards geography. This has eventually led to poor performance in the subject. This study, therefore, determined the effect of three group learning strategies on students' attitude to geography in Ibadan. Three hundred and sixty students participated in the study from eight schools which were purposively selected and randomly assigned to treatment. Seven hypotheses were tested at $P < .05$. Data were collected using a test instrument measuring students' attitude to geography questionnaire administered on the subjects. Findings from the study show that group learning strategies, especially integrated group learning and cooperative learning strategies helped in improving the students' attitude to geography better than mastery learning and control group. The high mathematical ability students performed better than low ability ones but gender has no difference in the study. The implications of these findings were discussed in the paper.

Introduction

Geography is the study of earth's people, places and phenomena in their processes and patterns. Geographers describe, analyze and explain locations, places, movements, regions and a web of human-environment interactions both physical and human or cultural within a space of time. This makes the contents and concepts of geography rich and voluminous. It should be appreciated here that all discoveries, inventions and contributions in science and technology are found over the landscape. In fact, both physical and human happenings are within the precinct of geographical studies. As earlier indicated, scholars have reiterated that inventions and contributions of science and technology are found on space. The web of interactions and interrelationships with its attendant consequences which take place between and among phenomena on earth have made the environment of man a subject of serious and critical discussion. Consequently, geographical knowledge is very important in acquiring crucial information and techniques of managing the environment for economic, political and other development, particularly where questions such as 'where' and 'why there' about phenomena are asked (Ward, 1968; Onasanya, 1985; Okpala, 1985; Amosun, 2002 and 2012). In addition to this is the fact

that geography uses maps, surveys, cartography and Geographical Information System (GIS) to convey all its vital information which are found within the earth's surface. These aspects of geography seem to be the most difficult areas for students. Again, Geography as a dynamic subject has continued to be enlarged and enriched by recent developments in science and technology, politics, economy, and changes in the landscape with all its emerging issues. This therefore makes geography wide in scope. Its curriculum, syllabus and scheme of work for external examinations (both West African Secondary School Certificate Examination-WASSCE, and Joint Examination Matriculation Board-JAMB) are wide to cover. Hence both teachers and students seem to approach the teaching and learning of the subject with a preconceived notion. It is therefore very unlikely that the right attitude which would have enhanced a good performance in the subject may be lacking. Studies have shown that students performance over the time in external examinations have not been encouraging. It has even been said that the trend of performance has been going down over the years, and one of the main reasons that have been pointed out is the attitudes of students to the nature and scope of geography (Olubodun, 1985; Mansaray, 1990; Morakinyo, 2001; WAEC, 2011, 2012 and 2013). It has been reported that geography is considered by many students to be a conceptually difficult subject with an extremely wide scope (Aderogba, 1984; Adegoke, 1987; Mansaray, 1992; Mansaray and Ajiboye 1994; Amosun, 2002; 2012 and Adeyemi, 2014). This appears to have led to various perceptions and attitudes to geography as a subject at secondary schools in Nigeria. Studies, however, have further pointed out that the negative perception and attitude of students to this subject is more informed by the way teachers handle and teach the subject. If we are to make performance improve, it is of necessity that we look for a way of improving or changing the students' attitude to the subject. Teachers are either ill-informed about efficacy of some strategies apart from the reception ones which they know and use or they have refused to change their styles and strategies of teaching which would help them to be able to cover their syllabus and enhance student performance. Literature has suggested a variety of teaching strategies that could be used to enhance students' attitudes to geography among which is group learning strategies.

Group learning strategies as used in this study comprise Cooperative Learning (CL), Mastery Learning (ML) and Integrated Group Learning (IGL). These strategies are not new but they are unique. These strategies help in developing personal and social skills. They help in developing right attitudes which eventually lead to achievement. It has been found that when students work cooperatively together, they learn to give and receive help, share their ideas and listen to other students' perspectives, seek to new ways of clarifying differences, resolving problems, and constructing new understanding and knowledge. Students attain higher academic outcomes are more motivated to achievements than they would have if they work alone. CL has been found to influence the social relations with pupils of different ethnic backgrounds and mainstreamed

special education pupils and their classmates positively. CL experiences have been shown to be effective and motivating for student teachers and; Improved self-esteem, better attitudes toward the subject and toward school in general and improved time-on-task (Hillkirk, 1991; Slavin, 1995; Lee, 1997; Veeman, Kenter and Post, 2000; Amosun, 2002; Gillies, 2003) Development theorists in the area of group learning assume that children's interactions around appropriate tasks increase their mastery of critical concepts. For example, they pose that if a child has an incorrect conception, interaction with peers increases the chances that the child will move to better understanding. This is evident in the work of Bell, Grossen and Perset-Clermont (1985)

Mastery learning (ML) as a strategy emphasizes diagnostic tests or feedback and corrective activities. After teaching each unit of lesson, diagnostic tests are used to check learning progress. Diagnostic test A identifies learners who have mastered the unit and have reached the mastery level, they, then, do the enrichment activities. The same diagnostic test identifies students who have not reached mastery level, diagnoses their learning difficulties and prescribes specific corrective activities. Corrective activities include revision of text, study of alternative materials, additional exercises and peer/teacher tutoring to ensure students master units when diagnostic test B is applied. ML serves as reinforcers to the learners through their high degree of success. Greater positive attitudes toward the subjects and learning is generally enhanced .It focuses on the needs of the students with less emphasis on a planned programme, the teacher or the school. The strategy can cater for the needs of a good number of students at the same time as it is group based. It enhances healthy association among peers in the classroom.

(Amosun, 2002; Jonathan-Ibeagha, 1999). Mastery Learning, according to Guskey (1990), can also be applied in broad range of teaching and learning situations. It offers teachers a way to transfer several of the most powerful aspects of one-to-one tutoring to group-based instructional settings. It is argued that the mastery learning strategy heightens achievement, increases learning rate and self-esteem and improves attitudes (Glathorn, 1987). Olubodun (1985) reports that supplementing group-based instruction with feedback/corrective procedures and use of student-supportive system in mastery learning strategy resulted in significantly higher cognitive and affective outcomes in mathematics. Out of the three methods he experimented, he observed that mastery learning with peer tutoring approach is the most effective method. Igbokwe (1992), in his study entitled the effect of the use of Blooms, Kellers and integrated models of mastery learning on learning outcomes in geography reports that male and female students did not differ significantly in the attitude they developed towards geography as a school subject and geography teacher when taught using the same methods. He also discovered that there was no difference in the post-test performance of males and females taught by the same method. This present study used this strategy to explore students' attitude to geography.

Guskey (1990) in his paper entitled "Cooperative Mastery Learning Strategies" describes the basic elements of Cooperative Learning (CL) and Mastery Learning (ML) and shows how these two strategies are natural complements to one another. He believes that among the educational theories and accompany instructional strategies that have captured the attention of modern educators, two of the most popular are CL and ML. These two strategies have been used independently with encouraging findings as discussed earlier. But literature is scanty about how these two strategies might be integrated and used for classroom instruction. Guskey (1990) reiterates that these two strategies share complementary theoretical foundations and offer practical solutions to many pressing classroom problems. More importantly, recent findings suggest that when cooperative learning and mastery learning are integrated and used for classroom instructions, results can be more positive than those typically achieved through the use of either strategy. In this study the two strategies (CL and ML) were integrated together and were called Integrated Group Learning Strategy (IGL).

Some studies have reported their findings into students' attitude, affective or social skills, as far group learning is concerned. For instance, Veenman, Kenter and Post (2000) give a vivid report of cooperative learning in Dutch primary classrooms. They observe that the mean score in the subscale 'positive attitudes towards CL' shows that the pupils like to work in groups. The majority of the pupils found it nice or very nice to work with other pupils on a task (93%), receive help from other pupils (84%), hear what other pupils think (84%) and explain things to other pupils (77%). In addition, most of the pupils found school (86%) and school subjects (94%) to be just as nice or nicer when working in groups. In their study, no significant differences were found between girls and boys in this respect. Again, students are found to be of different abilities. Geography uses a lot of mathematical or quantitative abilities in maps, surveys, cartography and GIS. These are not found to be easy with students who are of low ability and even sometimes average ability students. However, one the gains of group learning is the heterogeneity of classroom teaching and learning which allows low ability students to gain and improve on their performance. Successful forms of CL have generally been equally effective with high, average, and low achieving students (Slavin, 1990). Bennett and Cass (1988) contrasted the effect of three types of group ability groups of high, average and low attainers; the groups comprised two low one high (2LH) and two high and one low (2HL). The groups all worked on the same task concerning cooperative decision-making on settlement patterns, and all children were interviewed individually after the task to establish their degree of understanding. In their findings, Groups 2LH performed much better than groups 2HL. In the latter combination, the low attainer seemed to be ignored or to opt out, and as a result could not perform well. They also discovered that ability groups of high attainers significantly and consistently performed better than the groups of average and low attainers. The high ability group was, overall the best of all groups

studied. Their studies also confirmed that high attaining children perform well, irrespective of the type of group they are in. It is evident, therefore, that group learning procedures can provide appropriate instructional experience for diverse students who work together. The issue of gender which is another crucial characteristic of students in co-educational schools, this is also seemed to be resolved by the heterogeneity of classroom setting. It is also to prove whether male or female would perform better in their various classrooms. Gutbezghl (1995) reports that various findings have shown that girls show less confidence in their ability to learn than boys, and that girls are less confident about future performance in mathematics. It has also been observed that statistically significant differences abound in mathematical ability of the male and female across the globe (Maccoby and Jacklin, 1974; Hyde, Fennema and Lamon, 1990; Gbodi, 1998). From the review above, it shows that the present study is set to investigate the effects of group learning strategies (CL, ML and IGL) on students' attitude to geography. The moderator variables that were considered in the study have to do with two main characteristics of the students namely; gender and mathematical ability. The effects of these were thus investigated.

Hypotheses

The following null hypotheses were tested in the study:

- Ho₁. There is no statistically significant main effect of treatment on students' attitude to geography.
- Ho₂ There is no statistically significant main effect of gender on students' attitude to geography.
- Ho₃ There is no statistically significant main effect of mathematical ability on students' attitude to geography.
- Ho₄ There is no statistically significant interaction effect of treatment and gender on students' attitude to geography.
- Ho₅ There is no statistically significant interaction effect of treatment and mathematical ability on students' attitude to geography
- Ho₆ There is no significant interaction effect of gender and mathematical ability on students' attitude to geography.
- Ho₇ There is no statistically significant interaction effect of treatment, gender and mathematical ability on students' attitude to geography

Methodology

The study adopted a 4x3x2quasi-experimental, pre-test, post-test, control group design. Three variables in this study are **independent variable** – This is the teaching strategy or the instruction mode, which occurs at four levels: Cooperative Learning Strategy (CLS), Mastery Learning Strategy (MLS), Integrated Group Learning Strategy (IGLS), Control group (conventional method) (CM); Two **intervening variables** were identified as important for this study, namely: Gender – male and female, and Mathematical Ability, this occurs at three levels as high, average and low; The only

dependent variable is specified as attitude to geography. The design above illustrates three experimental groups (1, 2 and 3) and one control group (4). Subjects in the experimental group 1 were exposed to the selected map work content using cooperative learning strategy. The same content was selected and taught for group 2 using, mastery learning strategy. Also, the same content was taught using the integrated group learning strategy for the third group. Finally, the control group was exposed to the same content using the traditional or conventional way of teaching. The scores of subjects in the attitude to Geography Questionnaire (SAGQ) were taken before and after the treatment. The researcher visited a good number of schools in Ibadan Municipality. He personally discussed with the geography teachers in those schools. The criteria for participating in the study were spelt out to them in form of questions. These teachers answered the questions. Following their answers eight out of the number that met the criteria were purposively selected. Two schools each were then randomly assigned to the treatment and control group. In each of the schools, intact classes were used for the experiment. This is done in order to avoid interaction among the subjects. In all, three hundred and sixty (360) SSII geography students started and completed the study. These eventually comprised the subject of the study. From the total sample, 196 were males while 164 were females.

Content Selection for the Study

Contents and concepts in map work have been most proclaimed difficult in geography and this makes both students and teachers to have negative attitude towards geography. Studies by Adegoke, 1987; Mansaray and Ajiboye, 1994; Ogunnowo, 1992; and Amosun, 1994, attested to the fact that students dread map work which is an important aspect of geography, and that they have negative perspectives and attitudes towards it. Also Chief examiners reports in WAEC 2011, 2012 and 2013, indicated that many students could not answer questions in this section correctly. Hence, map work concepts: Introduction to Map work; Reduction and Enlargement, and Relief, were selected to form the content of this study.

Instruments

Two main instruments were used in this study: The Students' Mathematical Ability Test (SMAT) and the students' attitude to geography questionnaire (SAGQ). The SMAT consisted of 30 multiple objective questions. It was completed by students within 40mins. The test was designed to test the mental ability of the students. A Standardized Higher Test by Australian Council for Educational Research and Mental Ability Test by Arthur S. Otis and Roger T. Lennon were adopted and adapted in order to measure the students' mathematical ability. The test contains mathematical logics of addition, subtraction, multiplication and division. The students were asked to fill in the missing numbers, calculate principal and interest, percentage, tell by numbers etc. This test was applied on subjects at the out-set of the investigation. They were then classified into three different groups as high, average and low

according to their performance. The need for the SMAT became necessary because the map work contents to teach involved calculations and this is backed up by literature, that students' attitude to geography is negative because it requires mathematical calculations which most students have phobia for. Therefore, ability to solve mathematical problems was considered as a foundational variable for the study. This has helped in grouping the students to three ability levels, namely: high, average and low. It has also helped to control for extraneous factors that might have posed as threat to the internal and external validity of the study. However, because the test was a combination of two types of standardized tests, the investigator trial-tested and validated the instrument, by using Kuder-Richardson formula (Kr21) to determine its reliability coefficient. A reliability index of 0.95 was obtained. The SAGQ was made up of 40-items to which students were to respond on a four-point Likert Scale [Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD)]. Items which indicated a positive attitude were graded on points ranging from 4, 3, 2 to 1, while the scoring mode was reversed for items which indicated negative attitude. The items on this questionnaire can be grouped under the following categories: love for and interest in geography; importance of geography; time management for geographical classes; attitude towards different aspects of geography; attitude to the geography teacher; and attitude towards calculation in geography especially in map work. The Students' Attitude to Geography Questionnaire was validated using the Cronbach alpha measure, and a coefficient of 0.83 was obtained.

Procedure for the Study

A one-week sensitization and training period was held with the research assistants for experimental and control groups by the investigator. The manual for training was given to them for further study and consultation from time to time. After the research assistants had prepared the students, the pretest was administered. These included SAGQ and SMAT. Students were categorized into high, average and low ability groups according to their SMAT scores. Eight weeks were used for the study. The research assistants kicked off their teaching immediately after the pretest following their scheme of work with the right strategies. They were also supervised by a team of observers in order to assure compliance. The researcher also moved round to see how research assistants were carrying out the work. After completion, the post test was also administered on the students.

Method of Data Analysis

The descriptive statistics were used to explain and compare the pre-test and post-test attitude scores of the treatment groups. Inferential statistics were however used to test the research hypotheses. The pre and post data of SAGQ collected were analyzed using Analysis of Covariance (ANCOVA). The pretest scores were used as covariates. The Multiple Classification Analysis (MCA) technique was employed to find out how each of the groups performed. Where differences were observed in the

ANCOVA results, the Scheffé post-hoc test was used to determine the source of variation and direction of significant differences among the groups. The hypotheses were tested at 0.05 alpha.

Results

Which of the four teaching/learning strategies: Cooperative, Mastery, Integrated group learning and Conventional method will better facilitate secondary students' attitude to geography?

Table 31: Summary of the results of the descriptive statistics of attitude scores according to treatment group

Statistics	CLS	MLS	IGLS	CM
No. of Cases	90	90	90	90
Pre-test Mean	119.40	115.96	97.63	117.24
Post-test Mean	121.81	117.09	122.19	118.11
Mean Gain	2.41	1.13	4.56	0.87
Pre-test – S.D.	13.60	13.55	30.70	11.98
Post-test – S.D.	12.38	12.8	13.92	12.31

CLS = Cooperative Learning Strategy; MLS = Mastery Learning Strategy; IGLS = Integrated Group Learning Strategy; CM = Conventional Method (the control group).

Table 1, shows the descriptive statistics associated students' attitude to geography across the experimental and control groups. A closer look at the post-test means show that IGLS group obtained the highest mean gain in attitudes to geography (4.56). This indicates that IGLS is better in changing the attitude of students towards geography than all others.

Test of Hypotheses

Ho₁. There is no statistically significant main effect of treatment on students' attitude to geography.

Table 102: Summary of 4x3x2 analysis of covariance of students posttest attitude scores by treatment, gender and mathematical ability.

SOURCE OF VARIATION	SUM OF SQUARE	DF	MEAN SCORE	F	SIG. OF F.
COVARIATES	3001.762	1	3001.762	19.670	.000
Main Effects	5535.934	6	922.656	6.046	.000
Treatment	4178.988	3	1392.996	9.128	.000*
Gender	466.464	1	466.464	3.057	.081
Ability	890.482	2	445.241	2.918	.050
2-WAY INTERACTIONS	3020.563	11	274.597	1.799	.053
Treatment x Gender	915.501	3	305.167	2.000	.114
Treatment x Ability	1343.552	6	223.925	1.467	.189
Gender x Ability	720.214	2	360.107	2.360	.096
3-WAY INTERACTIONS	464.501	6	77.417	.507	.803
Treatment x Gender x Ability	464.501	6	77.417	.507	.803
Explained	12022.760	24	500.948	3.283	.000
Residual	51123.140	335	152.606		
TOTAL	63145.900	359	175.894		

* Significant at $P < 0.05$

From the summary of the ANCOVA as shown in Table 2, it could be observed that the treatment was found to have contributed significantly to the variation in subjects' attitude scores. In other words, the Table shows a significant main effect of treatment on students' mean attitude scores [$F_{(3,359)} = 9.128$; $P < 0.05$]. Based on this finding, the null hypothesis is therefore rejected. The Multiple Classification Analysis (MCA) of the Attitude scores is as presented in Table 3.

Table 113: Multiple classification analysis (MCA) of the posttest attitudes scores by treatment, gender and mathematical ability.

Grand Mean = 119.52

VARIABLE CATEGORY	N	UNADJUSTED DEVIATION	ETA	ADJUSTED INDEPENDENTS + COVARIATES DEVIATION	BETA
TREATMENT					
1. Cooperative	90	2.29		1.13	
2. Mastery	90	-3.56		-4.59	
3. Integrated	90	2.67		5.30	
4. Conventional	90	-1.41		-184	
			.20		.28
GENDER					
Male	196	.84		.94	
Female	164	-1.00		-1.12	
			.07		.08
ABILITY					
Low	107	-3.16		-1.53	
Average	148	.72		.00	
High	105	2.21		1.56	
			.16		0.9
Multiple R Squared					.135
Multiple R					.368

Table 3, shows that IGLS obtained the highest adjusted posttest mean scores of 124.82, CLS comes next with adjusted mean score of 120.65, followed by the control group (117.68) while the MLS had the lowest adjusted mean score of 114.93. In order to determine the actual source of the observed significant difference which were found in the ANCOVA, a Scheffé post-hoc analysis was carried out on the mean scores as presented in Table 4.

Table 124: Summary of Scheffé post-hoc analysis on posttest mean score of attitude by treatment groups

Mean	Groups	4	2	3	1
114.93	2				
117.68	4				
120.65	1	*			
124.82	3	*			

* Denotes pairs of groups significantly different at the 0.05 level

Legend: Group 1=CLS; 2= MLS; 3=IGLS; 4=CM

It could be observed from Table 4, that the mean attitude score of IGLS group is the highest, followed by CLS group, and these two groups were found to be significantly different from the last two groups – the MLS and the control groups. In summary, the Table reveals that groups 3 and 4 and 1 and 4 are significantly different at P < 0.05.

But there is no significant different between groups 2 and 1, 2 and 3, 2 and 4, and groups 1 and 3. Therefore, on the basis of these findings, hypothesis that states that there is no significant main effect of treatment on students' attitude to geography is accordingly rejected.

Ho₂: There is no statistically significant main effect of gender on students' attitude to geography. Tables 2, shows that there is no significant main effect of gender [$F_{(1,359)} = 3.057$; $P > 0.05$]. Therefore the hypothesis that states that there is no significant main effect of gender on students' attitude to geography is not rejected. Table 3, reveals that male students performed better with an adjusted mean score of 120.46, than their female counterpart with adjusted mean score of 118.40. However, this difference is not found to be statistically significant.

Ho₃ There is no statistically significant main effect of mathematical ability on students' attitude to geography. The results presented in table 2, shows that there is significant main effect of mathematical ability on the variation in subjects' attitude scores [$F_{(2,359)} = 2.918$; $P < 0.05$].

The MCA results in Table 3, shows the performance of each group. The high ability subjects obtained the highest mean score with adjusted mean score of 121.08; followed by the average ability subjects with adjusted mean of 119.52 and lastly by low ability level subjects who have an adjusted mean score of 117.99. In order to determine the precise source of the observed significant differences indicated in the ANCOVA, a Scheffé post-hoc analysis was carried out on the mean scores of the groups. Table 14 below presents a summary of the Scheffé analysis.

Table 145: Summary of Scheffé post-hoc analysis on post-test mean of attitude by mathematical ability group

Mean	Groups	3	2	1
117.99	3			
119.52	2			
121.08	1	*		

Key: 1=High; 2=Average; 3 =Low

Table 5 shows that there is a statistically significant difference between the high and low ability groups. But no significant difference was found between high and average, and average and low ability groups. However, high ability groups performed slightly higher than average ability group. So also average ability group performed slightly better than low ability group.

Ho₄: There is no statistically significant interaction effect of treatment and gender on students' attitude to geography. From the summary of ANCOVA in Table 2, the result indicates a non-statistically significant interaction effect of treatment and gender on students' attitude scores [$F(3,359) = 2.000$; $P > 0.05$]. The null hypothesis is therefore not rejected. This means there is no statistically significant difference in attitude scores of the subjects as a result of interaction of treatment and gender.

Ho₅: There is no statistically significant interaction effect of treatment and mathematical ability on students' attitude to geography. As we can see in Table 2, there is no significant interaction effect of treatment and mathematical ability on students' attitude to geography [$F_{(6,359)} = 1.467$; $P > 0.05$]. Thus, hypothesis 5 is not rejected.

Ho₆: There is no significant interaction effect of gender and mathematical ability on students' attitude to geography. The results presented in Tables 2, show that there is no statistically significant interaction effect of gender and mathematical ability on students' attitude to geography [$F_{(2,359)} = 2.360$; $P > 0.05$]. The null hypothesis is therefore not rejected.

Ho₇: There is no statistically significant interaction effect of treatment, gender and mathematical ability on students' attitude to geography. Tables 2, shows that there is no statistically significant interaction effect of treatment, gender and mathematical ability on students' attitude to geography [$F_{(6,359)} = .507$; $P > 0.05$]. Thus, the null hypothesis is not rejected.

Discussions

Group Learning and Students Attitude to Geography

Hypothesis 1 sought to test if there would be any statistically significant main effect of treatment on students' attitude to geography. Table 2 shows that there is a statistically significant main effect of treatment on students' attitude to geography. It also means that the experimental strategies help to improve students' attitude to geography. The superiority of the treatment over the control group in their attitude towards geography may not be unconnected with the nature of the task the students were exposed to during the experiment. It is shown that CLS and IGLS groups performed significantly better than the MLS and CM groups. This could be attributed to the level of their involvement and interactions which probably have led to their forming positive disposition towards geography, and the geography teacher. The Table also reveals that the control group scored a slightly higher mean than the MLS group, although not significant. A lot of factors may have been responsible for this. It is likely that the MLS needs more time than is allowed by the conventional school timetable. On the part of the control group, the research assistants seemed to have put their best into their work. Although, they taught in their old normal way. It is seemed they wanted to cover their past lapses and present themselves as good teachers. These and some other factors

may have made the control group to have scored a slightly higher than the MLS group. However, the low performance of MLS and CM, and inability to improve to a significant level the development of geographic attitude considered in this study may be due to the fact that, students in these groups do not exchange information, share common tasks, neither do they correct each other. If they do at all (especially in MLS group), they occur at lower level because of time limit. Hence, the superiority of CLS and IGLS groups becomes apparent over MLS and the control groups.

In sum, the CLS and IGLS groups are significantly different from MLS and the control groups. It suffices to say here that the IGLS group performed significantly better than the CLS group. This difference may have occurred as a result of the interest generated by the diagnostic test processes which is embedded in IGLS. This may have stimulated and motivated the students in this group to do more, thereby making them to develop positive attitude and right disposition to geography. The findings of this study are consistent with earlier findings in this area (Sharan, 1980; Okebukola, 1984; Johnson and Johnson, 1985; Slavin, 1987; Guskey, 1990; Akinsola, 1994; Johnson and Johnson, 1995; Jordan and Methis, 1997; and Veenman et al 2000). The results of this investigation have provided some support for the notion that not only do learning strategies help to enhance students achievement in geography but that group learning strategies help to enhance students attitude in learning geography. This also indicates that group learning strategies in particular are superior to conventional method in developing affective outcomes like attitude in geography.

Group Learning, Gender and Students' Attitude to Geography

One of the intervening variables considered in this study is gender. However, it was shown that there was no statistically significant main effect of gender on attitude to geography. Again, no statistically significant interaction effect of treatment and gender is observed in the study. From the non-rejection of these two hypotheses, it means that gender has little or no influence on learners' attitude to geography. These findings are also similar to that of Okebukola (1984) where his findings show that sex of the student was not significant for scientific attitude to biology. Akinsola (1994) equally advanced that the influence of students' sex on the overall performance in mathematics was observed to be insignificant. The finding from this present study is then regarded to be consistent with earlier findings in this area. In the sum, the findings suggest that group learning strategies can still be used to enhance students' attitude to geography regardless of gender differences. In other words, the learning outcomes in group learning strategies do not depend on the sex of the user.

Group Learning, Mathematical Ability and Students' Attitude to Geography

The mathematical ability of the subjects was considered an important crucial factor that could have effect on students' attitude to geography. This is because Geography and map work especially involve a lot of calculations. Hypothesis three was formulated to

seek whether there would be statistically significant main effect of mathematical ability on students' attitude to geography. It, therefore, suffices to say that the gap between high and average, average and low is being closed up. In other words, the low ability subjects in the group learning strategies have marks that are very close to those of average ability groups in their attitudes scores. The same trend was observed between high and average. This seems to indicate that average and low ability students have benefited much from interactions between them and high ability students. The right explanation for this finding may not be far-fetched. Firstly, group learning as investigated in this study emphasizes the need to bring almost if not all students to mastery level. Secondly, the group composition which is heterogeneous in nature enables low- and average-ability students to benefit from working cooperatively with their high-ability peers. Thirdly, the positive interdependence which is prominent in group learning strategies where students see themselves as being linked to the others in the group in such a manner that they cannot succeed unless the other members of the group succeed may have contributed to the narrowing down of the gap between and among the various ability levels. Finally, the diagnostic progress tests which serve as feedback and corrective measures may have helped the low ability students in no small way. It may have helped some of them to score high marks as scored by the average students. The findings from this study have given further empirical support to other findings in this area. For instance, Okebukola (1984) reported that the main effects due to ability level and group composition were significant across the treatment conditions. Veenman, et al. (2000) have both confirmed that group learning strategies have shown that high ability pupils are better off academically when cooperating with medium and low ability peers as opposed to working alone.

Implications of the Findings

The efficacy of the group learning strategies to improve students' attitude to geography has been clearly shown by this study as opposed to control group. Literature has reported that teachers in our secondary schools use the traditional or conventional method of teaching. The teaching is always expository, reception and teacher-centred. (Okebukola, 1984; Mansaray, 1985; Omosehin, 2004). The poor performance by a majority of the students has been traced to this. The results of this study seem to support the fact that the downward trend in students' performance in geography is due to inappropriate teaching strategies. In this study the control group consistently performed poorer than the group learning strategies students. Hence, this present study has been able to offer more promising strategies for tackling what Yau, et al (1992) call "abstract thinking and mathematical calculation skills, which are sequentially built up" in geography, and map work in particular.

The Integrated Group Learning Strategy (IGLS) and Cooperative Learning Strategy (CLS) have been found in this study to promote students' attitude to geography (with IGLS holding the greatest promise). This is to say that, the special characteristics of IGLS and

CLS, (which involve group development, group goals, group leadership, communication, group norms, group cohesiveness and group conflict; which also mean positive interdependence, individual accountability, face to face promotive interaction, social skills and group processing), seem to have distinguished them as two strategies that can effectively help in promoting students' attitude to geography. The strategies further improve and strengthen the students' attitude to geography by the help of the reward system which serve as feedback corrective measures. It is therefore clearly shown from the results of this study that the observable superiority of group learning strategies over the control group is not attributable to students' individual differences but more a result of the quality of the instructional strategy. This implies that if these strategies are adopted as mode of instruction most, if not all, of the students would their attitude, perception and disposition changed. Hence, the declining performance of students in geography as highlighted in the background to study could be minimized by the use of IGLS and CLS. Again, literature has revealed that an inadequate instructional material is one of the major factors responsible for the poor performance of geography. However, the group learning strategies appear to proffer a way out of this predicament. This is glaring in the benefit accruing from the use of these strategies whereby the limited learning materials are divided into the various groups and shared among the students. This would also boost interaction, understanding of the materials and alter perceptions.

The findings from this study also show that mathematical ability groupings under the group learning strategies were significant on students' attitude to geography. It was found particularly that the low and average ability students were greatly helped by the high ability students when they worked together in mixed ability groups. In fact the gap between and among the various ability groups were narrowed down. This implies that geography teacher should endeavour to pair up students in mixed ability groups comprising high, average and low ability students for a change of attitude in geography. Moreover, it has been shown in literature that one of the major problems contributing to the poor performance in geography is the teacher-student ratio. It has been reported that the number of students who enroll for geography has continued to increase. Inability of teachers to cope with the overwhelming enrollment has weakened so many teachers and has given them stress and burnouts. However, with the help of group learning strategies, this problem seems to have been minimized. These strategies help to mobilize students to help one another. In this way, peers and groups complement the teacher who cannot give slow students enough individual help because of an overload of teaching and administrative duties (Yau, et al., 1992; Adeyemi, 2002; Amosun, 2002 and 2012).

Conclusion and Recommendations

This study was carried out to determine the effects of group learning strategies on students' attitudes to geography. Of three group learning strategies – the cooperative

learning strategy (CLS), the mastery learning strategy (MLS), the Integrated Group Learning Strategy (IGLS) (which is the integration of CLS and MLS) and the conventional method – on students' attitude to geography. Major findings include the fact that cooperative learning strategy and integrated group learning strategy have been found to be more effective in improving students' attitude to geography. In conclusion, it was suggested that CLS and IGLS should be adopted as modes of instruction to replace the conventional method which dominates our secondary school classes.

References

- Adegoke, K.A. (1987). Constraints on the Changing Nigerian School Geography Curriculum: An exploratory study. In M.A. Abegunde, et al (Eds.). *Perspective on the Senior Secondary School Geography*, Lagos: The Nigerian Geographical Association, 279-295.
- Aderogba, C.A. (1984). Selected Problems of Geography Education in Nigerian Schools and Colleges: A Case Study of Ogun State. *A Paper Presented at the NGTA (S.W. Zone) Teachers' Workshop, Ilesa, Nigeria*
- Adeyemi, S. B. (2014). Effects of Gender on Secondary School Students' Achievement in Map Work. *European Journal of Educational Studies* 6(1) 21-31
- Amosun, P.A. (1994). An Assessment of Practical Work in Geography in some Secondary School in Oyo State. Unpublished B.Ed. project, University of Ibadan.
- Amosun, P.A. (1999). Effects of One Cooperative Pattern on Students' Performance in Geography. *Studies in Education.*, 3 (1&2).
- Bell, N, Grossen, M; & Perret Clermont, A.N (1985). Socio-Cognitive Conflict and Intellectual Growth. In M. Berkowitz (Ed.), *Peer Conflict and Psychological Growth*. San Francisco: Jossey-Bass Publishers
- Bennett, N., Cass, A. (1988). *The Effects of Group Composition on Group Interactive Processes and Pupil Understanding*. British Educational
- Gillies, R. M. (2003). Structuring Cooperative Group Work in Classrooms. *International Journal of Education Research*. Volume 39 issue 1. 35-49
- Guskey, T.R. (1990). Cooperative Mastery Learning Strategies. *The Elementary School Journal* 91(1), 33-41.
- Gutbezzahl, J. (1995). How Negative Expectancies and Attitude Undermine Females' Confidence. *ERIC Publications ED 380279* pp. 1-33.
- Hillkirk, K. (1991). Cooperative Learning in the Teacher Education Curriculum. *Education*, III (4), 478-482.

- Igbokwe, U.O. (1992). The Effect of the Use of Blooms, Kellers and Integrated Models of Mastery Learning on Learning Outcomes in Geography. Unpublished Ph.D. Thesis, University of Ibadan.
- Jonathan-Ibeagha, E. (1999). Mastery Learning: Research and Findings in Nigeria. In J.O. Obemeata; S.O. Ayodele and Araromi, M.A. (eds) Evaluation in Africa. Book of Reading in Honour of Professor E.A. Yoloje. University of Ibadan. Ibadan.
- Jordan, D.W. & Methis, J. (1997). Social Skilling through Cooperative Learning. *Educational Research* 39(1), 3-21.
- Lee, G.S. (1997) Internet Communication. Institute for Distance Education, University Pertanian Malaysia.
- Mansaray, A. (1990). Issues in the Teaching of Geography for Effective Learning in the 6-3-3-4 Educational System. In K. Onasanya & C.O. Ogunnowo (Eds.), *Teaching Geography for Optimal Learning Outcomes in the Senior Secondary School*. Ijebu-Ode: The Nigerian Geography Teachers' Association (South-Western Zone), 43-63.
- Mansaray, A. (1992). *Geography Methods* 1. External Studies Programme. Adult Education Department. Ibadan: University of Ibadan.
- Mansaray, A. & Ajiboye, J.O. (1994). Topic Difficulties in Senior Secondary School Geography among Nigerian Students. *Abraka Journal of Curriculum Studies*, 2(1), 80-92.
- Morankinyo, D.A. (2001). An Appraisal of Practical Work in Geography in Some Selected Schools in Ibadan. Unpublished B.Ed. project, University of Ibadan.
- Okebukola, P.A.O. (1984). *Effects of Cooperative, Competitive and Individualistic Laboratory Interaction Patterns on Students' Performance in Biology*. Unpublished Ph.D. Thesis, University of Ibadan.
- Okpala, P.N. (1995) Science and Technology for All. In UNESCO/BREDA (Eds.) *Report on the State of Education in Africa*. 95-99.
- Olubodun, J.B. (1986). The effect of Mastery Learning on Student Cognitive and Affective Outcomes in Mathematics. Unpublished Ph.D. Thesis, University of Ibadan.
- Onasanya, M.K. (1985) *Beyond Mastery Learning: The Effect of Combining Students – Support System with Feedback - Corrective on Learning Outcomes in Geography*. Unpublished Ph.D. Thesis, University of Ibadan.

- Sharan, S. (1980). Cooperative Learning in Small Groups: Recent Methods and Effects on Achievement, Attitudes, and Ethnic Relations. *Review of Educational Research*, 50, 241-272.
- Slavin, R.E. (1990). *Cooperative Learning: Theory, Research and Practice*. (2nd ed.) Boston: Allyn & Bacon.
- Slavin, R.E. (1995). *Cooperative Learning: Theory, Research and Practice*. Englewood Cliffs, NJ Prentice-Hall.
- Veenman, S., Kenter, B & Post, K. (2000) Cooperative Learning in Dutch Primary Classrooms. *Educational Studies*, 26(3) pp. 281-302
- WAEC (2011). The West African Examination Council, Chief Examiners Report on Nov./Dec. Senior School Certificate Examination.
- WAEC (2012). The West African Examination Council, Chief Examiners Report on May/June Senior School Certificate Examination.
- WAEC (2013). The West African Examination Council, Chief Examiners Report on Nov./Dec. Senior School Certificate Examination.
- Ward, R.G. (1968). Reshaping New Guinea's Geography, *Inaugural Lecture*, University of Papua and New Guinea pp. 1.
- Yau, B.L., Wong, K. & Ma, L. (1992). Group Learning in Map Work. In Brunner, H.S. & Westrhenen, J.V. (eds.). *Empirical Research in Geographical Teaching. Netherlands Geographical Studies*. 142 Amsterdam: University of Amsterdam.

Reference to this paper should be made as follows: Peter Adewale Amosun (2015), Effects of Group Learning Strategies on Secondary School Students' Attitudes to Geography. *J. of Education and Leadership Development Vol. 7, No. 2, Pp. 21 – 38*.
