



Effects of Team Discussion on Students' Academic Performance in Social Studies

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

This study investigated the effectiveness of the team discussion method on students' achievement in Social Studies. A quasi-experimental, pre-test, post-test control group design from Passi National High School (PNHS) in 2018. Seventy-one grade 7 students were utilised as respondents. Simple random sampling was used to select 35 students from each section for the study and to allocate the group into experimental and control groups. The results reflect the student's performance in Social Studies using the established interpretations and descriptions. Furthermore, the conclusions exposed what method is better than another; team discussion or lecture. Hence, it implies utilising the better method to a greater extent.

Keywords: Team discussion; student; academic performance; social studies.

1. INTRODUCTION

According to Wilson, Suzane M. & Peterson, Penelope L. [1] the main kind of education is

teaching. You could think of it as a transaction between a teacher and a student in which one shares knowledge with the other. This idea has been held and put into effect, but it has now

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taken on a ritualistic quality in that just a small quantity of knowledge is imparted to the student, who memorizes it by heart and then repeats whatever he can remember, in whatever order or disarray, during the exam. In this way, the goal of education is defeated and reduced to a grade and a degree. Thus, the goal of education is misaligned in order to make a student remember a memorable lesson. The "true purpose would be to train a student in the art of learning, not only to make him study a subject."

The aforementioned system, where the teacher dominates the class and the students act as passive listeners, is prevalent in Philippine schools and institutions. They are not given any opportunity to participate in the teaching-learning process, and the idea of individual differences is "completely neglected." As a result, the issue of stagnation and waste is getting worse every day. There have been numerous attempts to systematize meeting procedures to prevent this. Individual variations among the students in the classroom and to improve the effectiveness and enjoyment of teaching and learning. The constructivists' contribution to this topic is particularly noteworthy. They unveiled a new perspective on education that saw learning as a constructive process in which students actively create knowledge as opposed to passively absorbing it.

According to Adewuya [2], team discussions are a common technique of teaching social studies in the Philippines. It operates around the tenet that numerous individuals should pool their knowledge and creative ideas in order to find answers to particular challenges. The discussion group's activities must be governed and led by the teacher or a student representative chosen by the class. Small group, devil's advocate, round table, panel discussion, opposing panel, and debate are just a few examples of the different ways that team discussions can be conducted. Students' sharing of ideas, the improvement of speech and listening skills in social situations, the clarification of concepts, and the encouragement of teamwork are some benefits of the approach. Despite all of the aforementioned benefits, there are a lot of drawbacks.

2. LITERATURE REVIEW

The teaching paradigm, approach, and technique employed today are all student-centered. Cooperative learning is one of the teaching

paradigms used today. Cooperative learning is one of the instructional strategies that has been thoroughly researched throughout the history of educational research, according to Slavin [3]. The educational benefits of cooperative learning include lowering prejudice among students and addressing the academic and social needs of at-risk kids [4]. The use of the cooperative learning method improves student engagement in class, academic performance, and learning motivation [5]. Cooperative learning method is neither an ordinary nor a group study. It may be defined as an active education strategy with small groups in order that the students will develop the learning of both themselves and the group members [6,7]. It has some cohesiveness in terms of its ideas and objectives. In these investigations, the person exhibits behavior that promotes his own and his friends' learning [8]. In cooperative learning method individuals endeavors to support both their own learning and colleagues to learn [9,8], (Doymuş, Şimşek & Şimşek, 2005; Aksoy & Doymuş, 2011; Doymuş, 2007; Fer & Cırık, 2007). According to Doymuş, Karacop, and İmşek [8], the cooperative learning method is a teaching strategy in which students work together to learn from one another while forming small mixed groups with a common goal in an academic subject. It also boosts students' communication and self-confidence while strengthening their problem-solving and critical thinking skills. Jimoh [10] also supported the idea that problem-solving method develops students' interest in critical thinking and evaluative reasoning. Morton Deutsch, a social psychologist who specialized in the study of social interdependence, laid the academic underpinnings for cooperative learning. Deutsch looked at how diverse group structures affected the process and results of group activities in a variety of social and professional contexts [11]. The two main theoretical stances on cooperative learning are cognitive and motivational. While the cognitive theories place more emphasis on the outcomes of collaboration, the motivational theories of cooperative learning stress the incentives for students to complete their academic tasks. The developmental and elaboration models of cognition can both be directly applied to cooperative learning. According to developmental theories, students' knowledge of important concepts enhances when they engage with one another while working on relevant tasks [12]. Students have a deeper comprehension of the subject matter to be learned when they communicate with one another and explain and discuss each other's

points of view. When people work together, they try to address possible disputes, which raises their understanding of each other [13]. In the view of Owuamanam and Owuamanam [14], minimal level of anxiety, cues, feedback are needed for effective learning. According to the elaboration theory, teaching others about a subject is one of the best ways to learn it. Cooperative learning activities improve elaborative thinking and more frequent explanation exchanges, which may deepen knowledge, improve the standard of reasoning, and improve accuracy of long-term memory (Johnson, Johnson, & Holubec, 1986). Numerous techniques are employed in the cooperative learning method's execution. These approaches vary according to the quantity of students, the social structure of the surrounding area, the physical layout of the classroom, and how they are applied to the course's subject [15]. Education activities have long been replaced by cooperative learning methods.

Teachers and educators are very concerned about the approach to be taken for effective teaching and learning. Additionally, it has been highlighted that the lecture approach, which is frequently employed in Philippine schools for the teaching and learning process, is not very effective because it does not allow pupils to connect with their surroundings and fully develop their intellectual potential. Obebe [16] conducted study on the understanding of Social Studies teaching strategies and material. He found that students were negatively impacted by the lecture style. These outcomes include complete lack of desire, incapacity to cover curricular material, unfavorable attitude toward the subject, and low accomplishment on the part of students and teachers. The lecture technique favors managing large classes and enables for the transfer of a lot of material to the learner. Despite its benefits, the lecture technique does not encourage pupils to innovate, inquire, or adopt a scientific mindset. It encourages pupils to memorize things that are simple to forget [17]. In a different study, Adeyemi [18] discovered that the lecture style is inadequate and ineffective for fulfilling the demanding goals of the Social Studies curriculum. He emphasized further that in order to raise the level of achievement and retention in teaching social studies in secondary schools beyond what is currently possible and to the satisfaction of the current Social Studies curriculum requirements, it is necessary to look for alternative strategies that are more suitable and effective.

According to Seweje [19], teachers typically use the talk and chalk (lecture) method, giving little thought to practical exercises. According to Seweje [19], a teacher is expected to be a facilitator whose primary job is to encourage students to actively engage in their education and so create meaningful connections between past information, new knowledge, and the learning process. According to Akinleye [20], children would excel in problem-solving and making decisions if given the chance to be heard and directed in a non-threatening environment. In order to discover and solve problems collectively, discussion is a process in which the teacher leads or guides the students as they voice their opinions and ideas. Ayodele [21] alerted that the objectives of the lesson will prompt the teacher to select the appropriate method. Teachers need to be well equipped in the methods of teaching as the teacher is responsible for translating policy into action in the classroom. However, effective and efficient Social Studies teachers must have the knowledge of what to teach and how to teach it. They must have the knowledge of the content and master the teaching methods and strategies to facilitate effective interaction between the learners and the content. They should also give room for students' own process of the exploration and discovery which is otherwise known as problem-solving method of teaching. According to Oyedeji [22], the discussion technique is based on the premise that problems or themes are more likely to have solutions when multiple people's knowledge and opinions are combined. This is consistent with the adage "Two good heads are better than one." Team discussion teaching engages both teachers and students in thinking. It also helps students develop their speaking and listening skills. However, the method has drawbacks, such as the potential for class discussions to veer off topic. Students with poor academic standing might not participate actively in the lessons. Probably some smart ones will dominate the conversation. Due to a lack of respect for other people's viewpoints, issues may arise among the participants, and the entire class may descend into chaos. The aforementioned issues could occur from improper use of the discussion approach. Therefore, when teaching social studies, students should be introduced to the procedures that will help them distinguish between information, knowledge, and reality. When learners get pertinent information and continuously digest it, they build knowledge. Information does not automatically become knowledge until learners actively participate in

processing it [18]. In order to increase students' active participation in the learning process, social studies professors should encourage debate as a technique of instruction.

Social studies is taught in the Philippines using a team discussion approach. It operates around the tenet that numerous individuals should pool their knowledge and creative ideas in order to find answers to particular challenges. The discussion group's activities must be governed and led by the teacher or a student representative chosen by the class. Different types of team discussions include small groups, devil's advocates, round tables, panel discussions, opposing panels, and debates [2]. Students' sharing of ideas, the improvement of speech and listening skills in social situations, the clarification of concepts, and the encouragement of teamwork are some benefits of the approach. Despite all of the aforementioned benefits, there are a lot of drawbacks. If discussion is not adequately reined in, the classroom may become a marketplace, and confusion may develop as a result of inadequate leadership and the unstructured nature of the structure.

Discussion, defined by Stephens and Stephens [23], is a process of giving and talking, speaking and listening, explaining and witnessing that broadens perspectives and promotes understanding amongst people. They continued by saying that the only way to be exposed to other points of view is through dialogue, and that exposure improves knowledge and inspires renewed interest in learning. According to Bridges [24], the purpose of conversation is to advance participants' knowledge, comprehension, or judgment. Discussion, in his opinion, is more serious than conversation because it calls for "mutual responsiveness" to the many points of view put out. According to Dillion [25], discussion is highly "structured and concerted," in which participants work together to tackle a problem or topic that is significant to them. According to Dillion [25], debate is a crucial means of connecting people with one another and helping them acquire the skills and sympathies necessary for participatory democracy. Abdu-Raheem [26] advised teachers of social studies to investigate and implement the discussion style of teaching as soon as possible to advance understanding among secondary school pupils. She continued by saying that if the discussion method is correctly implemented, it

will significantly raise kids' test scores in social studies.

3. METHODOLOGY

The study adopted a quasi-experimental, pre-test, and post-test control group design. The sample consisted of 71 grade 7 students of Passi National High School. Simple random sampling was used to select 35 students from each section for the study. Simple random sampling was also adopted to allocate the experimental and control groups.

The instrument used for the study was the Social Studies Achievement Test (SSAT) designed by the researcher. It consisted of 50 multiple-choice items used for pre-test and post-test. The validity of the instrument was ascertained by the expert in Social Studies. Item analysis procedure was also used to validate the instrument. The test items which were found to have a difficult index of 48%-100% and discriminating power of 23.31 and above were regarded as good items. The reliability of the instrument was determined through test-re-test. The instrument was first administered on 35 students from one section that was not used for the study. After two weeks, the instrument was administered again on the same sets of students.

The students were first exposed to pre-test to check their knowledge baseline in Social Studies. The students were randomly assigned to experimental and control groups. The experimental group was exposed to treatment through team discussion method and the control group was taught through the normal conventional lecture method. The post-test was then administered on all the students after the experiment to check their level of achievement. The data collected were analyzed using Statistical Package for the Social Sciences (SPSS). The statistical significance was set at 0.05.

3.1 Sampling Procedure

The study adopted a quasi-experimental, pre-test, post-test control group design. The sample consisted of 71 grade 7 students of Passi National High School. Simple random sampling was used to select 35 students from each section for the study. Simple random sampling was also adopted to allocate the group into experimental and control group. The instrument used for the study was the Social Studies Achievement Test

(SSAT) designed by the researcher. It consisted of 50 multiple-choice items used for pre-test and post-test.

3.2 Data Gathering Instruments

The researcher developed 50 multiple choice items used for pre-test and post-test. The instrument used for the study was the Social Studies Achievement Test (SSAT) designed by the researcher. The researcher-made test was designed to measure the academic performance of the grade 7 of Passi National High School. The test was validated by the three social studies teachers to obtain its validity.

3.3 Data Collection Procedure

Prior to week one, all necessary permissions were obtained from the principal to collect data and perform this action research project. A letter to the parents was also secured because the administration wanted to be sure the parents understood that it was possible their children may be videoed or have their pictures taken during this project. The permission from the respondents was also secured to answer the researcher-made test. The test was personally administered to the respondents by the researcher with research Assistant especially with the control group. The researcher retrieved and checked the test. Data collected were recorded, tabulated using rubric, analyzed and interpreted.

Chart 1. The performance of the students in Social Studies was interpreted

Mean score	Description
40.01 – 50.00	Very High
30.01 – 40.00	High
20.01 – 30.00	Average
10.01 – 20.00	Low
0.00 – 10.00	Very Low

3.4 Intervention

The respondents were first informed that they will be used in the study. All necessary information and instructions were given to them before the study started. The study adopted a quasi-experimental, pre-test, post-test control group design. The sample consisted of 71 grade 7 students of Passi National High School. Simple random sampling was used to select 35 students from each section for the study. Simple random sampling was also adopted to allocate the group

into experimental and control group. The instrument used for the study was the Social Studies Achievement Test (SSAT) designed by the researcher. It consisted of 50 multiple-choice items used for pre-test and post-test. The validity of the instrument was ascertained by the expert in Social Studies. Item analysis procedure was also used to validate the instrument.

To enhance the academic performance of the students in social studies, team discussion method was implemented. The intervention lasted for two weeks starting from November 6, 2017 to January 3, 2018. On the first day, both in the experimental and controlled group were given a pre-test. On the next day, the introduction of first topic which team discussion was implemented in the experimental group while conventional lecture was made in the controlled group. Class in the experimental divided into five groups which there are an assigned leader and secretary. For every lesson, team discussion was implemented. Every group were given an activity that they need to brainstorm and discussed as a team. Every member will have a chance to share their ideas on the topic given by the researcher. The leader will act as a presider and the secretary will list down the answers which were shared by the members of the group. While students are working with their assigned topic, I roamed around to check whether each member cooperate to finish their task on time. I observed that in each group, members are given equal chance to participate and can contributed their own ideas not only on the assigned leader. After which, they will be planned out what they need to present as a group. Every day, I see to it that there is a rotation of leader and secretary so that every member has an opportunity to be a facilitator of the group. I felt that the cooperation in each group is well observed. While in the controlled group, I used conventional lecture where the teacher “do the talking” and there was no team discussion implemented.

On the second week, the same scenario was made on both groups. The post test was administered on the last day.

3.5 Data Analysis

To compare the pre-test and post test result of the students, mean and T-test was utilized. It was analyzed using Statistical Package for the Social Sciences (SPSS).The statistical significance was set at 0.05.

Mean. The performance of the students in Social Studies was interpreted before and after intervention:

The formula in getting the mean is:

$$\bar{x} = \frac{\sum X}{N}$$

Where

\bar{x} = is the mean

$\sum x$ = is the sum of scores from 1 to n

N = is the total number of scores

Chart 2. The overall mean was computed and was described

Mean Score	Description
40.01 – 50.00	Very High
30.01 – 40.00	High
20.01 – 30.00	Average
10.01 – 20.00	Low
0.00 – 10.00	Very Low

4. RESULTS AND DISCUSSION

4.1 Students' Performance in Social Studies before the Intervention

The result shows that as an entire group the students were found to have an "average" performance in social studies (M=23.31, SD=4.17).

The experimental group (M=22.34, SD=4.30) obtained a higher mean result than the controlled group (M=24.25, SD=3.86) before the intervention although both groups were found to have an "average" performance in social studies.

The result is reflected in Table 1.

4.2 Students' Performance in Social Studies after the Intervention

The result shows that as an entire group the students have an "average" performance in

social studies after the intervention (M=29.20, SD=7.29).

The students in the controlled group or those exposed to the traditional lecture method have an "average" level of performance in social studies (M=24.26, SD=5.31) while the students in the experimental group or those exposed to cooperative teaching have a "high" level of performance in social studies (M=34.00, SD=5.56).

The result is shown in Table 2.

4.3 Difference in the Students' Performance in Social Studies before the Intervention

The result of t-test for independent samples as reflected in Table 3 shows that there is no significant difference in the performance of students belonging to controlled and experimental group in social studies before the intervention

$t(69) = -1.967, p=0.053$.

The result implies that students from both groups are comparable prior to the start of the intervention and that their social studies performance does not significantly differ.

The result is shown in Table 3.

4.4 Difference in the Performance in Social Studies of Students in the Controlled Group before and after the Intervention

The result shows that there is a significant difference in the social studies performance of the students in the pretest and posttest ($t(34) = -3.448, p=0.002$).

The result means that the social studies performance of the students exposed to lecture method significantly improved before and after the intervention. Hence, lecture method is considered to be effective in improving the students' performance in social studies.

Table 1. The mean and standard deviation results of students' performance in social studies before the intervention

Group	Mean	Description	Std. deviation
Controlled	22.34	Average	4.30
Experimental	24.25	Average	3.86
Total	23.31	Average	4.17

Table 2. The mean and standard deviation results of students' performance in social studies before the intervention

Group	Mean	Description	Std. deviation
Controlled	24.26	Average	5.31
Experimental	34.00	High	5.56
Total	29.20	Average	7.29

The results of the current research run counter to Okwilagwe's [15] assertion that the lecture approach is more effective at handling large courses and provides for the transfer of a lot of information to the student. Despite its benefits, the lecture technique does not encourage pupils to innovate, inquire, or adopt a scientific mindset.

The result is reflected in Table 4.

4.5 Difference in the Performance in Social Studies of Students in the Experimental Group before and after the Intervention

The result shows that there is a significant difference in the social studies performance of the students exposed to team discussion before and after the intervention ($t(35) = -12.323, p = 0.000$).

The result means that the social studies performance of the students exposed to team discussion significantly improved before and after the intervention.

Small groups, Devil's Advocates, round tables, panel talks, opposing panels, and debates are a few examples of different forms of group discussions [2]. Among the advantages of the approach are the encouraging of teamwork among students, the sharing of ideas, the development of speech and listening abilities in social settings, and the explanation of concepts. There are numerous disadvantages despite all of the aforementioned advantages. The classroom may turn into a marketplace if conversation is not properly controlled, and confusion may arise as a result of poor leadership and the institution's lack of discipline.

4.6 Difference in the Students' Performance in Social Studies after the Intervention

The result shows that there is a significant difference in the social studies performance of students in the controlled and experimental group ($t(69) = -7.547, p = 0.000$).

The result implies that students exposed to team discussion have a significantly better performance in social studies than the students exposed to the lecture method. Hence, it can be concluded that team discussion is a better teaching strategy in teaching social studies than lecture method.

Table 3. t-test results on students' performance in social studies before the intervention

Group	Mean	T	df	P
Controlled	22.34	-1.967	69	0.053
Experimental	24.25			

Table 4. t-test results in the performance in social studies of students in the controlled group before and after the intervention

	Mean	T	Df	P
Pretest	22.34	-3.448	34	0.002
Post test	24.26			

Table 5. t-test results in the performance in social studies of students in the experimental group before and after the intervention

	Mean	T	Df	p
Pretest	24.25	-12.323	35	0.000
Post test	34.00			

Table 6. t-test results on students' performance in social studies after the intervention

Group	Mean	T	Df	p
Controlled	24.26	-7.547	69	0.000
Experimental	34.00			

5. CONCLUSION

There was a significant difference in the students' performance in social studies after the controlled group was exposed to lecture method and the experimental group was exposed to team discussion. Since the mean score of students belonging to the experimental group was significantly higher than that of the students

in the controlled group, therefore team discussion is a significantly better strategy in teaching social studies than lecture method.

6. IMPLICATIONS

In teaching Social Studies, learners should be exposed to the processes that will make them identify the major difference among information, knowledge and reality. Learners gain knowledge when appropriate information is given to them and they process the information constantly. Information does not become knowledge automatically until learners have been actively involved in its processing [18].

The findings of this study showed that team discussion is a significantly more effective strategy than the traditional lecture method for raising students' performance in social studies. As a result, social studies teachers should encourage team discussion as a way to teach social studies that encourages active participation from students in the learning process. The basis of team discussions is the idea that many people should pool their knowledge and creative ideas in order to solve certain difficulties. By using team discussions, teachers can help their students learn how to communicate clearly, enhance their social communication and listening skills, and foster a sense of cooperation among the group.

7. RECOMMENDATIONS

Based on the findings and conclusions of the study, the researcher arrived at the following recommendations:

1. Since it was found out that team discussion is an effective method in improving students' performance in Social Studies, the teachers would be encouraged to use team discussion as a strategy in teaching Social Studies.
2. It would be a great help on the part of the Social Studies teachers if the school principals should provide necessary support to teachers in their pursuit towards effective teaching and learning of Social Studies in secondary schools by providing scholarships to pursue graduate studies and sending them to seminars, trainings and workshops.
3. The Department of Education should organize trainings and in-service trainings to develop teachers' skills in handling team discussion as a strategy in teaching Social

studies so that they could effectively implement this strategy in their teaching and will help improve the students' performance.

4. The government could sponsor seminars and trainings to enhance teachers' skills in using team discussion as a strategy in teaching. This will help alleviate the students' academic performance which is considered to be one of the serious problems of the society nowadays.

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Wilson, Suzane M, Peterson, Penelope L. Theories of learning and teaching what do they mean for educators?. National Education Association; 2006.
2. Adewuya SA. Social science methods. Ado-Ekiti: Green Line Publishers; 2003.
3. Slavin R. Educational psychology: Theory and practice; 2006. ISBN 0205470998, 9780205470990.
4. Sudzina, Mary R, James E. Gay, James E. Child study: A process for teachers' personal and professional growth. The Journal of Humanistic Education and Development; 1993. Available: <https://onlinelibrary.wiley.com/doi/abs/10.1002/j.2164-4683.1993.tb00081.x>
5. Polloway, Patton, Serna. Strategies for teaching learners with special needs; 2001.
6. Abrami PC, Poulsen C, Chambers B. Teacher motivation to implement an educational innovation: Factors differentiating users and non-users of cooperative learning. Educational Psychology. 2004;24(2):201–216. DOI: <https://doi.org/10.1080/0144341032000160146>.
7. Johnson, Johnson. Making cooperative learning work. Theory into Practice. 1999;38(2):67-73.
8. Doymuş, Karacop, Şimşek. Effects of jigsaw and animation techniques on students' understanding of concepts and subjects in electrochemistry. Educational Technology Research and Development. 2010;58(6):671-691.
9. Doymuş, Şimşek, Şimşek. The effects of cooperative learning methods on students'

- academic achievements in social psychology lessons. *International Journal on New Trends in Education and Their Implications*; 2005.
10. Jimoh SA. Providing quality education in the new millenium. Problems and prospects. Being the text of the lecture delivered at the 13th Convocation Ceremony of the Federal College of Education (Special), Oyo; 2001.
 11. Tanner, Chatman, Allen. Approaches to biology teaching and learning: science teaching and learning across the School–University Divide—Cultivating Conversations through Scientist–Teacher Partnerships; 2003.
 12. Damon. JVTE v13n2 - The effects of cooperative learning methods on achievement, retention, and attitudes of home economics students in North Carolina. 1984;13(2).
 13. Bukunola, Idowu. Effects of cooperative learning on students' academic achievement. *Journal of Education and Learning (EduLearn)*. 2012;9(3):246-255. DOI:10.11591/edulearn.v9i3.2071.
 14. Owuamanam DO, Owuamanam TO. Fundamentals of educational psychology. Lagos: Bolabay Publishers; 2004.
 15. Maloof, White. Şimşek et al. The effect of cooperative learning and traditional method on students' achievements, identifications and use of laboratory equipment in general chemistry laboratory course. *Eurasian Journal of Educational Research (EJER)*. 2005;7(28):31-43.
 16. Obebe, Bolarinde. An assessment of knowledge of social studies content and method of graduating elementary teachers (grade II) of Lagos and Ondo States, Nigeria; 1981.
 17. Okwilagwe EA. Modern trends in secondary school geography teaching. In Ayodele (ed) *Teaching Strategies for Nigerian Secondary Schools*. Powerhouse, Press and Publishers; 2002.
 18. Adeyemi BA. An evaluation of social studies curriculum in Osun State College of Education, Nigeria. Unpublished M.A. (Ed). Thesis, OAU, Ile-Ife; 2003.
 19. Seweje RO. Defining issues in science education. 24th Inaugural lecture, University of Ado-Ekiti, March, 8th; 2010.
 20. Akinleye GA. Enhancing the quality of life in this complicated but dynamic world. 25th Inaugural lecture, University of Ado-Ekiti, April 6th; 2010.
 21. Oyedeji OA. Assessing gender factor in some science and mathematics texts in Nigeria. *Zimbabwe Journal of Education Research*. 1996;8(1):45-53.
 22. Stephen D, Stephen P. Discussion as a way of teaching. United State of America. Jossey Bass Press. A Willey Imprint; 2005. Available:www.josseybass.com
 23. Ayodele CA. Relative effect of demonstration and video tape mediated instructional strategies on secondary school students' performance in Yoruba language. Unpublished B.A. (Ed) Project, University of Ilorin, Ilorin; 2007.
 24. Bridges D. Education, democracy and discussion. Lanham, Md: University Press of America; 1988.
 25. Dillon J. Using discussion in classrooms. Buckingham, England: Open University Press; 1994.
 26. Abdu-Raheem BO. Relative effects of problem-solving and discussion methods on secondary school students' achievement in Social Studies. Unpublished Ph. D thesis, University of Ado-Ekiti, Ado-Ekiti; 2010.

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