



## EFFECTS OF COOPERATIVE LEARNING METHOD ON SENIOR SECONDARY STUDENTS' ACHIEVEMENT IN READING SKILLS IN JOS NORTH LGA, PLATEAU STATE, NIGERIA

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### Abstract

*This study investigated the effects of cooperative learning method (CLM) on senior secondary students' achievement in reading skills in Jos North Local Government Area, Plateau State, Nigeria. The study employed the pre-test post-test quasi-experimental research design of the non-equivalent groups using a population of 1, 412 senior secondary students in the 22 public schools and 76 students as sample which formed the experimental and control groups from two randomly sampled public schools in the study area. Six objectives, six research questions and six hypotheses guided the study. Data were collected using Reading Achievement Test (RAT), which was adapted by the researchers from SS2 course book titled: New Concept English for Senior Secondary Schools, Book Two and was validated by two experts from University of Jos. The test-retest method was used to ascertain the reliability of the instrument at the coefficient of 0.89. The data obtained were analysed using mean and standard deviation to answer research questions and t-test was used to test the hypotheses at  $p > 0.05$  level of significance. The findings revealed that students who were taught reading skills using cooperative learning method achieved higher than those taught using the lecture method. The findings also revealed that cooperative learning method had significant differences in the achievement mean scores of the experimental group against the control group. Based on the findings, the researchers concluded that cooperative learning method is effective in teaching senior secondary school students' reading skills. The researchers recommended among others that senior secondary school teachers of English language should embrace cooperative learning method as an innovative tool in the classroom for better students' achievement in English Language concepts, especially in reading skills.*

**Keywords:** Achievement, Cooperative Learning Method, Effects, Reading Skills

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## Introduction

English language as a global language and an official language in Nigeria has developed and from its widespread, has attained the position of a universal language, and this calls for ensuring that the skills of the language are mastered for effective communication. Reading is a powerful tool for learning, as it exposes one to new ideas, perspectives, and experiences (Carr, 2023). Anthony (personal communication, May 27, 2023) observed that quite a number of factors like inadequate instructional materials, poor learning condition and teaching strategies, faulty foundation in English language, English language teachers' incompetence, and so on, contribute to the high level of inadequate reading comprehension skills in English language.

Reading skills in schools have been neglected according some previous studies. Snow and Serry in Dixon and Oakhill (2024) describe comprehension skills as including those abilities that are required to answer questions on typical reading comprehension assessment papers. In contrast, reading comprehension strategies describe actions that a reader uses when comprehending text – these might be considered habits of thought that may be applied when faced with the task of comprehending an unfamiliar or challenging text Castles, Rastle and Nation in Dixon and Oakhill (2024). The following reasons are given for the common breakdowns in reading comprehension such as weak decoding skills, limited background knowledge, inadequate vocabulary and poorly developed comprehension skills to mention a few Ascend Smarter Intervention (2025). Government or non-governmental agencies that sponsor scholarly or academic competitions focus on essay writing, debate and crafts, and pay less attention to reading competitions. This has contributed to the minimal attention or priority given to reading.

Some strategies deployed by English language teachers have not been helpful towards improving the reading ability of the students. English language classes on reading comprehension are sometimes carried out with methods like reading and answering the questions that follow with little or no guidance from the teacher, and most of them who are still struggling,

end up not grasping any tangible information and are not able to answer both literal and inferential questions in passages. Another strategy is the one that involves the teacher reading the passage out to the students and asking them to answer the questions. Adopting the use of commercial reading schemes and text books has been shown to be ineffective in raising student attainment in reading comprehension (James-Burdumy et al., in Dixon & Oakhill, 2024). Similarly, studies of fluency indicate that increasing reading rate and accuracy do not always result in improved comprehension (Scammacca et al. in Dixon & Oakhill, 2024). These methods have been challenging, and this calls for attention towards adopting a method that would make students engage in the reading activity, take up responsibility, share opinions and ideas, and proffer solutions by tackling the questions in their right forms. According to Ekeh, Jacob, Pillay and Idemudia, 2023, some teachers did not understand the various strategies to optimise reading comprehension, and some lacked the knowledge of the different learners' learning preferences to plan their reading comprehension lessons.

The experience and observation of the researchers show that teachers and parents have become curious to know the appropriate learning method to use in order to ensure that their students and children are inculcated with good reading culture or habits. This is not only limited to parents and teachers, but also the students, who have been encountering challenges in their reading skills both in English language and other subjects of interest or concern. From further inquiries by the researchers, it is observed that most of these students lack the ability to read alone and are not always measuring up with their counterparts in the classroom owing to the fact that their level of understanding is very low or they always like to isolate themselves or stay on their own. According to Ogbuanya and Owodunni (in Alhassan, 2019), the conventional methods are content driven and certainly not learner-centred. These methods which are predominantly used in educational institutions for teaching are based on behavioural learning theories which emphasize knowledge transmission from the teacher to

passive students and encourage rote memorization of fact (Mirkov in Alhassan, 2019). In order to bridge this gap, an active learning method, which is characterized by students talking with others, that is engaging in dialogues, interacting with others (members of the group, whether a pair, triad, or group of four), generating new ideas and cognitive structures (discovering their own insights and meaning from the learning activities), determining their own direction, that is coordinating with group-mates as to the direction and speed of work is needed so as to ensure that isolated learners (working separately from others), or silent learners are carried along. This prompted the in-depth look on how effective the Cooperative Learning Method (CLM) would be in ensuring that senior secondary school students develop effective and efficient reading skills.

Cooperative Learning Method (CLM) focuses on group work. It allows students to work as a team on a planned activity with the guidance of the teacher. This ensures that students of different abilities and individual differences are put together to work on a given task in order to achieve a common goal. It is a study approach aimed to manage classroom activities into academic and social learning experiences. The process does not just merely involve arranging students into groups but it also ensures the structuring of positive interdependence. Basically, students have a lot of differences, whether in genders, races or learning styles, intelligence and to mention but a few, but cooperative learning is hoped to dissolve all these diversities into cognitive, behavioural and social interdependence.

Cooperative Learning is an instructional method in which students work in small groups to accomplish a common learning goal with the guidance of the teacher (Rigacci, 2020). The author further made reference to the words of Benjamin Franklin who once said, "Tell me and I forget. Teach me and I remember. Involve me and I learn". This emphasizes the importance of Cooperative Learning Method (CLM) as students get to apply the comprehended knowledge in an environment more similar to the one they will encounter in their future work life. It enhances the reading ability of learners as it considers positive

interdependence devoid of unhealthy competitions among learners, individual accountability, equal participation and simultaneous interaction. The students in CLM are exposed to instructions in some cooperative learning techniques like face-to-face interaction, think-pair-share (TPS), jigsaw exercises, peer tutoring, rally table and structured problem-solving, students' teams-achievement division (STAD), to mention but a few, which help them to process, read information and complete given tasks. When students work in groups, they get to share ideas on a given task (comprehension passage), ask questions and proffer solutions. Specifically, the Students' Team-Achievement Division (STAD) technique of CLM was utilised in this study.

Reading as emphasized has a lot to do in the productiveness of students and it is an activity that involves looking at written symbols for the sole purpose of making meaning or sense out of it. It is also of interest to know that there is more to the term 'Reading' than it was defined. Rochester Institute of Technology (RTI) (2023a), opined that many theories abound, but current thinking in the field of reading research proposes that reading is an interactive process in which the reader's prior knowledge of the world interacts with the message conveyed directly or indirectly by the task. Reading is a process where the teachers and students practice the skill together, with the instructor providing feedback and correction. The peer/collaborative learning opportunities can occur either prior to or after reading: students work in peer groups to practice their reading skills and share ideas. Learning is achieved through the process of development; hence, learners should be active participants in the process of learning. Activity is vital in learning. By engaging in meaningful activities, learners interact with peers and more knowledgeable people. Through interaction, learners develop dialogues within the structure of activities; as a result, learning and development occur (RTI) (2023b). This submission is further buttressed by Wiliam and Leahy explain in Jones (2023) that there are two rather distinct purposes that people express for cooperative and collaborative learning. The first is that because adults are required to work

together in their jobs and communities, therefore, schools should prepare young people to work in this way. The second is that having students work together can produce greater learning of subject matter than would be possible by having students work individually or in competition with their peers.

The need for teachers to get acquainted with cooperative learning method is paramount towards ensuring that students of English language grasp adequate fundamentals in reading, which will lead to the attainment of learning objectives. CLM is expected to give the teacher or knowledge facilitator an avenue to understand the learners and regroup them where and when necessary. Also, it calls for a more reflective focus on both the teacher and the learner. The teacher thinks through what has transpired in the class, the successes and weakness and this will help him or her to prepare better in subsequent classes. On the other hand, the learner will also have to go through the task that was done in the group, ask questions either to his or her peers or to the teacher, who at the end, gives feedback that would help the learner adjust in other group activities.

Many a times, learners who have not absolved proper reading skills like inferring or decoding, vocabulary mastery, understanding of given sentences, meaning interpretation, and so on are faced with challenges in online examinations., many exams like Unified Tertiary Matriculation Examination (UTME), Scholastic Aptitude Test (SAT), to mention but a few are structured or taken online. For instance, in Nigeria, secondary school graduands sit for the Unified Tertiary Matriculation Examination (UTME) conducted by Joint Admission and Matriculation Board (JAMB), and massive failures are often recorded as reflected by the result of 2021/2022 students, where 6,944,368 sat for the examination but only 973,384 passed with scores to get into Nigerian universities, and this shows that only 14% passed while 86%, representing 5,970,984 students failed woefully (Idris, 2021). Ibrahim (personal communication April 17, 2023) majority of students have not developed proper reading and comprehension skills and confidence to face the examination, so this culminates to massive failure year after year.

Applying the Cooperative Learning Method hopefully, will aid the learners to think outside the box and understand the different levels of comprehension and questions.

In addition, senior secondary school students are also exposed to comprehension and summary passages in external examinations like West African Senior School Certificate Examination (WASSCE), General Certificate of Education (GCE) and Senior Secondary Certificate Examination (SSCE) and this was captured by Awosiyan and Idoko (in Patrick, Sui, Didam & Ojo, 2014), who said that Nigeria alone records 80 per cent of the population of candidates who sit for the West African Senior School Certificate Examination and pays 50 per cent of the funding of the council, but it is worrisome that the overall analysis of performance does not favour the country. One of the challenges they face is the inability to read and comprehend both questions and passages, and this calls for a more tactful and conscientious focus towards improving the reading skills of these learners to prevent some of them from spending a lot of time on those passages which at the end, affects their performance in other areas (Olu, 2020). The different reading modes or types like scanning, skimming, intensive reading and extensive reading are not mastered and applied where and when necessary. Therefore, there is need to investigate the effects of cooperative learning method on senior secondary school students' achievement in reading skills in Jos North LGA, Plateau State, Nigeria.

### Literature Review

Reading is defined as a cognitive process that involves decoding symbols to arrive at meaning. It is an active process of constructing meanings of words (Sandhu, 2022). The author went further to say that reading is a thinking process which allows the reader to use what he or she may already know, also called prior knowledge, and during this process, the reader uses strategies to understand what they are reading, uses themes to organise ideas, and uses textual clues to find the meaning of new words. Sandhu discussed three stages in the reading process, which includes; pre-reading, during reading and after reading. The pre-reading stage

allows the reader to activate background knowledge, preview the text, and develop a purpose for reading. It was suggested that the strategy for students to utilize during this stage is to look at the title of the selection and list all the information that comes to mind about the title. The during-reading stage occurs when the reader makes predictions as they read and then confirms or revises the predictions. The final stage allows the reader to retell the story, discuss the elements of a story, answer questions, and/or compare it to another text.

First, reading is a multifaceted process involving words recognition, comprehension, fluency and motivation (Leipzig, 2014). Reading is an activity that involves looking at written symbols for the sole purpose of making meaning or sense out of it. It is also of interest to know that there is more to the term reading than it was defined. Rochester Institute of Technology (RIT) (2023), opined that many theories abound, but current thinking in the field of reading research proposes this definition of reading as “an interactive process in which the reader’s prior knowledge of the world interacts with the message conveyed directly or indirectly by the task”. Reading is a process.

According to Herrity (2023), some essential skills that help one to read and understand passages are:

- 1 . **Decoding:** This is a skill that relies on your ability to sound out words you have heard but never seen written out. It relies on phonemic awareness, which is the ability to hear individual sounds in words and connect those sounds to letters. Making the connection between a letter and group of letters is a crucial step to “sounding out” or decoding words.
- 2 . **Fluency:** This refers to a mix of different factors. First, it focuses on your ability to read clearly with flow. Fluency also focuses on your ability to decode a new vocabulary quickly while reading. For example, as children become more fluent in their reading, they will be able to quickly find meaning and understanding of what they read, which contributes to understanding the texts.
- 3 . **Vocabulary:** This is the ability to decode or

determine the meaning of new words which can also influence a reader’s reading comprehension. When a person can quickly interpret new meanings and identify relationships between new vocabularies and familiar terms, it can increase the person’s ability to make assumptions, form ideas and generally better understand the texts being read.

- 4 . **Inference:** This is also a key element of reading comprehension. When readers make inference, they are connecting information from texts to their own ideas and opinions that help them identify the meaning of what they read. For instance, when reading an article about plastics in the oceans, a reader might make an inference that to reduce the amount of plastic waste, he/she should recycle. Inferring happens when a reader reads a text where the purpose and meaning of the text is not implicitly stated. Additionally, the ability to connect ideas and make inferences can help increase retention.
- 5 . **Retention:** Reading comprehension is typically all about retaining what we read. Comprehension is based on the retention of information. By practicing the summary skills and remembering what was read, a reader can further strengthen his or her reading skill

Cooperative learning method is a type of teaching strategy or learning method which allows students to work in groups in order to achieve a common goal. It does not just involve students working in groups, they are also accountable to themselves and to their groups. This learning method is a bit different from collaborative learning method where students are assessed as a group. In cooperative learning method, students are assessed as individuals and as a group. This builds a sense of responsibility towards ensuring the attainment of learning objectives both as an individual and as a group.

The importance of this learning method cannot be overemphasized as it has proved to be effective in the teaching and learning process. Learners’ works as a team, carry out their tasks, and solve their problems. This fosters cooperation among the students and they can easily resolve

their differences as teammates. The teacher in this instance serves as a knowledge facilitator, giving out task to be carried out and guiding the learners through effective supervision and monitoring. Lohman, Firestone and Levitas (2021), argued that cooperative learning method is a teaching method where students of mixed levels of ability are arranged into groups and rewarded according to the group's success, rather than the success of an individual member. The authors added that cooperative learning is sometimes thought of as 'group work,' but groups of students working together might not be working collaboratively. The authors' argument contradicts their opinion that one of the elements of cooperative learning is 'individual accountability and stated that each student is accountable for their own contribution to the group and that clearly described goals ensure that each student knows what he or she is responsible for and what the group is responsible for.

Again, Annenberg (2023), opined that cooperative learning involves students working together in small groups on a structured activity. The members of the groups learn to work as a team to accomplish a specific goal, to solve a problem, to complete a project, or to develop a product. This implies that the teacher plans the activity to be carried out, and ensures that each learner is held accountable. Students are responsible not only for learning the material, but also for ensuring that the other members of the group learn the material too.

In order to achieve the learning objectives using the cooperative learning method, some techniques or methods are to be deployed by the teacher to ensure effectiveness in the teaching and learning process. Methods or techniques refer to the different approaches or strategies used by the teacher in the classroom in order to ensure that the instructional or learning objectives are attained.

In order to find out the views of other researchers in relation to the problem under study, the researcher reviewed the following empirical studies. Gull and Shehzad (2015), investigated: "Effects of cooperative learning on students' academic achievement in Pakistan". The effort of the study was to determine the effect of cooperative learning method on students'

achievement in subject of Education. Quasi experimental design, with pretest and posttest of control and experimental group was used to achieve the target of the study. The sample of the study consisted of 63 female students enrolled in Grade 12 of a public college. An achievement test was used as a pretest, the students were then divided into experimental and control groups. Student team achievement division (STAD), Teams game tournament (TGT) and Jigsaw II were the cooperative learning strategies used. The experimental group was taught using the three cooperative learning techniques and the control group was taught using the lecture method. The independent sample t-test was used for the data analysis.

The findings after the pretest revealed that there was no significant difference between the two groups ( $p=.825$ ) leading to the assumption that both groups were equal in their levels of achievement before intervention. After the posttest, the result of the finding showed that there a significant difference in the mean scores of both the experimental and control group. The study concluded that cooperative learning method had a positive effect on academic achievement of students enrolled in the subject of Education. The study recommended that teachers can use the cooperative learning method in their classes. The gap between this study and the present study is on the aspects of title, location, sample population, instrument for data collection and educational level of the subjects.

Andhani, Irma and Intan (2018), investigated: "Students' perception in applying cooperative learning in EFL classroom in Indonesia". The study focused on college students' perceptions of cooperative learning in EFL classrooms. The purpose of the study was to know students' opinion about applying cooperative learning in the classroom especially in EFL classroom. The study employed case study research design. Participants in the study were final year students of Indonesian education study programme. The number of participants was 33 students. The data were collected using questionnaire consisted of twenty (20) questions that relate with cooperative learning. The data was analysed using the mean and percentage.

The result of the research showed that the final year students of Indonesian education study programme of IKIP Siliwangi Bandung had positive responses toward the implementation of cooperative learning. Also, cooperative learning helps the students to learn a language faster as a team. The study recommended that ESL teachers should endeavour to apply cooperative learning method in their language teaching programmes. The gap between this study and the present study is in the areas of the title, location, population and sample, research design, instrument for data collection, which is questionnaire and method of data analysis.

Remache, Gemanía and Yanez (2019), investigated: “The effects of cooperative learning on reading comprehension of High school students in Unidad Educativa, Ecuador”. The study aimed at determining the influence of cooperative learning in reading comprehension of high school students at Unidad Educativa “Riobamba” during 2017-2018 school period. The study made use of quasi-experimental and control group research design. A pre-test and post-test were applied based on the Cambridge PET (Primary English Test), reading section. The data analysis was done using T-student mathematical test.

It was concluded through the findings that the students improved their reading comprehension through cooperative work in pairs and in groups as well. It was recommended that teachers practice cooperative learning in the classroom to improve students’ reading comprehension in order to optimize their development in English language. The difference between this study and the present study is on the aspects of title, location, sample population, instrument for data collection and educational level of the subjects.

Tankersley and Cuevas (2019), investigated: “The effectiveness of cooperative learning in the reading classroom in Dawsonville, Georgia”. The research examined the effectiveness of specific methods of cooperative learning on reading comprehension, motivation, and attitudes. The study implemented collaborative strategic reading (CSR) and the jigsaw method in a rural public elementary school

and included 60 participants from 3<sup>rd</sup> to 5<sup>th</sup> grade reading classes. The population of the study was 375 students from kindergarten. The study used quasi experimental control group design. One group used the CSR method to read information on four different topics while the other group read information on the same topics using jigsaw method. The instruments for data collection were reading materials on the topics: deserts, giraffes, Rosa Parks, and recycling. The data collected were analysed using ANCOVA and ANOVA to test the level of difference in each group both in their pretests and posttests at 0.001 level of significance.

The findings obtained showed that neither of the methods led to greater gains in the areas than the other. However, when controlling for prior knowledge on the four topics, the CSR group made significant gains on the first two tests. This suggests that the benefits of Jigsaw as a cooperative learning method may fade long term while CSR benefits may persist. The study recommended the use of Collaborative reading strategy by the teachers owing to the significant gains and prospective persistence. Also, it recommended that 150 participants should be used instead of 60 used in the study. The gap between this study and the present study is on the aspects of title, location, sample population, instrument for data collection and educational level of the subjects.

Munawar and Sittar (2022), studied: “Effects of cooperative learning on English reading skill at Elementary Level in the subject of English in Faizpure, Sheikhpura, Pakistan”. The purpose of the study was to examine the effects of cooperative learning on achievement in English reading of the Grade 7<sup>th</sup> students. Total number of students were 64 in both sections who were studying in Grade 7<sup>th</sup> in Government Girls’ High School Faizpure, Sheikhpura. The study used quasi-experimental study with a non-equivalent control group, pretest and posttest design. One research question was raised and one hypothesis was formulated. The simple random sampling technique was used to select the experimental and control group. The experimental group was taught using student teams achievement division (STAD) and Jigsaw. The control group was taught

using grammar translation method. The instrument for data collection was a well-structured questionnaire and English Reading test (ERS). The data collected were analysed through 21-version SPSS, comparison of pretest and posttest was done to ascertain the level of significant differences. The findings of the study showed that STAD and Jigsaw strategies of cooperative learning had significant effect on English reading comprehension of the Grade 7<sup>th</sup> students. The study recommended the use of cooperative learning in teaching the students in English classroom. The gap between this study and the present study is on the aspects of title, location, sample population, instrument for data collection and educational level of the subjects.

Nwune (2022), investigated the “Effects of cooperative learning on primary school pupils’ reading achievement in Awka Metropolis”. The study investigated the effect of cooperative learning on reading achievement of primary school pupils in Awka Metropolis in Awka South Local Government Area, Nigeria. Two research questions and two null hypotheses guided the study. The study adopted a quasi-experimental design specifically the pre-test, post-test control group design. The population comprised of 3,419 primary five pupils in Awka Metropolis and 65 pupils selected from schools that use Macmillan English who participated in the study formed the sample for the study. Reading Achievement Test (RAT) with a reliability coefficient of 0.89 determined using Kuder-Richardson Formula 20 was used to collect data for the study. Pupils in the experimental group were taught reading using reciprocal peer tutoring, a type of cooperative learning considered in the study while those in the control group were taught reading using lecture method. Data collected were analysed using mean scores for research questions and Analysis of Covariance (ANCOVA) for testing the hypotheses at 0.05 level of significance. Major findings revealed that pupils taught reading with Reciprocal Peer Tutoring (RPT) performed significantly better than those taught with lecture method. The difference between this study and the present study is on the aspects of title, location, sample population, instrument for data collection, method of data analysis and educational level of

the subjects.

### **Aim and Objectives of the Study**

The aim of the study was to determine the effects of cooperative learning method on senior secondary school students’ achievement in reading skills in Jos North Local Government Area, Plateau State, Nigeria. The specific objectives were to:

- 1 . determine the level of SS2 students’ achievement in predicting skill before and after exposure to treatment.
- 2 . ascertain the level of SS2 students’ achievement in synthesizing skill in reading comprehension before and after exposure to treatment.
- 3 . assess the extent of SS2 students’ inferential skill before and after exposure to treatment.
- 4 . find out the extent to which SS2 students’ utilize their questioning skill before and after exposure to treatment.
- 5 . determine the level of SS2 students’ achievement in using summarisation skill before and after exposure to treatment.
- 6 . find out the level of SS2 students’ achievement in reading skills before and after exposure to treatment.

### **Research Questions**

The study was guided by the following research questions.

- 1 . What is the pre-test and post-test predicting skill achievement mean scores of SS2 students in the experimental and control groups?
- 2 . What is the pre-test and post-test synthesizing skill achievement mean scores of SS2 students in the experimental and control groups?
- 3 . What is the pre-test and post-test inferential skill achievement mean scores between the experimental and control groups?
- 4 . What is the pre-test and post-test questioning skill achievement mean score between the experimental and control groups?
- 5 . What is the pre-test and post-test summarisation skill achievement mean scores between the experimental and control groups?

- 6 . What is the pre-test and post-test reading skills achievement mean scores of SS2 students between the experimental and control groups?

### Hypotheses

The following hypotheses were formulated to guide the study and were tested at .05 level of significance.

- 1 . There is no significant differences in the post-test predicting skill achievement mean scores between the experimental and control groups.
- 2 . There is no significant differences in the post-test synthesizing skill achievement mean scores between the experimental and control groups.
- 3 . There is no significant differences between the post-test inferential skill achievement mean scores between the experimental and control groups.
- 4 . There is no significant differences in the post-test questioning skill achievement mean scores between the experimental and control groups.
- 5 . There is no significant differences in the post-test summarisation skill achievement mean scores between the experimental and control groups.
- 6 . There is no significant differences in the post-test reading skills achievement mean scores between the experimental and control groups.

### Method and Procedure

The pre-test post-test quasi-experimental research design of the non-equivalent groups was adopted. The choice of this design is that intact classes were used as randomization would affect the planned programmes of the selected schools. Also, the study focused on treatment and its effects and was not concerned with large number which comprised two groups, the experimental and control groups.

The population was made up of all 1,412 SS2 students of the 22 public secondary schools in

Jos North Local Government Area, Plateau State, Nigeria. A sample of 76 students from two sampled schools and one intact class from each of these schools were used for the study (School A was the experimental group, while School B was the control group). The researcher employed the simple random sampling.

The instrument used for data collection was a test tagged: "Reading Achievement Test (RAT)". This was used to measure these reading skills; predicting, synthesizing, inferring, questioning and summarisation. The instrument was based on a comprehension passage that was adapted from SS2 course book New Concept English for Senior Secondary Schools, Book Two (Eyisi, Adekunle, Adepoju, Ademola-Adeoye, Adam & Eto, 2019). Based on the passage, questions that tested students' ability to predict, synthesize, infer, question and summarise ideas were adapted; questions 1, 7, 9 and 10 that capture some of the intended skills were added and existing questions 4 and 8 were modified to capture the expected skills to be acquired. Question 'g' and 'f' in the original questions were removed from the Reading Achievement Test as they did not relate to the skills of interest in this study. The instrument had two sections. Section A had one item, while Section B was made up of five items on each of the reading skills. Each item carried allotted marks which were specified in the marking guide. Each skill was scored over 20%, hence, the five skills were equalled to 100%. The total obtainable score was 100% while the cut-off-mark for pass was 50%.

The instrument was duly validated by two experts from the University of Jos and the test-retest was used to test the reliability of the RAT. The treatment lasted for six weeks according to the schools' timetable because, it allowed for the smooth conduct of the study in order to avoid any clash with other subjects and school programmes. The mean and standard deviation were used to answer all the research questions, while the t-test analysis was used to test the null hypotheses at .05 level of significance.

### Results

**Research Question One:** What is the pre-test and post-test predicting skill achievement mean scores of SS2 students in the experimental and control groups?

**Table 1**  
Results of Pre-test and Post-test in Predicting Skill Achievement Mean Scores of SS2 Students in the Experimental and Control Groups

Group		N	Mean	SD	Mean gain	Mean Dif.
Experimental	Pre-test	35	5.88	3.21	9.06	7.54
	Post-test	35	14.97	3.21		
Control	Pre-test	41	5.68	3.11	1.75	
	Post-test	41	7.43	2.84		

The results of Table1 revealed that the experimental group had a pre-test mean scores of 5.88, standard deviation of 3.21 and a post-test mean scores of 14.97, standard deviation of 3.21 with mean gain between the pre-test and post-test of 9.06, while the control group had a pre-test mean scores of 5.68, standard deviation of 3.11 and a post-test mean scores of 7.43, standard

deviation of 2.84 with mean gain between the pre-test and post-test of 1.75. The results indicated a mean difference between the experimental and control group of 7.54 in favour of the experimental group. This implied that cooperative learning method improves SS2 students’ achievement in predicting skill more than lecture method.

**Research Question Two:** What is the pre-test and post-test synthesizing skill achievement mean scores of SS2 students in the experimental and control groups?

**Table 2**  
Results of Pre-test and Post-test in Synthesizing Skill Achievement Mean Scores between the Experimental and Control Groups

Group		N	Mean	SD	Mean gain	Mean Dif.
Experimental	Pre-test	35	6.60	3.71	8.80	7.26
	Post-test	35	15.40	2.77		
Control	Pre-test	41	6.04	3.15	2.10	
	Post-test	41	8.14	2.92		

The results from Table 2 showed that the experimental group had a pre-test mean scores of 6.60, standard deviation of 3.71 and a post-test mean scores of 15.40, standard deviation of 2.77 with mean gain between the pre-test and post-test of 8.80, while the control group had a pre-test mean scores of 6.04, standard deviation of 3.15 and a post-test mean scores of 8.14, standard

deviation of 2.92 with mean gain between the pre-test and post-test 2.10. The results indicated a mean difference between the experimental and control group of 7.26 in favour of the experimental group. This implied that cooperative learning method improves the achievement of SS2 students in synthesizing skill more than lecture method of teaching synthesizing skill of reading.

**Research Question Three:** What is the pre-test and post-test inferential skill achievement mean scores of SS2 students in the experimental and control groups?

**Table 3**  
Results of Pre-test and Post-test in Inferential Skill Achievement Mean Scores of SS2 Students in the Experimental and Control Groups

Group		N	Mean	SD	Mean gain	Mean Dif.
Experimental	Pre-test	35	7.02	3.41		
	Post-test	35	15.48	2.60	8.46	
						7.24
Control	Pre-test	41	6.39	3.06		
	Post-test	41	8.24	3.16	1.85	

The results from Table 3 revealed that the experimental group had a pre-test mean scores of 7.02, standard deviation of 3.41 and a post-test mean scores of 15.48, standard deviation of 2.60 with a mean gain between the pre-test and post-test of 8.46 in favour of the post-test, while the control group had a pre-test mean scores of 6.39, standard deviation of 3.06 and a post-test mean scores of 8.24, standard deviation of 3.16 with mean gain of 1.85 in favour of the post-test. The

results indicated a post-test mean difference between the experimental and control group of 7.24 in favour of the experimental group. This implies that cooperative learning method improves the achievement of SS2 students in inferential skills aspect of reading more than lecture method. Hence, the researcher submitted that cooperative learning method helps to improve students’ achievement more than the lecture method.

**Research Question Four:** What is the pre-test and post-test questioning skill achievement mean scores between the experimental and control groups?

**Table 4:** Results of Pre-test and Post-test in Questioning Skill Achievement Mean Scores between the Experimental and Control Groups.

Group		N	Mean	SD	Mean gain	Mean Dif.
Experimental	Pre-test	35	8.20	3.86		
	Post-test	35	16.31	2.36	8.11	
						5.66
Control	Pre-test	41	7.62	3.32		
	Post-test	41	10.65	3.16	3.03	

The results from Table 4 showed that the experimental group had a pre-test mean scores of 8.20, standard deviation of 3.86 and a post-test mean scores of 16.31, standard deviation of 2.36 with mean gain between the pre-test and post-test of 8.11, while the control group had a pre-test mean scores of 7.62, standard deviation of 3.32 and a post-test mean scores of 10.65, standard

deviation of 3.16 with mean gain between the pre-test and post-test 3.03. The results indicated a post-test mean difference between the experimental and control group of 5.66 in favour of the experimental group. This implied that cooperative learning method improves the achievement of SS2 students in questioning skills aspect of reading more than lecture method.

**Research Question Five:** What is the pre-test and post-test summarisation skill achievement mean scores between the experimental and control groups?

**Table 5:** Results of Pre-test and Post-test in Summarisation Skill Achievement Mean Scores between the Experimental and Control Groups

Group		N	Mean	SD	Mean gain	Mean Dif.
Experimental	Pre-test	35	4.57	3.24	10.25	8.22
	Post-test	35	14.82	3.53		
Control	Pre-test	41	4.46	2.89	2.14	
	Post-test	41	6.60	2.87		

The results from Table 5 revealed that the experimental group had a pre-test mean scores of 4.57, standard deviation of 3.24 and a post-test mean scores of 14.82, standard deviation of 3.53 with mean gain between the pre-test and post-test of 10.25, while the control group had a pre-test mean scores of 4.46, standard deviation of 2.89 and a post-test mean scores of 6.60, standard deviation of 2.87 with mean gain between the pre-

test and post-test 2.14. The results indicated a post-test mean difference between the experimental and control group of 8.22 in favour of the experimental group. This implies that the experimental group achieved higher scores than the control group. Hence, cooperative learning method improves SS2 students’ achievement in summarisation skills more than lecture method.

**Research Question Six:** What is the pre-test and post-test reading skill achievement mean scores of SS2 students between the experimental and control groups?

**Table 6:** Results of Pre-test and Post-test Students’ Reading Skills Achievement Mean Scores between the Experimental and Control Groups.

Group		N	Mean	SD	Mean gain	Mean Dif.
Experimental	Pre-test	35	32.71	15.31	39.06	29.95
	Post-test	35	71.77	13.26		
Control	Pre-test	41	30.19	13.54	11.63	
	Post-test	41	41.82	9.71		

The results from Table 6 revealed that the experimental group had a pre-test mean scores of 32.71, standard deviation of 15.31 and a post-test mean scores of 71.77, standard deviation of 13.26 with mean gain between the pre-test and post-test of 39.06, while the control group had a pre-test mean scores of 30.19, standard deviation of 13.54 and a post-test mean scores of 41.82, standard

deviation of 9.71 with mean gain between the pre-test and post-test of 11.63. The results indicated a mean difference between the pre-test and post-test of 29.95 in favour of the experimental group. Hence, the researcher concluded that cooperative learning method improved the achievement of students in reading skills more than the lecture method of teaching.

**Hypotheses**

1. There is no significant differences in the post-test predicting skill achievement mean scores between the experimental and control groups.

**Table 7:** Results of t-test Analysis on Predicting Skill Achievement Mean Scores between the Experimental and Control Groups.

Group	N	Mean	SD	df	t-cal	p-value	Decision
Experimental	35	14.97	3.21	74	10.83	0.000	Rejected
Control	41	7.43	2.84				

$P > 0.05$

The results of the t-test analysis from Table 7 revealed that the experimental group had a post-test mean scores of 14.97, SD = 3.21, while the control group had 7.43, SD = 2.84. The result indicated that  $t(74) = 10.83$   $p > 0.000$ . Since the p-value is less than the significant level of 0.05, the null hypothesis is rejected and this indicates that there is a significant difference in the achievement

of students in predicting skills between the experimental and control group. The result also showed that cooperative learning method improved the achievement of students in predicting skill more than lecture method.  
2. There is no significant differences in the post-test synthesizing skill achievement mean scores between the experimental and control groups.

**Table 8:** Results of t-test Analysis on Synthesizing Skill Achievement Mean Scores between the Experimental and Control Groups

Group	N	Mean	SD	df	t-cal	p-value	decision
Experimental	35	15.40	2.77	74	11.01	0.000	Rejected
Control	41	8.14	2.92				

$p > 0.05$

The results of the analysis of the t-test analysis from Table 8 showed that the experimental group had a post-test mean scores of 15.40, SD = 2.77, while the control group had 8.14, SD = 2.92. The result indicated that  $t(74) = 11.01$   $p > 0.000$ . Since the p-value is less than the significant level of 0.05, the null hypothesis is rejected and this indicated that there is a significant difference in the achievement mean scores between the

experimental and control group in favour of the experimental group. This implied that cooperative learning method significantly improved synthesizing skill of SS2 students in reading more than lecture method.  
3. There are no significant differences in the post-test inferential skill achievement mean scores between the experimental and control groups.

**Table 9:** Results of t-test Analysis on Inferential Skills Achievement Mean Scores between the Experimental and Control Groups

Group	N	Mean	SD	df	t-cal	p-value	Decision
Experimental	35	15.48	2.60	74	10.76	0.000	Rejected
Control	41	8.24	3.16				

$P > 0.05$

The results of the t-test analysis from Table 9 showed that the experimental group had a post-test mean scores of 15.48, SD = 2.60, and the control group had a post-test mean scores of 8.24, SD = 3.16. The result indicated that  $t(74) = 10.76$   $p > 0.000$ . Since the p-value 0.000 is less than the significant level of 0.05, the null hypothesis is rejected and this indicated that there is significant differences in the achievement mean scores of

SS2 students between the experimental and control group in favour of the experimental group. Hence, the cooperative learning method improved inferential skill of SS2 students in reading more than lecture method.  
4. There is no significant difference in the post-test questioning skill achievement mean scores between the experimental and control groups.

**Table 10:** Results of t-test Analysis on Questioning Skill Achievement Mean Scores between the Experimental and Control Groups.

Group	N	Mean	SD	Mean gain	Mean Dif.
Experimental	35	16.31	2.36	74	8.69
Control	41	10.65	3.16		

$P > 0.05$

The results of the analysis of the t-test analysis from Table 10 showed that the experimental group had a post-test mean scores of 16.31, SD = 2.36, while the control group had 10.65, SD = 3.16. The result indicated that  $t(74) = 8.69$   $p > 0.000$ . Since the p-value is less than the significant level of 0.05, the null hypothesis is rejected and this indicated that there is a significant difference in the achievement means scores between the

experimental and control group in favour of the experimental group. This implied that cooperative learning method improved the achievement of students in questioning skill more than lecture method.  
5 . There is no significant difference in the post-test summarisation skill achievement mean scores between the experimental and control groups.

**Table 11:** Results of t-test Analysis on Summarisation Skill Achievement Mean Scores between the Experimental and Control Groups.

Group	N	Mean	SD	Mean gain	Mean Dif.
Experimental	35	14.82	3.53	74	11.18
Control	41	6.60	2.87		

$P > 0.05$

The results of the analysis of the t-test analysis from Table 11 revealed that the experimental group had a post-test mean scores of 14.82, SD = 3.53, while the control group had 6.60, SD = 2.87. The result indicated that  $t(74) = 11.18$   $p > 0.000$ . Since the p-value is less than the significant level of 0.05, the null hypothesis is rejected and this indicated that there is a significant difference in the achievement mean scores of SS2 students in

summarisation skill between the experimental and control group in favour of the experimental group. This implied that cooperative learning method improves the achievement of students in summarisation skill more than lecture method.  
6. There is no significant differences in the post-test students' reading skill achievement mean scores between the experimental and control groups.

**Table 12:** Results of t-test Analysis on Students’ Reading Skills Achievement Mean Scores between the Experimental and Control Groups.

Group	N	Mean	SD	df	t-cal	p-value	Decision
Experimental	35	71.77	13.26	74	11.00	0.000	Rejected
Control	41	41.82	9.71				

*P* > 0.05

The results of the analysis of the t-test analysis from Table 12 showed that the experimental group had a post-test mean scores of 71.77, SD = 13.26, while the control group had a post-test mean scores of 41.82, SD = 9.71. The result indicated that  $t(74) = 11.00$   $p > 0.000$ . Since the p-value is less than the significant level of 0.05, the null hypothesis is rejected and this indicated that there is a significant difference in the achievement mean scores between the experimental and control group in favour of the experimental group. Hence, it was concluded that the Cooperative learning method improved the students’ achievement in reading skills more than the lecture method.

**Discussion of Findings**

The purpose of this study was to determine the effects of cooperative learning method on senior secondary school students’ achievement in reading skills in Jos North LGA, Plateau State, Nigeria. The finding from research question one showed that students that were taught predicting skill of reading using cooperative learning method achieved higher than those that were taught using lecture method. This is in agreement with the findings by Munawar and Sittar (2022). One of the findings of the study showed that STAD and Jigsaw strategies of cooperative learning had significant effect on English reading comprehension of the Grade 7<sup>th</sup> students. The implication of this finding is that using cooperative learning method will help to increase collaboration of SS2 students in learning predicting skill of reading skills.

One of the findings from research

question two revealed that students that were taught synthesizing skills using cooperative learning method achieved higher than students that were taught using lecture method. This is in accordance with the finding by Remache, Gemanian and Yanez (2019) who submitted that the students improved their reading comprehension through cooperative work in pairs and in groups as well. The implication is that when cooperative learning is employed in teaching synthesizing skill, it would help improve students’ achievement and retention in synthesizing aspect of reading.

The findings from research question three further revealed that students that were taught inferential skills using cooperative learning method achieved higher than those that were taught using lecture method. This is contrary to the study by Tankersley and Cuevas (2019), found that neither of the methods led to greater gains in the areas than the other. However, when controlling for prior knowledge on the four topics, the CSR group made significant gains on the first two tests. The implication is that cooperative learning method can improve the achievement and retention of students in inferential skill of reading.

The finding from research question four revealed that students that were taught questioning skills of reading using cooperative learning method achieved higher than students that were taught using lecture method. This is in accordance with Nwune (2022), who found that cooperative learning method improves the reading achievement of primary school pupils. The implication of this finding is that cooperative

learning can help to improve students' achievement in questioning skill when used by teachers.

The finding from research question five revealed that students that were taught summarisation skill using cooperative learning method achieved higher than those that were taught using lecture method. Nwune's (2022) finding revealed that pupils taught reading with Reciprocal Peer Tutoring (RPT) performed significantly better than those taught with lecture method. Furthermore, finding from research question six revealed that students that were taught using reading skills using cooperative learning method achieved higher than those that were taught using lecture method. The implication of this finding is that cooperative learning can help in improving students' achievement in reading skills.

The finding from hypothesis one revealed that there is a significant difference in the predicting skills achievement mean scores between the experimental and control group. The experimental group had a mean score of 14.97, SD= 3.21, while the control group had 7.43, SD= 2.84. This is in agreement with the studies by Munawar and Sittar (2022), who found that cooperative learning, improves the reading skills of elementary level in English more than lecture method. Again, the finding from hypothesis two showed that there is significant differences in the synthesizing skill achievement mean scores between students taught using cooperative learning method and those taught using lecture method. The t-test results showed that the experimental group had a mean score of 15.40, SD= 2.77, while the control group had a mean score of 8.14, SD= 2.92. This is in agreement with the findings by Tankersley and Cuevas (2019), who found that cooperative learning method, improves the reading comprehension, motivation and attitude of students.

Findings from hypothesis three revealed that there is a significant difference in the inferential skill achievement mean scores between the experimental and control group (ie. 15.48,

SD=3.16 and 8.24, SD=3.16 respectively). This is in tandem with the findings by Ramache, Gemanian and Yanez (2019), who reported that cooperative learning improves the reading achievement of high school students in Unidad Educativa Ecuador. In addition, the finding from hypothesis four revealed that there is significant differences in questioning skills achievement mean scores of students in the experimental and control groups which were 16.31, SD=2.36 and 10.65, SD=3.16 respectively. This is in agreement with the findings by Andhani, Irma and Intan (2018) who reported that cooperative learning strategy improves the reading achievement of college students more than lecture method.

Hypothesis five revealed that there is significant differences in the summarisation skill achievement mean scores between students in the experimental and control groups which were 14.82, SD=3.53 and 6.60, SD=2.87. This is in accordance with the findings by Gull and Shehzad (2015), who found a significant difference in the achievement of students who were taught subject of Education using cooperative learning method and lecture method. This implies that cooperative learning had a significant effect on students' achievement on summarisation skill. Lastly, the finding from hypothesis six revealed that there is a significant difference in the reading skills achievement mean scores between the experimental and control groups and these were, 77.77, SD=13.36 and 41.82, SD=9.71. This is in accordance with the findings by Andhani, Irma and Intan (2018), also, cooperative learning helps the students to learn a language faster as a team. The implication is that cooperative learning method has a significant effect on students' achievement in reading skills.

## Conclusion

Based on the findings of the study, the researchers concluded that the adoption of cooperative learning method significantly improved students' achievement in reading skills than the lecture method. It was more effective in

engaging students in activities that would help them comprehend written texts by sharing ideas together. This method also helped the students practice the skills collectively for effective reading activities and higher achievement in reading comprehension. Therefore, incorporating cooperative learning method as a teaching and learning method will hopefully improve English language teaching at the public senior secondary school level.

### Recommendations

Based on the findings of this study, the following recommendations were made:

- Teachers of English language should employ the use of cooperative learning method in teaching English language concepts especially reading comprehension.
- Teachers should utilize cooperative learning method in teaching in both abstract and concrete concepts in their subject.
- Students should study cooperatively in order to have higher achievement in their reading skills.
- Government should incorporate cooperative learning method into the curricular and produced textbooks in order to improve the reading skills of students.
- School administrators should make plans towards encouraging circle sitting arrangement in classrooms other than the traditional sitting method.
- Students who encounter challenges while working cooperatively to improve their reading skills should seek their teacher's interventions.

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