

***Effect of Think-pair-share Instructional Strategy on Senior Secondary II Students' Academic Achievement***

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**Abstract**

*This study investigated the effect on Senior Secondary two students' academic achievement, when taught reading comprehension using think-pair-share instructional strategy. The study adopted a quasi-experimental design. Specifically, a pretest posttest non-equivalent control group quasi-experimental design was used. Two research questions and one hypothesis guided the study. The sample was made up of 85 students. The instrument for this study was a 25 item multiple choice reading comprehension achievement test. Mean and standard deviation were used to answer the two research questions while ANCOVA was used to test the hypothesis at .05 level of significance. The result revealed that students taught using Think-Pair-Share had a higher academic achievement gain score than those taught using lecture method. Based on the findings, some recommendations were made which include that in-service training programme should be organized by relevant authorities for secondary school teachers on some constructivist teaching methods like Think-Pair-Share that can improve the academic achievement of students.*

**Keywords:** think-pair-share, academic, achievement, reading, comprehension

**Introduction**

The ability of someone to grasp and comprehensively understand a text is a qualifying factor that leads to success in life. Effective readers are known to understand what they read and improve their life from the meaningful information extracted from texts. Comprehension is considered as the process of reading meaning to the written text. Through this process, the reader creates a mental representation of the meaning of the text (Ogbu, 2018). Reading comprehension is a complex process, which requires readers to

integrate their knowledge with the information in the text (Ogbu et al., 2019; Eke, 2021). It could also be seen as the process of simultaneously extracting and constructing meaning through interaction and involvement with written language (Ogbu, 2018). Good readers construct, revise, and question the meanings they make as they read (Duke & Pearson, 2002). During the process of comprehension, the reader selects pieces of information from a text, linking them up with his/her experiential knowledge. In this way, the reader can infer new meanings from a text beyond the ones presented (Guthrie, 2013). Accordingly, students can improve their learning through effective reading and comprehension.

Inadequate reading comprehension skills obviously affect students' success in school. This is because, students' academic progress depends on understanding, analyzing and applying the information gathered through reading. But it goes much further than that; poor comprehension skills have been linked to poverty and crime (Primary National Strategy for Literacy and Mathematics, 2014). Reading comprehension empowers learners to take individual as well as collective actions in various contexts of their everyday life, such as household, workplace, community and global social community.

Teaching students effective reading comprehension skill must be a teacher's highest priority. Yet, in Nigeria many scholars observed that this aspect of language learning is highly neglected and may have been one of the major reasons for students' poor academic achievement in external examinations in secondary schools (Ogbu, 2018; Ogbu et al., 2019; Eke, 2021). According to State Committee WAEC Statistics (2020), performance result for May/June West African Senior School Certificate Examination (WASSCE) for Nigeria indicates the percentage of students that have five credits pass and above including English Language and Mathematics from the year 2018 to 2020 as follows; 2018 - 36.6%, 2019 - 36.57%, 2020 - 32.00%. This shows a declining trend in students' performance. The poor performance of students in primary, secondary and tertiary institutions could be attributed to students' inadequate reading comprehension skills (Ofodu, 2009; Agwamba, 2014; Ogbu, 2018). Accordingly, Egbai and Eke (2022) had opined that efforts should be made by curriculum experts to incorporate concept mapping strategy, which is a similar teaching method to the think-pair share instructional method, into teaching in secondary schools teaching syllabus, so as to reduce the poor academic performance of students.

The Federal Government of Nigeria understands the importance of reading comprehension by stating in her National Policy on Education that one of the goals of primary education is to inculcate permanent literacy and numeracy and ability to communicate effectively in the recipient (FGN, 2004). The Federal and various State Governments have been providing funds for continuous teacher education and provision of instructional materials for schools with the sole aim of improving the quality of education, but the results of the past WASSCE have indicated that these governmental efforts are not yielding the expected dividends. The observed poor performance of students may be attributed to a number of factors, one of which is the use of poor, ineffective traditional method in teaching. Confirming the interrelationship between

methods used in teaching and students' academic achievement, Nwigwe and Izuagba (2011) asserted that method used in teaching can stimulate interest and zeal to learn or destroy interest.

Also, studies have indicated that teachers in Nigerian secondary schools use lecture method in lesson delivery (Agwamba, 2014; Ogbu, 2018; Eke, 2021). Lecture method allows a great deal of information to be passed on, and favour handling of large classes. In spite of this advantage, the lecture method does not stimulate students' innovation, critical thinking, inquiry and scientific attitudes. It encourages students to memorize facts which are easily forgotten (Ogbu, 2018). It could be that appropriate teaching strategies that will make students proficient with the skills for reading comprehension have not yet been adopted in teaching in secondary schools. This could be the reasons for students' poor performance, as success in examination is determined by the extent the student could interpret meaning from the subject and the examination questions.

There is a recent agitation for a paradigm shift where learning is emphasized and this has given birth to constructivism. Constructivism is a view of learning based on the belief that knowledge is not given by the teacher rather it is constructed by learners through an active and collaborative process. In other words, learners are the builders and creators of meaning and knowledge, and that knowledge is socially constructed. For the constructivist, knowledge is not transmitted from an expert or teacher to a passive recipient, the learner. Rather, it results from a cognitive activity of meaning – construction. The learner is engaged in the construction of mental representations of the material to which he or she is exposed, and to make sense of it. Knowledge therefore results from the activity taken by the learner usually in a problem-solving activity, and from reflections on those actions. The teacher then mediates between learner's current and emergent understanding. He or she becomes a guide, a coach, a facilitator, and emphasis will be higher – order cognitive skills (Ogbu et al., 2019).

Think-pair-share teaching strategy stems from the constructivists' approach to learning. Think-Pair-Share (TPS) is a co-operative learning strategy developed by Lyman in 1978 and can be defined as “a multi-mode discussion cycle in which students listen to a question or presentation, have time to think individually, talk with each other in pairs, and finally share responses with the larger group” (McTighe Lyman, 1988; Eke, 2021). It is an effective way to change the discourse pattern in a classroom. It challenges the assumptions that all recitations or discussions need to be held in whole-group settings, and it has built-in procedures for giving students more time to think and to respond to help each other (Arends, 2009).

This strategy incorporates wait-time, verbal rehearsal, discussion, and cooperative learning. In its original form, there are two wait periods; the initial time of three to five seconds after the question was asked (Wait-time I) and then another wait period (Wait-time II) of at least three seconds after each pair shared back to the group (Baumeister, 2008; Eke, 2021). Visual cues such as hand signals, cards or a cube can be used to

announce transitions from one component of the strategy to the next (Baumeister, 2008; McTighe & Lyman, 1988; Eke, 2021). Lyman proposed that learners would develop social skills, positive self-esteem, engage more positively in class discussion and develop meta-cognitive awareness through the use of the strategy (Baumeister, 2008; Eke, 2021).

Izuagba et al. (2014) observe that Think-pair-share can be used at the beginning of the lesson, middle or at the end of the lesson in teaching any subject. The steps in using this strategy involve:

**First:** The teacher poses a problem/question associated with the lesson.

**Second:** He/she gives everyone time to think deeply (individually) and where possible they jot down their answers.

**Third:** The teacher asks them to form pairs to discuss their answers/findings.

**Fourth:** Each pair shares their answers with the whole class, and answers questions asked for clarifications to ensure everyone understood them.

It is effective when the teacher simply moves round the classroom from pair to pair until all the pairs are ready to report their findings. This technique gives the students room to work individually and make interaction in pairs, then share their ideas or opinions with the whole class. The following techniques can be applied:

1. The teacher divides the students into groups. Each group consists of four students who have heterogenic academic ability.
2. The teacher distributes the reading material and comprehensive questions to each student in the classroom.
3. The teacher gives students time to think their own answers. The allocation time should be appropriated with difficulties of the reading material and the numbers of questions to be answered.
4. The teacher gives students numbers. The teacher announces discussion partners.

The teacher asks the students to pair with their partners to discuss topic, solution, or opinion. The teacher asks the students to discuss with other pair in the group. Finally, the teacher asks the students to share their ideas or opinion with the whole class, one group after another. Azlina (2010) and Eke (2021) are of the view that think-pair-share also called multi-mode discussion is a learning technique that provides processing time and builds in wait-time which enhances the depth and breadth of thinking. The general idea of think pair share technique is having the students independently think or solve a problem quietly, then pair up and share their thoughts or solution with someone else.

In teaching English language reading comprehension, pairing allows the teacher to use variety of seating arrangements and this flexibility gives every learner the opportunity to practice. In addition, working with others gives students the opportunity to interact, reason through the problem and learn from one another. It also encourages collaboration and facilitates the building of team spirit which reduces the number of students' outburst found in traditional classrooms where students work in isolation. Working in pairs gives individual students a lot of speaking time which is important in a second language learning

context. Working in pairs help students have more confidence in what they are doing, have better chance for self-correction or peer correction and to discuss on a wider range of ideas and opinions with their team mates rather than when completing exercises individually (Izuagba *et al.*, 2014).

In adopting Think-Pair-Share teaching strategy as an instructional strategy, other observed factors that could influence the students' participation in the teaching/learning procedure such as academic achievement should be examined. Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university. It could also be seen as the amount of knowledge/mastery derived from learning (Dörnyei, 2003).

The general purpose of this study was to determine the effect of Think-Pair-Share instructional strategy in the senior secondary school students' academic achievement in reading comprehension. Specifically, the study intended to determine the effect of Think-Pair-Share instructional strategy on SS2 students' academic achievement in reading comprehension using English Language as course subject for the study.

### **Purpose of the study**

The purpose of the study was to determine the effects of Think-Pair-Share and lecture methods of teaching on Senior Secondary School Students' academic achievement in reading comprehension. Specifically, the study sought to:

1. Find out the differential effect of Think-Pair-Share and Lecture teaching methods on senior secondary students' achievement in reading comprehension.
2. Find out the effect of gender on the mean achievement scores of senior secondary school students taught reading comprehension using the Think-Pair-Share teaching strategy and Lecture method.

### **Research questions**

The following research questions guide the study:

1. What is the differential effect of Think-Pair-Share and Lecture teaching strategies on Senior Secondary Students' academic achievement in reading comprehension?
2. What is the effect of gender on the mean achievement scores of senior secondary school students in reading comprehension when taught using the Think-Pair-Share teaching strategy and lecture method?

### **Hypothesis**

To guide the study, this hypothesis was formulated and tested at 0.05 level of significance:

**Ho1:** There is no significant difference in the mean achievement scores of Senior Secondary School students taught reading comprehension using the Think-Pair-share and Lecture methods.

### **Methodology**

This study adopted pre-test, post-test, control group quasi experimental design with a 2 x 2 factorial matrix to determine the effects of using Think-Pair-Share strategy and lecture method on students' academic achievement in reading comprehension. The experimental group adopted Think-Pair-Share strategy while the control group used the lecture method for teaching. The population of the study comprised all the senior secondary II (SSII) English Language students in all the Government owned co-educational Secondary schools in Imo State in the 2020/2021 academic session numbering 9,231 students (3,964 male and 5,267 female students) in Imo State (Imo State Secondary Education Management Board, 2020).

The SS II Students of City School was purposively sampled. City School is one of the co-educational public secondary schools in Owerri Education Zone. The sample of the study consists of 85 students comprising 42 students assigned to the experimental groups and 43 students assigned to the control group from the same school. One class for experimental group has 19 males and 23 females (Think-Pair-Share) while the other class for control group has 15 males and 28 females.

The instrument used was the Reading Comprehension Achievement Test (RCAT) which consists of 25 multiple-choice questions. The Pre-test Post- test achievements test items were based on the unit topics that consist of reading comprehension in English language that was taught to the students. The aspect of reading comprehension in English language include the following topics: reading for main gist (extracting the main points from a given passage), reading to answer questions from a given passage, reading for details, reading for implied meaning, and reading for critical evaluation.

The face and content validity were established for the Reading Comprehension Achievement Test (RCAT) Forms I and II. To ensure the face validity of the Reading Comprehension Achievement Tests (RCAT), they were presented to four specialists in Measurement and Evaluation and English language from Michael Okpara University of Agriculture, and an expert in Curriculum Studies from Alvan Ikoku Federal College of Education. The content validity of the Reading Comprehension Achievement Tests (RCAT) Forms I and II were ensured through the use of the test blue prints and item analysis. Thereafter, the test items generated were sent to experts in Curriculum Studies in Alvan Ikoku Federal College of Education, two experts in Measurement and Evaluation and two experts in English Language from Michael Okpara University of Agriculture, Umudike for comments and suggestions.

The researchers in collaboration with some Senior Secondary II English Language teachers developed a 25 item multiple-choice achievement test that was based on the topics to be taught on reading comprehension. 10 questions out of the 25 multiple choice questions items were of low level cognitive domain while the other 15 questions were based on high level cognitive domain. The 25 questions covered application, analysis, synthesis and evaluation levels; which are all based on cognitive skills.

The reliability of the Reading Comprehension Achievement Test (RCAT) was 0.81. The instrument was subjected to trial testing. The Reading Comprehension Achievement Test (RCAT) instrument was administered to 30 students who were not sampled for the study. The scores obtained from the trial testing were subjected to Kuder-Richardson (KR-20) formular to determine the internal consistency of the Reading Comprehension Achievement Test. The Kuder-Richardson (KR-20) was appropriate for determining the reliability of the Reading Comprehension Achievement Test because the instrument required only one correct answer in every case.

The field work lasted for four weeks, the pretest for both the experimental and control group was done at the first period of English language class at the first week. The actual teaching for the two groups commenced at the second period of the first week. The actual teaching lasted for three weeks. At the end of the third week post-test was administered to the two groups. The following decision rules were applied for the testing of hypothesis: If p value is less than 0.05, the null hypothesis was rejected; but if P value is greater than 0.05, the null hypothesis was retained.

### **Presentation of results**

**Research question 1:** What is the differential effect of Think-Pair-Share and Lecture teaching strategies on Senior Secondary Students' academic achievement in reading comprehension?

**Table 1:** Pre-test and posttest mean score and standard deviations scores of students in Reading comprehension achievement test due to exposure to TPS and Lecture Method

<b>Teaching Methods</b>	<b>N</b>	<b>Pretest</b>		<b>Posttest</b>		<b>Achievement Mean Gains</b>
		$\bar{x}$	<b>S.D</b>	$\bar{x}$	<b>S.D</b>	
TPS Method	42	17.90	4.59	38.41	6.33	20.51
Lecture Method	43	16.95	4.17	24.35	4.27	7.40

The data presented on table 1 indicated that students taught using Think-Pair-Share strategy had a mean achievement score of 17.90 and a standard deviation of 4.59 in the pre-test and a mean of 38.41 and a standard deviation of 6.33 in the post-test with a pre-test post-test gain of 20.51. The table also showed that students taught using Lecture method had a mean score of 16.95 and a standard derivation of 4.17 in the pre-test and a mean score of 24.37 and a standard deviation of 4.27 in the post test, making a pre-test posttest gain to be 7.40. The findings reveal that students taught English language reading comprehension with TPS teaching strategy had a higher mean achievement gain score than those taught with Lecture method of teaching.

**Ho1:** There is no significant difference between the mean achievement scores of the Senior Secondary students taught using TPS and the lecture method.

**Table 2:** Analysis of covariance (ANCOVA) for reading comprehension achievement test mean achievement scores of students when taught using TPS and lecture methods

Sources of Variation	Type II sum of square	df.	Mean sum of square	F.	Significance
Correlated model	4775.340 <sup>a</sup>	2	2387.670	114.824	.000
Intercept	2236.533	1	2236.533	107.556	.000
Pre-test	699.828.541	1	699.828	33.655	.000
Teaching method	3214.526	1	3214.528	154.588	.000
Error	1601.174	83	20.794		
Total	79521.000	85			
Corrected total	6376.488				

a. R square = .745 (adjusted R squared = 0.741)

The results on table 2 show that teaching method (TPS and Lecture methods) is a significant factor in the mean achievement scores of the students in the reading comprehension achievement test. This is because the p-value of 0.000 is less than 0.05. This indicates the rejection of the null hypothesis which states that there is no significant difference between the mean achievement scores of students in reading comprehension achievement test when taught using the TPS and lecture method. Thus, this implies that there was a significant difference between the mean achievement scores of students in reading comprehension achievement test when taught using the TPS and Lecture methods.

**Research question 2:** What is the effect of gender on the mean achievement scores of senior secondary school students in reading comprehension when taught using the Think-Pair-Share teaching strategy and lecture method?

**Table 3:** Pre-test and post-test mean achievement score and standard deviation scores of students in reading comprehension achievement test due to teaching methods and gender

Methods	Tests	N	Male			N	Female		mean gain
			$\bar{x}$	S.D	Mean gain		$\bar{x}$	SD	
TPS	Pre-test	19	17.08	5.31		23	17.53	4.52	
	Post-test	19	37.65	6.22	20.57	23	38.09	6.41	20.56
Lecture method	Pre-test	15	16.67	4.28		26	17.71	4.81	
	Post-test	15	26.55	4.58	9.88	26	25.91	5.01	8.20

The data presented on the table 3 indicated that the male students in the TPS experimental group had a mean score of 17.08 and a standard deviation of 5.31 in the pre-test while in

the post-test, the males scored a mean score of 37.65 and a standard deviation of 6.22, with achievement gain score of 20.57. The result also shows that the female students in the TPS experimental group had a mean score of 17.53 and a standard deviation of 4.52 in the pre-test of TPS experimental group which is higher than that of male students in the pre-test of TPS experimental group; the female students also had a mean score of 38.09 and a standard deviation of 6.41 in the post-test of the experimental group with achievement mean score of 20.56 which is higher than that of the male students in the post-test score of the TPS experimental group.

The results presented on table 3 also indicate that male students had a mean score of 16.67 and a standard deviation of 4.28 in the pre-test of the control group which was lower than the pre-test of the experimental group, while in the post-test, the male students had a mean score of 26.55 and a standard deviation of 4.58, with mean achievement gain of 9.88 which was lower than the experimental group. The result also shows that the female students had a mean score of 17.71 and a standard deviation of 4.81 in the pre-test of the control group which is higher than that of the male students score in the pre-test of the control group; the female students also had a mean score of 25.91 and a standard deviation of 5.01, with mean achievement gain of 8.20 which is higher than that of the male students in the post-test of the control group. The finding shows that there is slight difference in the mean scores based on gender.

### **Discussion of the findings**

Results of the present study revealed the effect of Think-Pair-Share strategy on senior secondary school students' academic achievement in reading comprehension. The results presented on table 1 reveals that students taught English language reading comprehension with TPS teaching strategy had a higher mean achievement gain score than those taught with Lecture method of teaching. The finding of this study is in consonance with Azlina (2010) and Eke (2021). The researchers observed that TPS strategy was effective in enhancing students' academic achievement. Also results on table 3 show that there are slight differences in the mean scores based on gender. Furthermore, results on table 2 revealed that there was significant difference in the academic achievement mean scores of students taught using TPS and those taught using Lecture method. This is in favour of students taught with TPS strategy. This result is in agreement with Arends (2009) and Eke (2021). This is based on the fact that TPS is an effective way to change the discourse pattern in a classroom, giving students more time to think in a group, respond and to help each other. This enhances comprehension. The result may be because Think-Pair-Share places responsibility on each learner which encourages each student to talk and listen; this will enhance their academic achievement.

### **Conclusion**

This study was carried out to investigate the effect of Think-Pair-Share instructional strategy and lecture method of teaching on Senior Secondary School students' academic achievement in Reading comprehension. The result of the study shows that students exposed to TPS strategy had higher mean academic achievement score gain than their

peers exposed to lecture method of teaching. That is to say that TPS enhances students' academic achievement.

### **Recommendations**

Based on the findings of the study, the following were recommended by the researchers:

1) In-service training programme should be organized by relevant authorities for secondary school teachers on some constructivist teaching methods like Think-Pair-Share that can heighten the self-esteem of students and at the same time improve their academic achievement.

2) Teaching of English language Reading comprehension should be encouraged and emphasized among English language teachers. Teachers should not teach in isolation, rather strategies such as Think-Pair-Share should be adopted each time English language Reading comprehension is to be taught.

3) Efforts should be made by curriculum experts to incorporate Think-Pair-Share strategy into the teaching of English language Reading comprehension. There should be a review in the current instructional procedure to accommodate Think-Pair-Share in Senior Secondary teaching syllabus. This is to increase students' academic interactivity and reduce the recurrent mass failure of students in English language external examinations.

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