

THE EFFECT OF THINK PAIR SHARE TECHNIQUE ON STUDENTS' READING COMPREHENSION: A META ANALYSIS

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Abstract

This research aims to analyze the effect of Think Pair Share technique on students' reading comprehension. The method used is meta analysis. Meta analysis is used to obtain the effect size value by combining several existing research results. A total of 20 published articles in the form of journals as well as theses were used as data sources, which were then analyzed. The final result of this research shows: 1) Think Pair Share technique on students' reading comprehension based on the total research findings shows a value with an average effect size of 1.747 in the very high category. 2) Think Pair Share technique on students' reading comprehension based on educational stages, both at the university, senior and junior high school stages, shows a high effect size result, but senior high school occupies the highest position in the score with an average effect size of 2.213 in the very high category. 3) Think Pair Share technique on students' reading comprehension based on regions. There are three coverage areas, namely Java, Sumatra, and Sulawesi, which occupy the highest position in the score with an average effect size of 2.172 in the very high category. It was concluded that Think Pair Share technique was effectively applied to students' reading comprehension by looking at the results of previous studies, and the findings of the effect size results in this meta analysis research were in the very high category.

Keywords: Think Pair Share technique, reading comprehension, meta analysis

INTRODUCTION

Reading is one of the important basic skills besides listening, speaking, and writing. As stated by Patel and Jain (2008), "reading is most useful and important skill for people. This skill is more important than speaking and writing". For students learning English as a foreign language, mastering reading skills becomes a need. Reading can help students gather and understand the information that exists in written forms. Even more, "most of the sources of information including books, science, and technology are written in English" (Fauziyati and Istianah, 2013).

Understanding the text is what comprehension means. Sari, Kristiawan and Niza (2015) stated "reading comprehension is a very complex process. Reading comprehension does not focus on the

word meaning but it emphasizes on full understanding of the text". Hence, reading and comprehension are inseparable because reading's main goal is to comprehend the message and information in the text. "However, comprehending a text message is not easy, especially in English. It can be seen from the students' reading comprehension that is still far from what is being expected" (Ginting and Sormin, 2012).

Think Pair Share is a type of cooperative learning that is popular and effective in teaching and learning English. Professor Frank Lyman developed Think Pair Share at the University of Maryland in 1981 and has been applied by many authors.

According to Huda (2017), "think pair share enables students to work alone and cooperate with others, optimizing students' participation and giving at least eight times more opportunities to each student to show their participation to others, applicable to all subjects and grade levels".

Research on the Think Pair Share technique has been widely carried out by previous researchers and shows that the technique improves students' reading comprehension. However, the effectiveness of the Think Pair Share type of cooperative learning in reading comprehension in a wider context with a larger sample size is not yet known. So, in this research, a meta analysis was conducted.

According to Glass in Rumasera and Azisah (2021), "a meta-analysis is a form of analysis that aims to re-perform the numerical analysis of statistical data obtained from different or similar studies by combining the findings of the studies in a balanced and harmonious manner and transforming these findings into a common unit of measurement". Several meta analysis studies that have been conducted in the teaching and learning process of English have not focused on Think Pair Share and Reading Comprehension. The researcher intends to conduct a meta analysis research on the effect of Think Pair Share technique on students' reading comprehension in learning English.

METHOD

This research called "meta-analysis" and it is a type of quantitative research. Meta analysis is quantitative and uses statistical analysis to obtain extracts of information derived from a number of data from previous studies. According to Retnawati et al. (2018), "Effect size is a quantitative index used to summarize study results in a meta-analysis. That is, the effect size reflects the magnitude of the relationship between variables in each study".

Data Source

The source of data in this research is secondary data. Sangadji and Sophiah (2010) state, “secondary data is a source of research data obtained by researchers indirectly through intermediary media (obtained and recorded by other parties). Secondary data is generally in the form of evidence, historical records, or reports that have been compiled in published or unpublished archives (documentary data)”.

In this research, researcher used secondary data sources in the form of national journals and theses, totaling 20 units covering junior high school, senior high school, and university stages from various regions in Indonesia from 2012–2021.

Research Instrument

The instrument used in this research is coding data. Glass (1981) stated “coding data is one of the instruments in a meta-analysis that can make it easier for the researcher to collect and analyze data. As for variables used in coding data to capture information about the effect size of the research are: a. researcher's name; b. research title; c. year of research; d. educational subject; e. independent and dependent variables; f. research design; g. sample size” (Rumasera and Azisah, 2021).

Data Collection Procedure

Data was collected by collecting journals and theses from previous studies related to the research topic of think pair share technique and reading comprehension.

The procedures in this research adjust to the steps of conducting analysis research proposed by David B. Wilson and George A. Kelley in Komalasari et al. (2021), namely:

- a. Formulating research questions and objectives.
- b. Looking for and determining relevant articles. In this research, Think Pair Share technique on students' reading comprehension.
- c. Coding the data (suggested by Glass (1981), such as; name of researcher, research title, year of research, subjects, independent and dependent variables, research design, number of samples). In addition, statistical data, educational stage, and regional research are also included.
- d. Calculating the effect size (value of mean, standard deviation, and t-test) of each article using the specified formulas.
- e. Analyzing and classifying the results of the effect size of each article.

- f. Categorizing each article.
- g. Drawing a conclusion.

Data Analysis Techniques

In this research, it is seen the effect size of the think pair share technique has on students' reading comprehension of each article or thesis. It is also categorized as a total of research findings, educational stages, and regions.

Because the articles use different research designs, derivative formulas for effect size are needed. To calculate the effect size value, the equation displayed by:

Based on Becker and Park (2011), the formula are follows:

- a. Mean and Standar deviation in one group

$$\frac{\bar{X}_{post} - \bar{X}_{pre}}{SD_{pre}}$$

- b. Mean and Standar deviation in each group (two groups posttest only)

$$\frac{\bar{X}_E - \bar{X}_C}{SD_C}$$

- c. Mean and Standar deviation in each group (two groups pre-post tests)

$$\frac{(\bar{X}_{post} - \bar{X}_{pre})_E - (\bar{X}_{post} - \bar{X}_{pre})_C}{\frac{SD_{pre C} + SD_{pre E} + SD_{post C}}{3}}$$

- d. Given t-value

$$t \sqrt{\frac{1}{n_E} + \frac{1}{n_C}}$$

Based on Borenstein (2009), the formula are follow:

- a. Mean and Standar deviation/ S_{within} in each group (two groups pre-post tests)

$$d = \frac{\bar{X}_1 - \bar{X}_2}{S_{within}}$$

Where
$$S_{within} = \sqrt{\frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1+n_2-2}}$$

Categories of effect size values from Glass and Smith (1981) in Rumasera and Azisah, 2021.

Table 1. Categories of effect size values

Values	Categorize
Effect size ≤ 0.15	Ignore effect
$0.15 < \text{effect size} \leq 0.49$	Small effect
$0.50 < \text{effect size} \leq 0.74$	Medium effect
$0.75 < \text{effect size} \leq 1.10$	High effect
$1.10 < \text{effect size} \leq 1.45$	Very high effect

RESULTS

1. Tabulating Data: Results of the analysis of articles based on the total research findings

Table 2. Results of the analysis of articles based on the total research findings

No.	Articles Code	Status	Effect Size (d)	Categories
1.	A6	Article	4.612	Very High Effect
2.	A4	Article	3.507	
3.	A2	Article	3.037	
4.	A11	Thesis	2.953	
5.	A8	Article	2.264	
6.	A14	Article	2.201	
7.	A12	Thesis	1.928	
8.	A10	Article	1.887	
9.	A13	Thesis	1.862	
10.	A7	Article	1.716	
11.	A15	Article	1.703	
12.	A9	Article	1.417	
13.	A18	Article	1.170	
14.	A5	Article	1.137	
15.	A20	Thesis	0.845	High Effect
16.	A1	Article	0.761	Medium Effect
17.	A16	Article	0.647	
18.	A17	Article	0.599	

19.	A3	Article	0.432	Small Effect
20.	A19	Article	0.271	
$\sum d$			34.949	
\bar{X}_d			1.747	Very High Effect

The table above shows the effect size value from the results of data analysis for each article, which is then categorized. 20 journals and theses are selected; 14 articles in very high effect categories, 2 articles in high effect categories, 2 articles in medium effect categories, and 2 articles in small effect categories.

2. Tabulating Data: Results of article analysis based on educational stages

Table 3. Results of article analysis based on educational stages

No.	Educational Level	Articles Code	Effect Size	Categories
1.	University	A1	1.899	Very High Effect
		A2		
2.	Senior High School (SMA)	A3	2.213	
		A4		
		A5		
		A6		
		A7		
		A8		
		A9		
		A10		
		A11		
3.	Junior High School (SMP)	A12	1.247	
		A13		
		A14		
		A15		
		A16		
		A17		
		A18		
		A19		
A20				

Based on the table above, on 20 articles, at the university there were 2 articles; at senior high school there were 9 articles; at junior high school there were 9 articles. The effect of the Think Pair Share technique on students' reading comprehension based on educational stages shows the results of data analysis, with the average effect size value in the very high effect category for all three stages.

3. Tabulating Data: Results of article analysis based on regions

Table 4. Results of article analysis based on regions

No.	Region	Articles Code	Effect Size	Categories
1.	Java	A12	1.535	Very High Effect
		A13		
		A15		
		A16		
2.	Sumatra	A1	1.631	
		A2		
		A4		
		A3		
		A7		
		A8		
		A9		
		A14		
		A17		
		A18		
A20				
3.	Sulawesi	A5	2.172	
		A6		
		A10		
		A11		
		A19		

Based on the table above, it shows the average value of the effect size. From the 20 articles, there were 4 articles on Java, 11 articles on Sumatra, and 5 articles on Sulawesi. Based on the

region, the effect of Think Pair Share techniques on students' reading comprehension is spread across three coverage areas.

CONCLUSIONS

Based on the findings and results of the data analysis obtained, it can be concluded that the Think Pair Share technique has an effect on students' reading comprehension.

Think Pair Share technique on the total research findings has an effect on students' reading comprehension with an average (effect size) of 1.747, which is included in the very high effect category.

At the junior high school stage, the average (effect size) is 1.247, which is included in the very high effect category. The average senior high school (effect size) is 2.213, which is included in the very high effect category, and the average university (effect size) is 1.899, which is included in the very high effect category.

In the region distribution, Sulawesi has the highest gain, with an average effect size of 2.172, which is included in the very high effect category. Then Sumatra and Java, respectively, with an average (effect size) of 1.631 and 1.535, which are included in the very high effect category.

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