

## The Effectiveness of Mind Mapping Model and Think Pair Share Aided by Audio Visual Media to Improve Fantasy Story Writing Skill

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### Abstract

The implementation of the learning model is an important matter to develop students' skills. Among them is writing – the most difficult skill. Innovation in managing learning management is a solution to improve students' writing skill. This research aims to find out the effectiveness of mind mapping and think pair share to improve fantasy story writing skill, to analyze the differences of male and female writing skill, and to analyze the interaction of learning model and sex types of seventh graders of Bulu 02 Primary School, Rembang City. It is a factorial (2x2) experimental research. The sample is taken by proportionate stratified random sampling. The data is analyzed using Two-way ANOVA. The findings show: (1) different effectiveness between mind mapping and think pair share aided by audiovisual media to improve fantasy story writing skill, (2) different learning achievement of male and female toward fantasy story writing skill, (3) no interaction between mind mapping and think pair share aided by audiovisual media to male and female in improving fantasy story writing skill. Based on the findings, it can be concluded: there is a difference of effectiveness of both model; there is a difference of learning achievement between male and female students, but there is no interaction between those two models to sex types of the students. This study contributes to the latest novelty of mind mapping learning model and thinks pair share in learning Indonesian language and contributes scientifically to education by providing innovation in learning the Indonesian language.

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## INTRODUCTION

The curriculum is a meant to achieve demanded objective of certain educational institution which must be done and learned by its students. The curriculum is a set of plans and management about objective, content, learning material, and methods as guidance to use in the learning process to reach the objective.

The observation is done Primary School Bulu 02, Rembang done in April 2017 with 59 students as the population. The implemented learning by the teacher is found to have not been optimal since many of the students had not passed minimum passing grade (MPG), 70 for the Indonesian language. The teacher still dominated the learning process. It was in contrast to the Curriculum 2013 recommendation, which expects the teacher to function as a facilitator. The teacher only lectured the students, causing them to get bored. Therefore, learning media is expected to be one of the solutions to activate students. Less innovation done by teachers in learning becomes a hindrance of learning process success.

Curriculum 2013 emphasizes on *Student Center Learning*, meaning that it focuses on students. The teacher is demanded to activate students' involvement (Mulyasa, 2015). The Indonesian language has a strategic role in Curriculum 2013. Mahsun (2014) explains that there is basic change in Curriculum 2013, especially textual based Indonesian language learning to make students more creative and capable of mastering various texts.

Learning process in the educational unit is promoted in manners such as interactive, inspiring, fun, challenging, and courageous for students to participate actively, to provide an opportunity to develop the ability, creativity, and independence based on their interest, talent, and physical and psychological development. To promote active and fun learning needs innovation, among them is by using learning media. The fast development of media proves that the current era has very quick information flow (Cheung, 2005) explains that learning media facilitates students to know better and to

stimulate their critical thinking. The fast advancement of technology creates many spaces to access enjoyable media, included by children. Based on this fact, it can be said that currently, media becomes something unavoidable, included for the educational field. Therefore, the researcher wants to use appropriate – purposive learning model, such as *mind mapping* and *think pair share* aided by audiovisual.

Buzan (2012) states *mind mapping* is the easiest way to instill information into the brain and to restore it. It is a creative and effective way of noting. According to Shoimin (2014) *mind mapping* is a useful technique for whole parts of the brain, by using visual image and graphics facilities to create an impression.

Frank Lyman developed *Think Pair Share* at the University of Maryland. This model is intended as an alternative upon traditional methods such as lecturing, one direction of asking – answering the question. This model sees teacher and students as an effective way to change the discussion pattern in the class (Thobroni, and Mustofa, 2011). A study by Shih, and Reynolds (2015) explains *Think Pair Share* as cooperative learning procedures. It is designed to provide a chance and structure for students in thinking about the given topic.

A study by Putri, and Widihastrini (2014) proves and reveals teacher skill and student activities seen in learning, management, and learning activity by implementing *mind mapping*. Other findings done by Widarwati (2017) shows that *mind mapping* influences positively toward story writing skill of students, and it can be used as an alternative method of learning the Indonesian language.

Research done by Aher (2014) reveals that *Think Pair Share* improves students' learning interest, facilitates them to learn the concept more appropriately, and discusses the problem by clearer concept. Demirci, and Düzenli (2017) explains activities of *Think Pair Share* provides opportunities for students to review, train, and manage their already learning material previously. Kartikawati, and Purwanti (2015) states that *Think Pair Share* can improve learning quality by video media assistance.

Based on the previous findings, there is a difference in this research. This current research only tests the effectiveness of *mind mapping* and *think pair share* aided by audiovisual media toward fantasy story writing skill. Writing skill demanded by the curriculum is important lesson to be master. According to Iskandarwassid, and Sunendar (2008) writing is a manifestation of the last ability and skill of language by language learners after listening, speaking, and reading. Writing is an important skill, but it is frequently missed during learning, included at Primary School Bulu 02. Based on those facts, the researcher focuses on writing skill by using *mind mapping* and *think pair share* aided by audiovisual media.

The purpose of this research is to analyze the effectiveness of the learning models aided by audiovisual media toward fantasy writing skill. This research contributes to the latest notion of *mind mapping* and *thinks pair share* in learning the Indonesian language. Meanwhile, its scientific contribution is about the innovative idea for educational study in learning the Indonesian language.

## METHODS

This factorial (2x2) experimental research takes two samples, namely experimental group one and two. The first experimental group is intervened by using *mind mapping*, while a think pair share treats the second one.

The population of this research takes all seventh graders of Primary School Bulu 02, Rembang, consisting of 59 students. It is done by using *proportionate stratified random sampling*. The dependent variables are *mind mapping* and *think pair share* models based on sex types. The dependent variable is – students' skill of writing on Indonesian language lesson.

The data is collected by using *pre-test* and *post-test* to find out the students' writing skill. The technique of analyzing the data are *two way ANOVA* and conditional test (normality, homogeneity, and hypothesis test), and also N-gain test.

## RESULTS AND DISCUSSION

### Effectiveness of Mind Mapping and Think Pair Share Models

*Post-test* result

Table 1 *mind mapping* model of female student gains 86.3 better than the male group, 82.4. Meanwhile, *Think Pair Share* of male student gains 78.4. Meanwhile, the female group gains 83. It can be seen that female students gain better average score in term of writing skill than the male group, categorized well.

**Table 1.** Descriptive Analysis of Writing Skill Learning Achievement by Using *Mind Mapping* and *Think Pair Share* Models

Variable A Variable B		Learning Models		Total
		A <sub>1</sub>	A <sub>2</sub>	
B <sub>1</sub>	N	15	17	28
	Mean	82.4	78.4	84.2
	Std. dev	4.13	5.65	4.46
B <sub>2</sub>	N	13	14	31
	Mean	86.3	83	80.4
	Std. dev	3.96	5.32	5.89
Total	N	32	27	59
	Mean	80.2	84.6	82.2
	Std. dev	5.32	4.93	5.55

**Table 2.** A<sub>1</sub>B<sub>1</sub> Variable Analysis Results

Variable	N	Average	Note
A <sub>1</sub> B <sub>1</sub>	15	82.4	Skillful

Based on table 2 A<sub>1</sub>B<sub>1</sub> variable (*mind mapping* of male group, consisting of 15 students) shows an average score of 82.4. Based on the finding, it can be concluded that the writing skill of the male group by using *mind mapping* model is categorized skillful. It is in line with Dewi (2017) showing that the implementation of *mind mapping* can improve students' creativity in writing recount text, critical thinking (from 57.89% into 86.84%), innovative (from 39.47% into 76.31%), and improving learning achievement. Based on the improvement, it can be concluded that the implementation of mind mapping is positive.

**Table 3.** A<sub>1</sub>B<sub>2</sub> Analysis Result

Variable	N	Average	Notes
A <sub>1</sub> B <sub>2</sub>	13	86.3	Very Skillful

The table with A<sub>1</sub>B<sub>2</sub> variable (*mind mapping* learning model with the female group, consisting of 13 students) shows an average score of 86.3. Based on the findings, it can be concluded that

the writing skill of female students with *mind mapping* model is categorized as skillful. Brains of female students have greater language management center. It leads female students to have many vocabularies, so they are skillful at managing the language. Females have 24.000 vocabularies to express in a day. Meanwhile, males only have 12.000 vocabularies. Then, it can be concluded that females have more vocabulary than males.

**Table 4.** A<sub>2</sub>B<sub>1</sub> Analysis Result

Variable	N	Average	Notes
A <sub>2</sub> B <sub>1</sub>	1	78.4	Skilful

Based on table 4 A<sub>2</sub>B<sub>1</sub> (*think pair share* model with male students, consisting of 17 students) shows an average score of 78.4. Based on the finding, it can be concluded that males' writing skill by using a *think pair share* is included in a skillful category. It is in line with Ni'mah, and Dwijananti (2014) showing that learning by implementing *Think Pair Share* (TPS) through experiment can improve the learning achievement of students.

**Table 5.** A<sub>2</sub>B<sub>2</sub> Analysis Result

Variable	N	Average	Notes
A <sub>2</sub> B <sub>2</sub>	14	83	Skilful

Based on table 5 A<sub>2</sub>B<sub>2</sub> (*think pair share* with the female group, consisting of 14 students) shows average score 83. It is relevant to Hamdan study (2017) explaining that *Think Pair Share* is a collaborative discussion strategy. The finding shows statistically on students' scores because the variable of the group has significance. Based on the finding, it can be concluded the writing skill of the students by using a *think pair share* is categorized skillful.

### Test of Requirement

Normality test results

Based on the normality test, it gains sig > 0.05 of the experimental group by using *mind mapping* and *think pair share*. Based on the finding, H<sub>0</sub> is accepted. It means a sample of experiment group I by using *mind mapping* and experiment

group II by using *think pair share* have normal distributions.

**Table 6.** Normality Tests of *Mind Mapping* and *Think Pair Share*

Experimental group	Sig score	Notes
<i>Mind mapping</i>	.518	Normal
<i>Think pair share</i>	.244	Normal

**Table 7.** Normality Test of Class A

Sex	Sig score	Notes
Male	.566	Normal
Female	.537	Normal

Based on the normality test, it gains > 0.05. According to sex type of the students, males of class A, it gains a significant score of 0.566. Then, based on the female sex type, it gains sig 0.357. Based on the findings, it can be concluded that H<sub>0</sub> is accepted. It means both samples have normal distributions.

**Table 8.** Normality Test of Class B

Sex	Sig Score	Notes
Male	.286	Normal
Female	.608	Normal

Based on the test of class B of the male group, it gains sig 0.286. Meanwhile, based on the female group, consisting of 14 students, gains sig 0.608. Based on the findings, it gains sig > 0.05. Therefore, H<sub>0</sub> is accepted. It means both of samples have normal distributions.

Homogeneity test

**Table 9.** Homogeneity Test of *Mind mapping* dan *Think pair share*

Learning model	Sig score	Notes
<i>Mind mapping</i> and <i>think pair share</i>	.084	Homogeneous

The test of both learning models gains sig score of 0.084 > 0.05. It can be concluded that H<sub>0</sub> is accepted or homogeneous.

**Table 10.** Homogeneity Test of Experimental Class I

Group	Sig Score	Notes
Experimental class I	.871	Homogeneous

Based on the test of experiment class I with 28 students, it gains a sig score of 0.871 > 0.05. It

can be concluded that  $H_0$  is accepted or homogeneous.

**Table 11.** Homogeneity Test of Experimental Class II

Group	Sig Score	Notes
Experimental class II	.388	Homogeneous

Based on the test of experimental class II with 31 students, it gains  $0.388 > 0.05$ . It can be concluded that  $H_0$  is accepted or homogeneous.

**The Hypothesis Test of *Mind Mapping* and *Think Pair Share* Models**

This research uses *two way ANOVA* to test the interventional hypothesis between the learning models aided by audiovisual and sex factors. The principle to make a decision is probability and significant scores  $0.95$  or  $\alpha = 5\%$ . If coefficient  $p < 0.05$ . Then,  $H_0$  is denied. In contrast, if  $p \geq 0.05$ ,  $H_0$  is accepted. The test result can be seen in table 12.

$H_0$  : There is do the difference in writing skill by using *mind mapping* and *think pair share* models

$H_a$  : There is a difference in writing skill by using *mind mapping* and *think pair share* models

**Table 12.** *Two way ANOVA* Test Result of *Mind Mapping* and *Think Pair Share*

Hypothesis	F	Sig Score	Note
Learning model	8.34	.006	$H_0$ denied

Based on the first hypothesis test, *mind mapping* and *think pair share* gain sig score of  $0.006 < 0.5$ . Then,  $H_0$  is denied, or there is a difference in writing skill in using both models, proved by a better average score of *mind mapping* model. It is relevant to Ningrum study (2011) showing that mind mapping considers each element of right and left hemispheres to stimulate brain activity and motivate students to think critically in writing activity. Therefore, it can be said that *Mind Mapping* can be implemented in learning writing skill of Indonesian language lesson.

**Sex Differences in Fantasy Story Writing Skill**

The subsequently tested hypothesis is an analysis of sex differences in fantasy story writing

skill. The principle to decide is the probability score and significant score of  $0.95$  or  $\alpha = 5\%$ . If coefficient  $p < 0.05$ , then  $H_0$  is denied. In contrast, if  $p \geq 0.05$ , then  $H_0$  is accepted. The test result can be seen in table 13.

$H_0$  : There is make a difference between both male and female writing skill.

$H_a$  : There is a difference between male and female writing skill

**Table 13.** Differences of Sex in Writing Skill

Hypothesis	F	Sig Score	Notes
Sex	11.2	.001	$H_0$ denied

Based on the second hypothesis test, it gains a sig score of  $0.001 < 0.5$ . Then,  $H_0$  is denied, or there is a difference between male and female writing skill. It is proved by a better score of writing gained by female students. It is relevant to Amri research (2009) revealing that many female students owning more vocabulary than male students. The shortest written story of male students consists of 84 words lesser than female student's lesser work with 141 words. The longest writing work consists of 256 words. Meanwhile, the longest writing work of female student consists of 335 words. It means that female students are more capable of producing words than male students.

**Interaction of Learning Model and Sex**

The subsequently tested hypothesis is the analysis of the learning model and sexual interaction. The principle to make the decision is based on the probability score and a significant score of  $0.95$  or  $\alpha = 5\%$ . If coefficient  $p < 0.05$ , then  $H_0$  is denied. In contrast, if  $p \geq 0.05$ , then  $H_0$  is accepted. The result can be seen in table 14.

$H_0$  : There is no interaction between *Mind Mapping – Think Pair Share* and sex: male and female

$H_a$  : There is an interaction between *Mind Mapping – Think Pair Share* and sex: male and female

**Table 14.** Interaction of Learning Models and Sex Types

Hypothesis	F	Sig score	Notes
Model * Sex types	.056	.814	$H_0$ accepted

Based on the third hypothesis test, it gains a sig score of  $0.814 > 0.05$ .  $H_0$  is accepted, or there is no interaction between the models to sex types. It is in line with Sumianingrum, Wibawanto, and Haryono (2017) revealing there is no interaction between the models to sex types. The success of the students is owned by themselves through personal reasoning in building concept and principles found in Edmodo features, both for male and female students.

### N Gain Test

The improvement test of the skill by using both methods is done by N gain test. The data of N gain test result from two classes is gained improvement data after being intervened. There is a difference between both classes.

After being tested by using *two way ANOVA*, fantasy story writing skill of the students improves significantly. Then, to find out how the improvement is – normalized N gain score calculation is done, and it gains result as follow. The result of an experimental class I with *mind mapping* for male students gains 0.60. Meanwhile, for female students, it gains 0.68. In another hand, the score of experimental class II with a *think pair share* for male students gains 0.50.

Meanwhile, female students gain 0.61. Then, from both models, *mind mapping* gains 0.64.

Meanwhile, *think pair share* gains 0.54. It indicates the improvement of experimental class I is higher than experimental class II. Here is the N gain table 15.

**Table 15.** N-Gain Improvement Scores of Writing Skill of *Mind Mapping*

Class A	Numbers of students	Average	Criteria
Male	15	0.60	Moderate
Female	13	0.68	Moderate

*Mind Mapping* model has better significant improvement. Both male and female students can keep up in learning by using the model. They are more active and can better remember the given material under the topic – fantasy story after being intervened by using those two models. Based on the finding, it can be seen that N gain scores of both classes are moderate, with a better

average score of female students than male students.

**Table 16.** N Gain Improvement Score of Writing Skill of *Think pair share*

Class B	Numbers of students	Average	Criteria
Male	17	0.50	Moderate
Female	14	0.61	Moderate

*Think Pair Share* has significant improvement. The students can remember better and more active in the learning process to learn fantasy story writing after the intervention. Based on the finding, it can be seen that N gain scores of male and female students are moderate, with an average score of male's N gain score is better than female's N gain score.

**Table 17.** N Gain Score Improvement of *Mind Mapping* and *Think Pair Share*

Class	Numbers of students	Average	Criteria
<i>Mind mapping</i>	28	0.64	Moderate
<i>Think pair share</i>	31	0.54	Moderate

Both models have significant improvements. The students can remember the given material and become more active in the learning process to study fantasy story writing after the interventions. Based on the findings, it can be seen that N gain scores of *mind mapping* and *think pair share* is moderate, with a better average score of *mind mapping* than *think pair share*. It is in line with Putri, and Sudianto study (2013). Based on data analysis result in this research about the implementation of *mind map* to improve remembering ability of students. It can be seen from the observational result of a teacher in cycle I, cycle II, and cycle III, which have achieved the target. The improvement of remembering ability of students is shown by learning achievement on each cycle. *Mind Mapping* model is more creative and can improve remembering ability so the students can absorb and understand the material. Then, a study by Eliyana, Sulistyorini, and Purwanti (2018) states that *think pair share* is less effective in improving learning achievement and makes this model as an *alternative*. Therefore, the teacher must

appropriately plan so during the learning process will run smoothly.

## CONCLUSION

The conclusion of this research is *Mind Mapping* is more effective to improve fantasy story writing skill of female students. It is proven by a better average score and categorized as very skillful. Based on the first hypothesis test, there is no difference between both methods. Based on the second hypothesis, there is a difference between male and female students' writing skill. Based on the third hypothesis test,  $H_0$  is accepted, or there is no interaction between the learning models to sex types of the students.

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