

THE EFFECT OF TREFFINGER, LAPS-HEURISTIC MODELS, AND MOTIVATION ON STUDENTS' WRITING ACHIEVEMENT

Hasrul Fahmi¹, Muhammad Nasir²

¹Institute of Health Science Muhammadiyah Lhokseumawe

²The State Polytechnic of Lhokseumawe

E-mail: hasrulfahmi089@gmail.com

Abstract

This research was conducted with Quantitative research aimed to find out the students' writing achievement taught by using Treffingers' Learning Model and LAPS Heuristic Model and also to find out the students' writing achievement with high and low motivation. The method of this research used was experimental research with factorial design 2x2. The sample of this study was XI IPA of SMA Negeri 1 Kota Lhokseumawe, which consisted of 36 students XI IPA, the sample was applied by random sampling technique. The instruments of this study were obtained by writing test and questionnaire sheet. The summary of post-test data description in each group of learning model showed in statistical is Treffingers' Learning Model = 17.50 and LAPS Heuristic = 16.03. So, Treffingers' Learning Model (17.50) > (16.03) LAPS Heuristic Model. Then, the data were analyzed by using ANOVA test at the level of significant $\alpha = 0,05$. Based on the data analysis, the findings proved that the students' writing achievement taught by using Treffingers' Learning Model was higher than that taught by using LAPS Heuristic Model, with $F_{obs} (20,13) > F_{tab} (3,13)$.

Keywords: *Treffingers' Learning Model, LAPS Heuristic Model, Motivation, Expository Writing.*

Abstrak

Penelitian ini dilakukan dengan penelitian Kuantitatif yang bertujuan untuk mengetahui prestasi menulis siswa yang diajarkan dengan menggunakan Model Pembelajaran Treffingers dan Model Heuristik LAPS dan juga untuk mengetahui prestasi menulis siswa dengan motivasi tinggi dan rendah. Metode penelitian ini digunakan adalah penelitian eksperimen dengan desain faktorial 2x2. Sampel penelitian ini adalah XI IPA SMA Negeri 1 Kota Lhokseumawe yang terdiri dari 36 siswa XI IPA, sampel diterapkan dengan teknik random sampling. Instrumen penelitian ini diperoleh dengan tes tulis dan lembar angket. Ringkasan deskripsi data post-test pada setiap kelompok model pembelajaran yang ditunjukkan dalam statistik adalah Model Pembelajaran Treffingers = 17,50 dan LAPS Heuristik = 16,03. Jadi, Model Pembelajaran Treffingers (17.50) > (16.03) Model Heuristik LAPS. Kemudian, data dianalisis dengan menggunakan uji ANOVA pada level signifikan $\alpha = 0,05$. Berdasarkan analisis data, temuan membuktikan bahwa prestasi menulis siswa yang diajarkan dengan menggunakan Model Belajar Treffingers lebih tinggi daripada yang diajarkan dengan menggunakan Model Heuristik LAPS, dengan $F_{obs} (20,13) > F_{tab} (3,13)$.

Kata Kunci: *Model Belajar Treffinger, Model Belajar LAPS Heuristik, motivasi, Menulis Expositori*

INTRODUCTION

Writing is one of component skill in language learning. Writing is a process of creativity in expressing ideas in the form of written language. Harmer (2004) states that writing is a way to produce language and express ideas, feelings, and opinions. Harmer (2001) also mentions that writing involves planning what we are going to write. The results obtains from writing creativity are also referred to as writing or writing. The two terms refer to the same result even though there is an opinion that the two terms have different meanings. The term writing itself is often attached to a scientific type of creative process.

**Table 1. Students' Writing Achievement at SMU Negeri 1 Lhokseumawe
 Academic year 2021/2022**

Class	Semester	Means of Students' Writing Achievement			
		Expository	Narrative	Descriptive	Persuasive
X	I	55	60	60	55
XI	I	65	70	75	70
XII	I	80	85	85	85

Thus, phenomena above showed that language learning was still lack of by the students, especially in writing. It has found that the students' achievement in writing was still low other especially in expository. It means that the students' achievement in writing was still less satisfactory. As a result, they were less interested in further activities related with the writing. The fact shows that strategies which are challenging the students are needed so that they are more curios in writing class.

In fact, the curriculum 2013 was designed by the government for the students and teachers to improve their ability in education. It is design hopefully to growth creativity and ability the learner at school, in this way the teacher as facilitator in the classroom. The students demanded to be more active in learning and even expected to be creative. The students when learning and finish the work usually make a product from they after the lesson. Thus, the teacher also required to improve their ability in teaching. The teacher almost used old method when teaching learning, so that implicated more students is still not growth or active in learning. Hence, with curriculum 2013 have different situation and model learning based on topic lesson make the students creatively in learning.

In writing, the students still confused or lack when they chose word, meaning, or topic after reading a book or listening an information to make a resume or conclude. It is as what is argued by Burhan (2001), writing is the activity of expressing ideas through language media. Writing is productive and expressive activities so that the writer must have the ability in using vocabulary, grammar, and language structure.

According Ridwan (2018) has researched about the effect of Treffingers' learning model toward the critical thinking ability of students in SMK 3 Yogyakarta. the result findings is the Treffingers learning model has the effect significantly higher than Discovery learning model, it is based on the result hypothesis analysis of t-test obtained t count > t table is 2,443 > 1,999. According to Novi. H (2019) has researched the effect of using Logan Avenue Problem Solving Heuristic (LAPSH) learning model on students' reading achievement. The research was conducted at SMA Negeri 21 Medan, it has used experimental research design. The result of data analysis showed that (2.27) was greater than was (1.998) at $\alpha = 0.05$ and dk = 66. It mean that based on the fact final hypothesis that H was rejected and H was accepted. It concluded that there was a significant effect of using Logan Avenue Problem Solving Heuristic learning model on students' reading achievement.

Form explanation above, the strategy learning are Treffingers' and LAPSH as the model could to improve students' ability in creativity, critically and problem solving in learning. It could be seen based

on previous study above that showed these learning models made differences between conventional model and experiment model with have significantly higher than before.

There are many kinds of strategy that can be used by the teacher in teaching-learning process such as brainstorming, bingo, role-play, analyzing etc. However, to teach writing is not easy. Some English teachers still uses conventional strategies in teaching which causes the students bored because the strategy is monotonous, and the students will be passive learners.

Based on the preliminary research and phenomena in SMA Negeri 1 Lhokseumawe was found that most of the students still have the low ability at writing especially expository. Therefore, they were felt bored and caused low motivation when teaching learning in the class. That's why the writer would to conduct a study on the title "*The Effect of Treffinger, Laps-Heuristic Models, And Motivation on Students' Writing Achievement*".

LITERATURE REVIEW

a. Writing for learning

Harmer states that writing (as one of the four skills of listening, speaking, reading, and writing) has always formed parts of the syllabus in the teaching of English. The importance given to writing differs from teaching situation to teaching situation. Writing for writing role where the students write predominantly to augment their learning the grammar and vocabulary of the language. Writing is often not time-bound in the way conversation is. When writing, students frequently have more than they do in oral activities.

Writing encourages students to focus on accurate language used and, because they think as they write, it may well provoke language development as they resolve problems which writing puts into their minds. Since here students are not writing to become the better writers. Writing for learning consists of:

a. Reinforcement Writing

Writing has always been used as a means of reinforcing language that has been taught. In simple form, teachers often ask students to write sentences using recently learn grammar. From this activity just writing sentence makes them think about the new grammar or vocabulary in a more considered way than if we asked them to provide instant spoken examples state by Harmer (2004).

b. Preparation Writing

When the students write sentences or paragraph as preamble to discussion activities need such things as like preparation. Preparation is help writer to build their writing better. Preparation

is important in many things as like writing, it is helpfully for the writer even though it is not the main focus on an activity. Give the students time to think up ideas rather than having to come up with instant fluent opinions. Something that many, especially at lower levels, find difficult and awkward stated by Harmer (2004).

Expository writing is a type of writing where the purpose is to explain, inform, or even describe. It is considered to be one of the four most common rhetorical modes. (Susan: 2004). Expository writing does not include the author's opinion, but focuses on accepted fact about a topic, including statistics or other evidence. Examples of expository writing are textbooks, recipes, news stories, business, technical or scientific writing.

The purpose of expository writing is to explain and analyze information by presenting an idea, relevant evidence, and appropriate discussion. In narrative contexts (such as history and fiction), exposition provides background information to teach or entertain. In other nonfiction contexts (such as technical communication), the purpose is to teach and inform.

b. Treffingers' Learning Model

Treffinger learning model is one of cooperative learning model that has concept of creative problem solving where Treffinger learning model is the revision from creative problem solving. Treffinger learning model was created by Donald. J Treffinger, the president of Center of Creative Learning Inc. Sarasota, Florida where he modified six steps in creative problem solving becomes three major components (Huda). Treffinger learning model is considered as one of the learning model that can create the situation for students where they can interact with other actively in the language and make the learning language more meaningful. Students learn based on problem, manage the problem, and try to solve the problem together. It is hoped to be able to improve and enhance the students' writing skill in daily life communicatively and actively.

According to Treffinger, the design of this model is due to the changing times that are rapidly changing and increasingly complex problems that must be faced. Therefore, to overcome these problems, we need a way to solve a problem and produce the most appropriate solution. By involving cognitive and affective skills at each level of this model, Treffinger (1980) shows the interrelationships and dependencies between the two to encourage creative learning. In addition to the creative learning process divergent thinking processes (thinking processes in various directions and producing many alternative solutions) and convergent thought processes (thought processes that seek a single answer).

c. LAPS-Heuristic (Logan Avenue Problem Solving)

LAPS-Heuristic is a learning model that encourages students in solving problems by questioning what the problem is, whether any other alternative solutions, whether it is beneficial, if the solution, and how effective to solve it (Adiarta:2014). The stages of LAPS-Heuristic are analyzing and understanding the problem, designing and planning a solution, looking for a solution of the problem, and examining the solution (Lidnillah, without year). LAPS-Heuristic will enable the student to analyze a problem coherently and quickly so that students' critical thinking skills can be trained and improved.

According Mutai stated that the strategy LAPS-heuristic can improve students' conceptual understanding and metacognition. Conceptual understanding is to make the concept clearer for students, allow students to associate with the concept, make connections more complex to science, prevent memorization, and improve performance. Stanovich found that there is a partial simulation between the heuristics and biased against the task assignment syllogism. In addition to some of these benefits, the strategy heuristics can also improve the ability to think logically. Logical thinking will help students to think more realistically and openly. Shoimin presented in the Logan Avenue Problem Solving Learning model, there are four steps, first understand the problem, then plan the resolution, resolving problems according to the second Step Plan (solution) and check back the results obtained (looking back).

d. High and Low Students' Motivation

Drozdenko, Tesch, and Coelho stated mention that two significant factors motivation learning in the classroom are external and internal disturbance originated from the students' disintegration. Some examples of external disturbance are hard to understand instructions, class temperature, and students prefer listening to music rather than paying attention to their teachers. Meanwhile, internal disturbance covers those coming from students themselves, such as lack of motivation, laziness, prefer playing with other classmates, and the desire to eat in class.

METHOD

The research was designed in this study is factorial design 2X2. Factorial design have been developed at varying levels of complexity. The simplest factorial design is the 2X2, which was read as “2 by 2” (Ary, et.al 2006). This design was compared learning models (Treffingers’ and LAPS-Heuristic) and students’ motivation.

There are three variables in this study namely; independent variables; learning models (Treffingers’ model and LAPS-Heuristic model); moderator variables; motivation (high motivation and low motivation); dependent variable; students’ achievement in writing.

Table. 2 Factorial Research Design 2X2

	Treatments (A)	Treffingers’ Model (A ₁)	LAPS-Heuristic Model (A ₂)
Level (Students’ Motivation) (B)	High (B ₁)	A ₁ B ₁	A ₂ B ₁
	Low (B ₂)	A ₁ B ₂	A ₂ B ₂

Instruments for collecting was used Post-test and Questionnaire, post-test to conduct result from learning models and questionnaire for measuring students’ motivation, it is purposed to find out the result of students’ achievement in writing. However, in this study using random sampling to collecting data, population and sample is class XI IPA with 40 total students from each class as the sample.

SPPS, instrument for analyzing score data, it from result questionnaire also result writing test. It is used for measuring score to validity and reliability form the test.

Validity of Test

In this study, the writer was used two treatments for the test are questionnaire motivation test and writing test. The writer used Pearson Product Moment Formula in this study to validity of test.

$$r_{xy} = \frac{N(\sum xy) - (\sum x \sum y)}{\sqrt{[N(\sum x^2) - (\sum x)^2][N(\sum y^2) - (\sum y)^2]}}$$

Reliability of Test

In this case, the writer would use the instrument using reliability of test is Cronbach Alpha. The formula drawn as follow:

$$r_{II} = \left(\frac{k}{k-1} \right) \left(\frac{1 - \sum \sigma_t^2}{\sigma_t^2} \right)$$

Table. 4 Summary Statistical Value

Statistical Value	A1	A2	B1	B2	A1B1	A1B2	A2B1	A2B2
N	36	36	18	18	18	18	18	18
Highest Score	24	22	74	55	24	15	22	15
Lowest Score	10	10	67	48	18	10	16	10
Mean	17.50	16.03	70.72	52,11	22.22	12.78	19.61	12.39
Median	16.50	15.50	71.50	53.00	22.00	13.00	20.00	12.00
Mode	12	20	73	53	22	12	20	11
Std Deviation	4.997	3.960	2.396	2.139	1.555	1.166	1.685	1.195
Variance	24.771	15.685	5.742	4.575	2.418	1.359	2.840	1.428

A₁ = Students who are taught by using Treffingers' Model

A₂ = Students who are taught by using LAPS Heuristic Model

B₁ = Students who have high motivation

B₂ = Students who have low motivation

A₁B₁ = Students who have high motivation and are taught by using Treffingers' Model

A₁B₂ = Students who have low motivation and are taught by using Treffingers' Model

A₂B₁ = Students who have high motivation and are taught by using LAPS Heuristic Model

A₂B₂ = Students who have low motivation and are taught by using LAPS Heuristic Model

Hence, the data would to validity or reliability, surely the writer will analyzing using ANOVA 2X2 Factorial design, this following table of ANOVA from result data analysis:

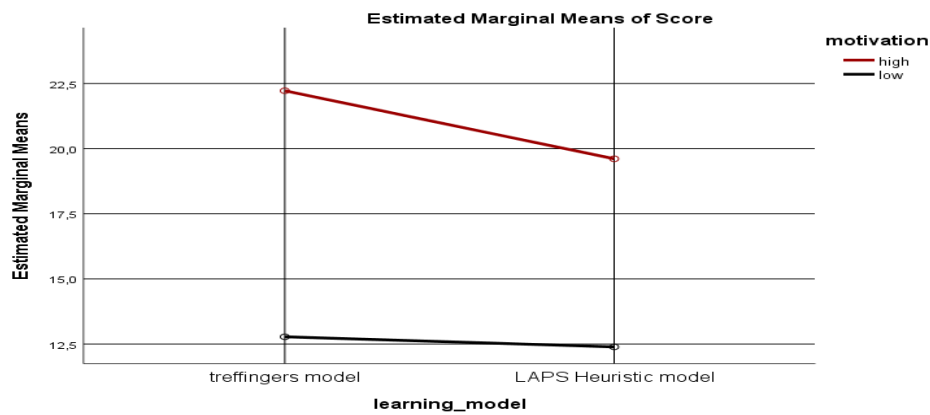
Table. 5 Two-way ANOVA

LogS _i ²	Statistic	Treffingers' Model	LAPSH Model	Total
High Motivation (B ₁)	N	18	18	36
	$\sum X$	400	353	753
	$\sum X^2$	8930	6995	15925
	M	22.22	19.61	20.91
Low Motivation (B ₂)	N	18	18	36
	$\sum X$	230	223	453
	$\sum X^2$	2962	2795	5757
	M	12.78	12.39	12.58
Total	N	36	36	72
	$\sum X$	630	576	1206
	$\sum X^2$	11892	9790	21682
	M	17.50	16.03	16.76

Thus two-way analysis of variance (ANOVA) with 2x2 factorial designs can be used for testing hypotheses of research are summarized in table below:

Table. 6 Summary on calculation Result of Two-way ANOVA

Source of Variance	Df	SS	MS	F	Level of Significance (0,05)
Learning Models	1	40.500	40.500	20.13	3.13
Motivation	1	1250.00	1250.00	621.446	3.13
Interaction	1	22.222	22.222	11.04	3.13
Error	68				



Picture. 1 Estimated Marginal Means of Score

Because of that, the writer have explanation from hypothesis testing that learning models could be influenced students' motivation toward students' achievement writing. Where, result value above showed using learning models is higher with 20.13 than level of significance (3.13). with successfully from using learning models surely made improved students' motivation growth with the result value (621.44) is higher from level of significance (3.13). In other words, effectiveness of learning models could improve toward students' motivation and also students' achievement especially in writing. The writer concluded from the result from the findings are:

- a. Learning models increased students' writing achievement but from the two models (Treffingers' Learning Model and LAPS Heuristic Model), Treffingers' learning model is better than LAPS Heuristic model because students' score were higher in writing when they taught by using Treffingers' learning model than LAPS Heuristic.
- b. Students with high motivation got higher achievement in writing than the students with low motivation.
- c. There is different achievement in writing when the students taught by using different models. Then, motivation also influenced their achievement in writing especially in writing expository

DISCUSSION

The research finding showed that Treffingers' Learning model have significant effect on students' writing achievement. It can be seen by the total mean both of the learning models, it shows that the students taught by using Treffingers learning model have higher achievement than students taught by using LAPS Heuristic. It is because Shoimin (2014) Treffinger learning model is one of many models that has function to solve problem creatively because Treffinger gives the practical suggestion for how to reach something.

Thus, learning model significantly effective the students' writing achievement taught by Treffingers and LAPS Heuristic. This experiment has been increased students' motivation especially in writing, so that, the teacher can apply this learning model in future.

CONCLUSION AND SUGGESTION

Based on the result of the research and discussion that have stated in previous chapter, it is concluded that:

- a. Students' achievement in writing that taught by using Treffingers' Learning Model is higher than that taught by LAPS Heuristic model. It is effected on students' metacognitive in critical thinking and problem solving.
- b. Students' achievement in writing with high motivation is higher than that of students with low motivation. The factors could influenced toward high and low motivation are individual's belief, engagement, interest and curiosity.
- c. There is significant interaction between learning models and motivation on students' writing achievement. The students' achievement in writing is influenced by learning models and motivation.

Based on the conclusion and implication above, there are some suggestions staged as follow:

- a. It is highly recommended for teachers to use Treffingers learning model and LAPS Heuristic model since these two learning strategies are able to practice and learn to improve creativity the students' on writing achievement.
- b. For the next researchers who intend to conduct the research more detail related to the writing especially expository, hopefully this research can be used as a starting point of the future researchers who have some problems and this research can be utilized as reference.

REFERENCES

- Ary, D. 2010. *Introduction to Research in Education*. Eight Edition. Canada: Nelson Education.
- Arikunto, S. 2006. *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.
- Arikunto, S. 2013. *Prosedur Penelitian; Suatu Pendekatan Praktik*, Jakarta: Rineka Cipta
- Anggrianto, D., M. Churiyah, and M. Arief. 2016. "Improving Critical Thinking Skills Using Learning Model Logan Avenue Problem Solving (LAPS)-Heuristic." *Journal of Education and Practice* 7(9): 128–36
- Babbie, E. 1990. *Survey Research Methods*. 2d ed. Belmont, Calif.: Wadsworth Publishing Company.
- Brown, H. D. 2000. *Teaching by Principles*. 2nd ed. Cambridge: Pearson. Longman.

- Brown, H. D. 2000. *Principles of Language Learning and Teaching*, 4th Ed. (New York: Addison Wesley Longman. Inc)
- Dörnyei, Z. 1994. Motivation and motivating in the foreign language classroom. *Modern Language Journal*, 78, p. 273-284
- Elliot. A.J. 2006. *The Hierarchical Model of Approach-Avoidance Motivation*. *Motivation Emotion*. p. 111–116.
- Ilyas, M., Ismail, Z., Zulfidar, F., Abdurrahman, F., Islami, N., & Ginting, R. (2021). Analisis Kritis Eksistensi Perguruan Tinggi Negeri-Swasta Di Aceh. *JURNAL HURRIAH: Jurnal Evaluasi Pendidikan Dan Penelitian*, 2(1), 49-59. <https://doi.org/10.5806/jh.v2i1.10>
- Graham, S and D, Perin. 2007. *Writing Next: Effective Strategies to Improve Writing Adolescents in Middle and High Schools – A Report to Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- Sinaga, N. Handayani, 2019 .The Effect of Using Logan Avenue Problem Solving Heuristic Learning Model on Students' Reading Achievement. *DSpace Repository Journals*, Vol.2. <http://repositori.umsu.ac.id>
- Sumiara, Riyanto.Y, Suhanadji. 2019. The Effect of Treffinger Learning Model On Critical Thinking Ability And Student Learning Outcomes. *International Journal of Scientific and Research Publications*, Vol. 9, Issue 6. pp. 738. ISSN 2250-3153
- Treffinger, D. J, S.G. Isaksen, and K. B.Dorval. 2003. Creative Problem Solving (CPS Version 6.1 TM): A Contemporary Framework for Managing Chance. *Center for Creative Learning, Inc. and Creative Problem Solving Group, Inc.* Website: www.cpsb.com
- Treffinger D. J, E.C. Selby and S.G. Isaksen. 2008. Understanding individual problem solving style: A key to learning and applying creative problem solving learning and individual differences vol:18 p.390