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The Effect of Learning Strategy and Locus of Control on Learning Outcomes by Controlling Early Knowledge

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Abstract: *The purpose of this study is to empirically study the phenomena that occur related to learning strategies and locus of control by considering the variables of students' prior knowledge of learning outcomes. This research was conducted at SMA Negeri 1 Air Putih, North Sumatra during August to October 2016, and used experimental research methods. The number of subjects in this study each consisted of 40 students consisting of two treatment classes. While the data analysis technique used ANKOVA at a significance level of 0.05. The results obtained: (1) Indonesian language learning outcomes between groups of students taught with CTL learning strategies are higher than groups of students taught using expository strategies after controlling for initial knowledge, (2) Indonesian language learning outcomes among groups of students who have locus of internal control is higher than the group of students who have external locus of control after controlling for initial knowledge, (3) the effect of interaction between learning strategies and locus of control on Indonesian language learning outcomes after controlling for initial knowledge.*

Keywords: *learning strategy; Contextual learning (CTL); expository learning; locus of control*

I. Introduction

The role of schools is directly related to the development of human resources. Every educational program in schools needs to be oriented towards strengthening the human resource development process as the basic capital for development carried out by the government and the community. School empowerment as a vehicle for socialization must be done through empowering school management by developing effective leadership. Meanwhile, empowering students in learning and developing student creativity in learning can be done by utilizing learning strategies, technology and information directed by professional teachers. So, schools must be able to become distributors of information and technology, knowledge, resources and learning methodologies.

The PISA (Program for International Student Assessment) survey under the Organization for Economic Cooperation and Development (OECD) released findings in December 2013 that Indonesia was ranked the lowest out of 65 countries surveyed in mapping math, reading, and science skills. Meanwhile, the Human Development Index (HDI) in Indonesia in 2013 was in the 121st position out of 187 countries in the world. This fact shows that the implementation of our education in general and the process of implementing learning in particular need serious attention which in the end can find solutions.

Lozanov in DePorter (1992) states that the teacher greatly determines student success. The influence of the teacher is very clear, being an important factor in the learning environment and student life. The role of the teacher is not just a giver of knowledge but the teacher is a learning partner, model, mentor, and facilitator.

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This is in line with the 2013 National Curriculum which emphasizes that every individual has potential that must be developed, so the appropriate learning process is to explore the potential of children to always be creative and develop. However, the reality on the ground has not led to meaningful learning, the learning system sits quietly, listening to information from the teacher seems to have been entrenched from the start so that making changes towards active, creative, fun learning is rather difficult. In learning, it is the teacher who deals directly with students. Nurhadi (2003) states that the phenomenon of the low quality of learning is caused by the speculative and intuitive attitude of teachers in choosing learning methods and strategies. Therefore, improving the quality of education can be done by improving the quality of learning and improving the quality of learning can be achieved by increasing teacher knowledge about designing learning strategies and approaches that are more effective, efficient, and attractive.

The gap between the perception of the ease of learning Indonesian and the low learning outcomes of students has led to the emergence of various polemics in language teaching, especially Indonesian language teaching. Language is defined as a purely human and non-instinctive method of communicating ideas, emotions, and desires through a system of voluntarily produced symbols, according to (Syahrin, 2018) First and foremost, language is an auditory representational system of symbols. Language maintenance is cumpolsory responsibility of the users of the language (Ramlan, 2018). Language affects the thought and behaviour of human beings. The attitude of a person speaking more than one language is not the same as others who speak just one language (Akinwamide, 2018). Language is an arrangement of arbitrary symbols possessing an agreed upon significance within a community; furthermore, these symbols can be used and understood independent of immediate contexts, and they are connected in regular ways (Ramlan, 2018). The fact is that the teaching of Indonesian by teachers so far has forced students to memorize definitions, terms, sentence-forming elements, and so on without giving an understanding of what they are learning. Teachers also prefer to apply a one-way learning system, not as expected, namely two-way. In addition, students in the class are also less stimulated to be more communicative.

This condition causes Indonesian language learning in schools to feel monotonous and becomes less enjoyable for students. This causes students to pay less attention to the existence of language itself as a medium of communication, both orally and in writing. In learning Indonesian, teachers generally speak more, providing various theories of language and literature that students must know and memorize. The rules of language are taught, ordered, then students are required to memorize everything that is taught. The teacher should provide a solid understanding of the rules so that students can really understand them, then apply them in the proper use of language, both spoken and written.

It is also undeniable that many factors are involved in influencing student achievement in each field of study, including Indonesian language subjects. From several internal and external factors that are thought to affect learning outcomes, one of which is student locus of control. Students' locus of control must receive attention before starting learning so that a teacher can determine the most appropriate learning strategy for each student. Locus of control is inherent in students and cannot be changed quickly. It is the teacher who must adjust what strategy is most appropriate to be used according to the personality of the students being faced. The accuracy of learning strategies adapted to students' locus of control is expected to create satisfactory learning outcomes.

Initial knowledge is learning outcomes obtained before getting higher abilities. Students' initial knowledge is a prerequisite for participating in learning so that they can carry out the learning process well. Initial knowledge of students is important for teachers to be able to determine the right entry behavior line. Initial knowledge is also useful for taking the necessary learning steps.

To find out the phenomena of the two types of learning strategies (contextual teaching and learning (CTL) learning strategies and expository learning strategies in Indonesian subjects, and how they relate to locus of control (internal locus of control and external locus of control) and prior knowledge in improve student skills learning outcomes, it is necessary to conduct research.

II. Research Methods

This study uses an experimental method with 2x2 factorial. The research variables consist of: (1) the dependent variable, namely the results of learning Indonesian; (2) the independent variable is the treatment variable (A1: Contextual learning strategy and A2: expository learning strategy); and (3) attribute variables (B1: internal locus of control and B2: external locus of control). This study also considers additional variables that are not the focus of the study but can affect the results of the study and cannot be manipulated. The variable is the students' prior knowledge as a covariate variable.

The target population of this study were all students of class XI SMA Negeri 1 Air Putih as many as 310 people. The research sample was assigned to class XI MIPA1 and XI MIPA4 through random sampling technique. Determination of the experimental class and control class each 40 people. While the determination of students who have internal and external locus of control for each treatment class is done using a non-test instrument. Determination of the number of students who have an internal and external locus of control is based on a figural non-test score. A total of 12 people (40 x 30%) in the upper group were declared as having an internal locus of control and 12 people (40 x 30%) in the lower group were declared as having an external locus of control. So the total number of research samples is 80 people.

The hypothesis test (Rahman, 1996) was carried out using a two-way analysis of variance (ANKOVA) with a 2 x 2 factorial design. Further tests were carried out using the Tukey test [5]. Before testing the hypothesis, the requirements analysis test consists of: (1) normality test; (2) homogeneity test; (3) regression linearity test (Glass, 1984); (4) test the significance of the regression effect; and (5) line alignment test (Sudjaba, 2005).

III. Discussion

3.1 Semiotic Nature

Complete data on the summary of students' Indonesian language learning outcomes scores for each group are presented in Table 1.

Table 1. Data on Initial Knowledge Scores and Indonesian Learning Outcomes Based on Statistical Measures

***Locus of Control*(B)**		**Learning Strategy (A)**				□	
		CTL (A1)		**Expository (A2)**			
		Xi	**Yi**	**Xi**	**Yi**	**Xi**	**Yi**
	N	**12**	**12**	**12**	**12**	**24**	**24**
	X/Ȳ	62.08	85.62	65.41	71.25	63.75	78.43

Internal (B1)	**Mo**	65	70	57.5	67.5	65	80
	Me	63.75	73.75	65	71.25	65	78.75
	SD	10.21	5,12	7.74	5.16	9.02	8.90
	Min	45	77.5	55	62.5	45	62.5
	Max	80	92.5	80	80	80	92.5
External (B2)	**N**	**12**	**12**	**12**	**12**	**24**	**24**
	X/Ȳ	63.33	71.87	56.66	73.95	60	72.91
	Mo	52.5	70	47.5	75	52.5	70
	Me	61.25	71.25	56.25	75	58.75	73.75
	SD	9.61	5.34	7.71	7.34	9.17	6.37
	Min	52.5	62.5	47.5	60	47.5	60
	Max	80	80	72.5	85	80	85
□	**N**	**24**	**24**	**24**	**24**		
	X/Ȳ	62.70	78.75	61.04	72.60		
	Mo	52.5	70	57.5	75		
	Me	62.5	78.75	60	72.5		
	SD	9.72	8.69	8.78	6.36		
	Min	45	62.5	47.5	60		
	Max	80	92.5	80	85		

Hypothesis testing in this study relates to the main effect of the independent variables, namely the CTL strategy and the expository learning strategy. In addition, hypothesis testing is also related to testing the interaction (interaction effect), namely whether or not there is an interaction between learning strategies and Locus of Control on Indonesian language learning outcomes. The analytical technique used in testing the research hypothesis is the 2-way Ankova test. The results of calculations with Ankova are presented in Table 2.

Table 2. Summary of Hypothesis Testing with ANKOVA

Source Variance		Jkyres	db	RJKyres	Fo	F-table
Among	328.13	1	328.13	28,552	4.052	
Deliver B	141.36	1	141.36	12.301	4.052	
AxB Interaksi Interaction	1313.58	1	1313.58	114,301	4.052	
PA(X)	995.94	1	995.94	86,661	4.052	
In	494.17	43	11.49	-	-	
Total	2277.24	46	-	-	-	

** = significant (Fcount<Ftable at alpha 0.05)
ts = not significant (Fcount<Ftable)

Based on the results of the calculation of covariate analysis (Table 2) on the source of interaction variance A x B, there is a significant interaction between learning strategies and Locus of Control as evidenced by Fcount = 114.301 > from Ftable = 4.052; it is necessary to carry out further tests with the Tukey test, and the results of the calculations are presented in Table 3.

Table 3. Summary of Advanced Test with Tukey's Test

Criteria	Hypothesis	Qcount	Qtable	Decision
Reject Ho if Qh > Qt Accept Ho if Qh < Qt	$H_o: \mu_{11} \leq \mu_{21}$ $H_1: \mu_{11} > \mu_{21}$	**16.51**	**3.29**	**Ho Rejected**
	$H_o: \mu_{12} \geq \mu_{22}$ $H_1: \mu_{12} < \mu_{22}$	**-5.77**	**3.29**	**Ho Rejected**
	$H_o: \mu_{11} \leq \mu_{12}$ $H_1: \mu_{11} > \mu_{12}$	**14.73**	**3.29**	**Ho Rejected**
	$H_o: \mu_{21} \geq \mu_{22}$ $H_1: \mu_{21} < \mu_{22}$	**-7.6**	**3.29**	**Ho Rejected**

Table 4. Calculation Results of Residual Average Test

Group	Y	Y (corrected)
A1	78.8	78.30
A2	72.6	73.05
B1	78.4	77.43
B2	72.9	73.92
A1B1	85.6	85.51
A1B2	71.9	71.09
A2B1	71.3	69.36
A2B2	74.0	76.74

4.2 The Difference in Indonesian Language Learning Outcomes between Students who were taught Using the CTL Strategy and The Expository Learning Strategy, After Controlling For Prior Knowledge (Main Effects)

Based on the results of the ANKOVA calculation (Table 2) on the source of variance between A, it shows that the price of Fcount = 28,552 > from Ftable = 4,052 at = 0.05, the null hypothesis is rejected or there are differences in Indonesian language learning outcomes between students taught with CTL learning strategies with expository learning strategy. Thus, learning strategies have an effect on students' Indonesian learning outcomes after controlling for initial knowledge.

Furthermore, the acquisition of the average value of the learning outcomes of the group of students who were taught with the CTL $\bar{Y}_{A1}$ strategy = 78.30 and the group of students who were taught by the expository learning strategy $\bar{Y}_{A2}$ = 73.05. It can be seen that the learning outcomes of groups of students who were taught using the CTL strategy were higher than those of groups of students who were taught using expository learning strategies. This means that the CTL strategy is proven to have a more effective influence on learning outcomes Indonesian students so that it can be concluded that the learning outcomes of Indonesian students who use the CTL strategy are higher than students who use the expository learning strategy. Thus, the research hypothesis which states that there is a difference between the Indonesian language learning outcomes of students who use the CTL strategy and expository learning strategies after controlling for students' prior knowledge is verified.

4.3 The Difference in Indonesian Language Learning Outcomes between Students who have an Internal Locus of Control and Students who have an External Locus of Control, after Controlling for Initial Knowledge (Main Effect)

Based on the results of the ANKOVA calculation (Table 2) on the source of variance between B shows that the price of Fcount = 12,301 > from Ftable = 4,052 at = 0.05, the null hypothesis is rejected or there are differences in Indonesian language learning outcomes between students who have an internal locus of control with students who have an external locus of control. Thus, locus of control has an effect on students' Indonesian learning outcomes after controlling for initial knowledge.

Furthermore, the acquisition of the average value of learning outcomes for groups of students who have an internal locus of control $\bar{Y}_{B1}$= 77.43 and a group of students who have an external locus of control $\bar{Y}_{B2}$= 73.92. It can be seen that the learning outcomes of groups of students who have an internal locus of control are higher than the learning outcomes of groups of students who have an external locus of control. This means that locus of control is

proven to have a more effective influence on Indonesian learning outcomes. Thus, the research hypothesis which states that there is a difference between the Indonesian language learning outcomes of students who have an internal locus of control and students who have an external locus of control after controlling for students' prior knowledge is verified.

4.4 The Interaction between Learning Strategies and Locus of Control on Indonesian Language Learning Outcomes, after Controlling for Initial Knowledge (Interaction Effects)

Based on the results of the ANKOVA calculation (Table 2) on the AXB Interaction variance source, it shows that the price of Fcount = 114.301 > from Ftable = 4.052 at = 0.05, then H0 is rejected and H1 is accepted. This means that learning strategies have an influence on Indonesian language learning outcomes depending on the locus of control after controlling for initial knowledge, and vice versa. Thus the research hypothesis which states that there is an interaction between learning strategies and locus of control on Indonesian language learning outcomes has been proven true.

In the form of a graph of the interaction between learning strategies and locus of control on Indonesian language learning outcomes, it can be seen in Figure 1.

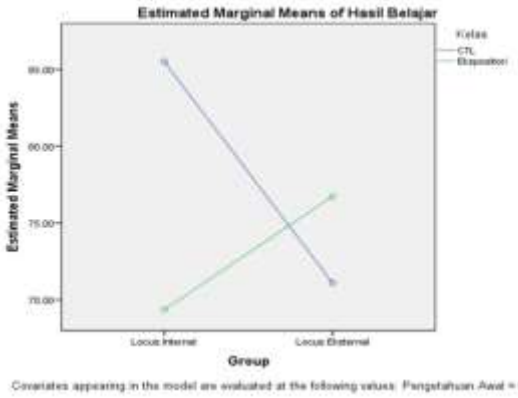

Figure 1. *Graph of the Interaction of Learning Strategies and Locus of Control on Indonesian Language Learning Outcomes after Controlling for Initial Knowledge*

Differences in Indonesian language learning outcomes of students who use CTL and expository learning strategies, in students who have an internal locus of control after controlling for initial knowledge (simple effects).

The results of the further test with the Tukey test in Table 3 show that the comparison of the Indonesian language learning outcomes of students who use CTL and expository strategies to students who have an internal locus of control obtained a value of Qcount = 16.51 > Qtable = 3.29 at =0.05 , then H0 is rejected and H1 is accepted. Based on the results of the average residual test (Table 4.16) the value $\bar{Y}_{(res)A1B1}$ = 85.51 > $\bar{Y}_{(res)A2B1}$ = 69.36. This shows that the learning outcomes of Indonesian students who are taught using CTL learning strategies are higher than those of students who are taught using expository learning strategies for students who have an internal locus of control. These results also show that students who have an internal locus of control are very appropriate to apply CTL learning strategies.

Differences in Indonesian language learning outcomes of students who use CTL and expository learning strategies, in students who have an external locus of control after controlling for initial knowledge (simple effects). Based on the results of further tests with Tukey's test in Table 3, it is known that the comparison of Indonesian learning outcomes of

students who are taught using CTL and expository learning strategies on students who have an external locus of control obtained the value of Qcount = -5.77 < Qtable = 3.29 at = 0.05, then H0 is rejected and H1 is accepted, the value $\bar{Y}_{(res)A1B2}$ = 71.09 < $\bar{Y}_{(res)A2B2}$ = 76.74.

Differences in students' Indonesian learning outcomes using internal and external locus of control, in students using CTL learning strategies after controlling for initial knowledge (simple effects). The results of the further test with the Tukey test in Table 3 show that the comparison of the Indonesian language learning outcomes of students who have internal and external locus of control on students who use the CTL strategy obtained a value of Qcount = 14.73 > Qtable = 3.29 at = 0.05, then H0 is rejected and H1 is accepted.

Obtained value $\bar{Y}_{(res)A1B1}$ = 85.51 > $\bar{Y}_{(res)A1B2}$ = 71.09. This shows that the learning outcomes of Indonesian students who have an internal locus of control tend to be higher than the learning outcomes of students who have an external locus of control in students who are taught using CTL learning strategies.

Differences in students' Indonesian learning outcomes using internal and external locus of control, in students using expository learning strategies after controlling for initial knowledge (Simple Effects). The results of further tests with Tukey's test in Table 3 show that the comparison of Indonesian language learning outcomes of students who have internal and external locus of control on students who use expository strategies obtained a value of Qcount = -7.6 < Qtable = 3.29 at =0, 05, then H0 is accepted and H1 is rejected.

Based on the results of the average residual test (Table 4), the value $\bar{Y}_{(res)A2B1}$ = 69.36 < $\bar{Y}_{(res)A2B2}$ = 76.74. This shows that the learning outcomes of Indonesian students who have an external locus of control are higher than the learning outcomes of students who have an internal locus of control in students who are taught using expository learning strategies.

IV. Conclusion

Based on the results of the study, the following conclusions can be drawn: (1) Indonesian language learning outcomes between groups of students taught with CTL learning strategies are higher than groups of students taught using expository strategies after controlling for prior knowledge, (2) Indonesian language learning outcomes between groups students who have a higher internal locus of control than the group of students who have an external locus of control after controlling for initial knowledge, (3) there is an interaction effect between learning strategies and locus of control on Indonesian language learning outcomes after controlling for initial knowledge.

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