



Snowball Throwing Learning Model (STLM): Is It Effective to Improve Students' Cognitive Abilities and Learning Motivation in History Learning at the High School Level

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Abstract

History learning, especially at the high school level, requires innovation because it often faces obstacles in the form of extensive material that can leave students less motivated and make it challenging to achieve optimal cognitive performance. This study aims to test the effectiveness of the Snowball Throwing Learning Model (STLM) in improving students' cognitive ability and learning motivation in Dutch colonial materials in grade XI of SMAN 1 Kauman. The research used a quasi-experimental design with a quantitative approach, involving an experimental group and a control group consisting of 30 students each. Data were collected via learning outcome tests and motivation questionnaires and analyzed using t-tests and MANOVA. The results showed a significance value (2-tailed) of 0.000, which is smaller than 0.05, indicating that STLM has a significant effect on students' motivation and cognitive abilities. This model encourages students to actively engage in cooperative activities, exchange information, and develop critical thinking skills through the dynamic process of creating and discussing questions. In addition, STLM enhances classroom interaction, students' creativity, and their understanding of historical concepts. These findings suggest that STLM is effectively applied in history learning at the high school level and has the potential to be adopted more widely to support active, collaborative, and meaningful learning.

Keywords: *Snowball Throwing Model; Learning Motivation; Cognitive Abilit*

Abstrak

Pembelajaran sejarah khususnya di tingkat SMA memerlukan suatu inovasi karena sering menghadapi kendala berupa materi yang sangat luas sehingga membuat siswa kurang termotivasi dan sulit mencapai kemampuan kognitif yang optimal. Penelitian ini bertujuan untuk menguji efektivitas *Snowball Throwing Learning Model* (STLM) dalam meningkatkan kemampuan kognitif dan motivasi belajar siswa pada materi penjajahan Belanda di kelas XI SMAN 1 Kauman. Penelitian menggunakan desain kuasi-eksperimental dengan pendekatan kuantitatif, melibatkan kelompok eksperimen dan kelompok kontrol yang masing-masing terdiri atas 30 siswa. Data dikumpulkan melalui tes hasil belajar dan kuesioner motivasi, kemudian dianalisis menggunakan uji-t dan MANOVA. Hasil penelitian menunjukkan nilai signifikansi (2-tailed) sebesar 0,000, lebih kecil daripada 0,05, yang menandakan bahwa STLM berpengaruh signifikan terhadap motivasi dan kemampuan kognitif siswa. Model ini mendorong siswa untuk aktif terlibat dalam kegiatan kooperatif, bertukar informasi, serta mengembangkan keterampilan berpikir kritis melalui proses dinamis pembuatan dan diskusi pertanyaan. Selain itu, STLM meningkatkan interaksi kelas, kreativitas siswa, dan pemahaman mereka terhadap konsep-konsep sejarah. Temuan ini menunjukkan bahwa STLM efektif diterapkan dalam pembelajaran sejarah di tingkat SMA dan berpotensi diadopsi secara lebih luas untuk mendukung pembelajaran yang aktif, kolaboratif, dan bermakna.

Kata kunci: *Snowball Throwing*; Motivasi Belajar; Kemampuan Kognitif

A. Introduction

Education is a necessary process that improves the quality of human life. The quality of education can be measured by the productivity of an educated workforce, which is linked to economic growth (Eviani & Khusna, 2023). An important ability that must be developed in the world of education is cognitive ability. Students should not be required to study subject matter but rather to hone their memory and think critically to face various problems, both in the school environment and in the community (Wulandari et al., 2023).

These cognitive, affective, and psychomotor abilities are classified into three main domains of student learning outcomes. Cognitive learning outcomes are related to the ability to receive information and reuse it to solve problems (Anisyatunnisa et al., 2020). Anderson and Krathwohl classify cognitive learning outcomes into six indicators, namely knowledge, understanding, application, analysis, evaluation, and creation. A problem that often occurs in the world of education in Indonesia is the lack of creative learning that takes place in the classroom (Kharisma & Khusna, 2023). Monotonous activities, such as lectures, tend to make students passive and cause them to memorize the material without

understanding the context. This causes students to lack motivation to learn as well as their cognitive abilities, including in history subjects (Rifa & Khusna, 2024).

Especially in history learning, many students show an unenthusiastic attitude, such as not paying attention to the teacher's explanations, not answering questions, and preferring to play on their mobile phones during learning. History is an important subject in shaping students' historical awareness and critical attitudes towards various past events that are relevant to present life (Kamalis, 2021). In addition, students' low interest in reading affects their understanding of complex social studies materials (Fazriyani et al., 2025). To solve this problem, a more innovative learning style is needed, and students can be actively involved. The model that can be used is the STLM (Nurjannah et al., 2022).

This model emphasizes enthusiastic students through question-and-answer activities in a game format, where students create questions shaped like paper balls and throw them to friends to answer. This activity encourages students to think critically, collaborate, and understand the material in a more fun and meaningful way (Rosidsh Ani, 2017). The Snowball Throwing model (STM) has the potential to increase learning outcomes and student motivation. In an interactive and fun learning atmosphere, students are encouraged to participate more actively, their understanding of the material increases, and their motivation to participate in history learning (Sulastri, 2019).

The low motivation and cognitive ability of students in history learning indicate the need to renew learning strategies. The existence of this learning model makes the learning atmosphere more active and, of course, students more creative. The objectives of this study are 1) to determine the effect of the application of the STLM (STM) on students' learning motivation, 2) to determine the application of the STLM (STM) to students' cognitive abilities, and 3) to determine the effect of the application of the STLM on students' motivation and cognitive abilities. The results of this study have implications for various parties. For students, applying the STLM (STM) can increase motivation and cognitive ability in understanding historical material. For teachers, these findings can serve as a reference when choosing a more active and engaging learning strategy. For the school, the results of this research can be used to support the adoption of innovative learning models to improve classroom learning quality.

Based on this, this study has 3 hypotheses, namely hypotheses 1 (H_0 = There is no effect of the STLM on the motivation of students of Dutch colonial material; H_1 = There is an influence of the STLM on the motivation to learn Dutch colonial material), hypotheses 2 (H_0 = There was no influence of the STLM on the cognitive ability of students of Dutch colonial material, H_1 = There is an influence of the STLM on the

cognitive ability of students of Dutch colonial material, hypotheses 3 (H_0 = There was no effect of the STLM on the motivation and cognitive ability of students of Dutch colonial material, H_1 = There is an influence of the STLM on the motivation and cognitive ability of students of Dutch colonial material.

B. Methods

A quantitative approach was applied in this study. A scientific approach is systematically applied to study specific parts, symptoms, and their relationships (Hardani, 2020). A pre-experimental quasi-experimental design is used. This research was carried out at SMAN 1 Kauman. The research population comprises all students in class XI Social Studies, totaling 175 students. 30 students in grade XI-I collected the samples as the control class, and 30 students in grade XI-H collected the samples as the experimental class at SMAN 1 Kauman. Data measurement uses tests to determine knowledge levels and questionnaires to measure student motivation. Previous tests validated both instruments. Normality and homogeneity tests are also performed before the analysis. Data analysis using t-tests and MANOVA.

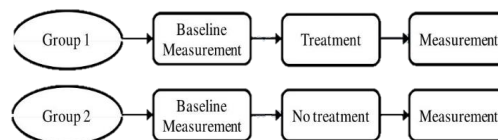


Image 1. Quasi Experiment Design

C. Discussion

1. Result

The prerequisite test was carried out through data analysis in the form of normality and homogeneity tests on the data obtained during the research. The data if the normality and homogeneity requirements are examined in more detail using *the T-test* and MANOVA tests. Trials of research instruments are carried out first in the implementation of the research, including validity and reliability tests. Data analysis was completed using the SPSS application version 22.

a. Test Instruments

1) Validity Test

The acquisition of test instruments in cognitive elements and student learning motivation questionnaires in the trial using *SPSS 22* showed that the results were valid and feasible to be used in the study. The results revealed that the calculation $> r_{table}$ at a

significance level of 5%, indicating that the requirements are valid (Andi Irwan Kasim, 2024). According to the materials collected based on the rtable value $N = 30$, the significance level of 5% is 0.361. The result achieved with a calculation > 0.361 is valid.

Table 1. Testing the Validity of Student Motivation Questionnaire Instruments

Question Item	R Count (rxy)	R Table (N = 30) Significant Rate 5%	Information
1.	0,545	0,361	Valid
2.	0,412	0,361	Valid
3.	0,577	0,361	Valid
4.	0,423	0,361	Valid
5.	0,604	0,361	Valid
6.	0,678	0,361	Valid
7.	0,569	0,361	Valid
8.	0,419	0,361	Valid
9.	0,427	0,361	Valid
10.	0,597	0,361	Valid
11.	0,498	0,361	Valid
12.	0,515	0,361	Valid
13.	0,643	0,361	Valid
14.	0,600	0,361	Valid
15.	0,749	0,361	Valid
16.	0,396	0,361	Valid
17.	0,385	0,361	Valid
18.	0,486	0,361	Valid
19.	0,376	0,361	Valid
20.	0,430	0,361	Valid

The data in table 1 can be found that the calculation $> r$ table so that the conditions can be achieved. The instrument of 20 questions is valid and suitable to be used as a research test to be carried out.

Table 2. Test the Validity of Student Cognitive Ability Test Instruments

Question Item	R Count (r _{xy})	R Table (N = 30) significant Rate 5%	Information
1.	0,523	0,361	Valid
2.	0,560	0,361	Valid
3.	0,407	0,361	Valid
4.	0,378	0,361	Valid
5.	0,403	0,361	Valid
6.	0,472	0,361	Valid
7.	0,476	0,361	Valid
8.	0,495	0,361	Valid
9.	0,427	0,361	Valid
10.	0,436	0,361	Valid
11.	0,477	0,361	Valid
12.	0,490	0,361	Valid
13.	0,403	0,361	Valid
14.	0,384	0,361	Valid
15.	0,582	0,361	Valid
16.	0,368	0,361	Valid
17.	0,555	0,361	Valid
18.	0,368	0,361	Valid
19.	0,365	0,361	Valid
20.	0,384	0,361	Valid

The data in table 2 can be found that the calculation > r table so that the provisions can be achieved. The instrument with 20 questions is valid and feasible to be used as a research test to be carried out.

2) Reliability Test

The results of the reliability test were analyzed using SPSS 22 and Cronbach alpha's values (Anisa Kusuma Arum et al., 2025). The learning motivation data has a value of 0.850. This number is between 0.81 and 1.00, which suggests that the data is highly testable. The student's cognitive ability score is 0.787. This value is between 0.61 and 0.80, which indicates that the data has been tested (reliable).

Table 3. Learning Motivation Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.850	20

Table 4. Cognitive Ability Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.787	20

b. Prerequisite Test

1) Normality Test

The normality test is applied to meet the requirements for the implementation of the T-test. The data on the *T*-test should be normally distributed. When the data is not normally distributed, the testing process cannot continue. Data is considered normal if the significance value is more than 0.05, while abnormal data has a significance value of less than 0.05 (Zulkifli et al., 2025). Normality was tested with *the* Kolmogorov-Smirnov test in the SPSS 22 program.

Table 5. Normality Test of Learning Motivation

One-Sample Kolmogorov-Smirnov Test			
		Motivasi Kelas Kontrol	Motivasi Kelas Eksperimen
N		30	30
Normal Parameters ^{a,b}	Mean	60.47	75.67
	Std. Deviation	4.462	4.574
Most Extreme Differences	Absolute	.143	.138
	Positive	.143	.138
	Negative	-.086	-.078
Test Statistic		.143	.138
Asymp. Sig. (2-tailed)		.119 ^c	.153 ^c
a. Test distribution is Normal.			
b. Calculated from data.			
c. Lilliefors Significance Correction.			

While the control class's score was $0.119 > 0.05$, the experimental class's student learning motivation questionnaire yielded a significance value of $0.153 > 0.05$. The data satisfies the criteria for a normal distribution. According to the evaluation criteria, if the significance value is more than 0.05, the data is deemed to be regularly distributed. It was determined that the student learning motivation questionnaire values in both courses were distributed normally.

Table 6. Normality Test of Cognitive Ability

One-Sample Kolmogorov-Smirnov Test			
		Kelas Kontrol	Kelas Eksperimen
N		30	30
Normal	Mean	55.67	67.00
Parameter	Std. Deviation	11.043	10.554
Most	Absolute	.229	.213
Extreme	Positive	.229	.213
Differences	Negative	-.137	-.191
Kolmogorov-Smirnov		1.256	1.167
Z			
Asymp. Sig. (2-tailed)		.085	.131
a. Test distribution is Normal.			
b. Calculated from data.			
c. Lilliefors Significance Correction.			

The data was distributed regularly because the cognitive capacity of students in the experimental class was substantially $0.131 > 0.05$ and in the control class was considerably $0.085 > 0.05$. It is possible to express the cognitive ability scores of the students in the experimental and control groups as regularly distributed.

2) Homogeneity Test

When the significance value is more than 0.05, the data is considered homogeneous. They do not have the same level of significance if the significance value is less than 0.05. SPSS 22 was used for the data analysis procedure.

Table 7. Results of the Homogeneity Test of Student Learning Motivation Questionnaire

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
Motivasi Belajar	Based on Mean	.073	1	58	.788
	Based on Median	.085	1	58	.772
	Based on Median and with adjusted df	.085	1	55.906	.772
	Based on trimmed mean	.079	1	58	.779

The significance value on the student learning motivation questionnaire was 0.778 > 0.05 . The assessment criteria explained that if the significance value was more than 0.05, the two samples were considered homogeneous. As a result, it can be concluded that

the value of the learning motivation questionnaire of the experimental class and the control class is homogeneously distributed.

Table 8. Results of the Homogeneity Test Pretest of Students' Cognitive Ability

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
Pretest kelas kontrol dan eksperimen	Based on Mean	.017	1	58	.896
	Based on Median	.000	1	58	1.000
	Based on Median and with adjusted df	.000	1	52.659	1.000
	Based on trimmed mean	.016	1	58	.899

On the students' cognitive ability posttest, the significance value was $0.896 > 0.05$. If the significance level is higher than 0.05. The two samples are regarded as homogenous. These findings account for the homogeneity of students' cognitive ability pretest scores in the experimental and control groups.

3) Hypotheses test

Hypotheses 1 and 2 were tested using the T-test, while hypothesis 3 was tested with MANOVA (Multivariate Analysis of Variance). Hypothesis testing was carried out with SPSS 22. H_0 is subtracted and H_1 is accepted when the Sig (2-tailed) value is less than 0.05.

a. The T-test

Hypothesis 1

H_0 = There is no effect of the STLM on the motivation of students of Dutch colonial material in grade XI of SMAN 1 Kauman.

H_1 = There is an influence of the STLM on the motivation to learn Dutch colonial material in class XI SMAN 1 Kauman

Table 9. Results of the T-Test Student Learning Motivation Questionnaire

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Differ ence	Std. Error Differ ence	95% Confidence Interval of the Difference	
									Lower	Upper
Motivasi Belajar	Equal variances assumed	.073	.788	13.0	58	.000	15.200	1.167	17.535	-12.865
	Equal variances not assumed			13.0	57.9	.000	15.200	1.167	17.535	-12.865

Hypothesis 2

H_0 = There was no influence of the STLM on the cognitive ability of students of Dutch colonial material in class XI of SMAN 1 Kauman.

H_1 = There is an influence of the STLM on the cognitive ability of students of Dutch colonial material in grade XI of SMAN 1 Kauman.

Table 10. Results of the T-Test for Students' Cognitive Ability

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Differ ence	Std. Error Differ ence	95% Confidence Interval of the Difference	
									Lower	Upper
Kemampuan Kognitif	Equal variances assumed	1.437	.236	3.34	58	.001	-7.500	2.244	11.992	-3.008
	Equal variances not assumed			3.34	55.5	.001	-7.500	2.244	11.996	-3.004

b. MANOVA Test

The next hypothesis test is the MANOVA test, which is used to test the third hypothesis, namely the influence of the STLM on students' motivation and cognitive ability.

Hypothesis 3

H_0 = There was no effect of the STLM on the motivation and cognitive ability of students of Dutch colonial material in grade XI SMAN 1 Kauman.

H_1 = There is an influence of the STLM on the motivation and cognitive ability of students of Dutch colonial material in grade XI of SMAN 1 Kauman.

Table 11. MANOVA Test Results of Students' Motivation and Cognitive Ability

Multivariate Tests ^a						
Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.997	8312.512 ^b	2.000	57.000	.000
	Wilks' Lambda	.003	8312.512 ^b	2.000	57.000	.000
	Hotelling's Trace	291.667	8312.512 ^b	2.000	57.000	.000
	Roy's Largest Root	291.667	8312.512 ^b	2.000	57.000	.000
Model Pembelajaran	Pillai's Trace	.748	84.615 ^b	2.000	57.000	.000
	Wilks' Lambda	.252	84.615 ^b	2.000	57.000	.000
	Hotelling's Trace	2.969	84.615 ^b	2.000	57.000	.000
	Roy's Largest Root	2.969	84.615 ^b	2.000	57.000	.000
a. Design: Intercept + Model Pembelajaran						
b. Exact statistic						

The first hypothesis has a significance of 0.000, smaller than the 0.05 threshold. The second hypothesis yields a value of $0.001 < 0.05$. The third hypothesis shows a significance level of $0.000 < 0.05$. The data explains when H_0 is rejected and H_1 is accepted. In conclusion, the snowball-throwing learning technique affects the motivation and cognitive ability of students in Dutch colonial materials in grade XI of SMAN 1 Kauman.

2. Discussion

a. The Effect of the STLM on Students' Learning Motivation in Dutch Colonial Materials Class XI SMAN 1 Kauman

Classes XI-I served as a control and XI-H as an experiment in the study conducted at SMAN 1 Kauman. The analysis's findings demonstrated that, in contrast to using PowerPoint, the Snowball Throwing model had an impact on learning motivation. Prior to the study, testing for homogeneity and normalcy was performed as prerequisite. The results of the normality test indicated that the data were normally distributed, with values of 0.119 (control) and 0.153 (experiment), both > 0.05 . The data was deemed homogeneous after the homogeneity test revealed a significance of $0.788 > 0.05$.

Following the precondition test, data analysis was conducted using the Independent Sample T-Test for hypothesis testing, as indicated in Table 4.27. H_0 is rejected and H_1 is accepted when the Sig. (2-tailed) value of 0.000 is less than the significance level of 0.05. The experimental class received an average score of 75.67, whereas the control group received an average score of 60.75. The analysis's findings demonstrate how the STLM affects students' motivation to learn Dutch Colonial content in grade XI at SMAN 1 Kauman.

The STLM encourages students to be active, happy, and able to work together to solve problems. Students' knowledge develops as they explain the material to friends who do not yet understand. Students more easily understand the material through their peers' explanations, and all group members benefit from this learning (Sagala & Hasibuan, 2023). Research by Nina Setiawati and Yeni Wijayanti at MA Al Istiqomah Rajadesa shows that this method increases motivation to learn history. Improvements are seen in cooperative aspects such as cooperation, listening, respecting opinions, and presenting group results. The results of the hypothesis test in SPSS showed that the t-count (34,567) was greater than the t-table (2,048), indicating an increase in learning motivation after the application of Snowball Throwing (Setiawati et al., 2022).



Figure 2. Learning with snowball throwing model (experimental class)



Figure 3. Learning with power point media (control class)

These findings are in line with the research of Aulia Safna and Weni Widya Asriati at SMP Negeri 43 Medan, which showed a 20% increase in student learning motivation through the Snowball Throwing model. This model also increased mathematical problem-solving ability by 28%, judging from the comparison of pretest and posttest average scores. The hypothesis test showed a significance value (2-tailed) = $0.000 < 0.05$, both in learning motivation and problem-solving ability, so that H_0 was rejected and H_a was accepted. These results show that Snowball Throwing has a significant effect compared to conventional learning methods (Safna & Asriati, 2023).

The findings of earlier research demonstrated that the hypothesis was supported and that the control class and the experimental class employing the Snowball Throwing model had significantly different learning motivation questionnaire scores. According to earlier research, students in the experimental class were more motivated than those in the control group. Because they are not bored while studying, students are more motivated. An approach for fostering a love of learning and promoting student participation in the educational process is the snowball throwing model.

b. The Effect of the STLM on Students' Cognitive Abilities in Dutch Colonial Materials Class XI SMAN 1 Kauman

This study aims to measure students' motivation and cognitive ability on Dutch colonial material. Data were collected from classes XI H (experiment) and XI I (control). The results of the analysis showed that the Snowball Throwing model had an effect on students' cognitive abilities, compared to the PowerPoint method. Prerequisite tests show normal and homogeneous data. H_0 was rejected, and H_1 was accepted based on the Independent Sample T-Test findings, which showed a Sig. (2-tailed) value of $0.001 < 0.05$. The experimental class's average score was 86.17, compared to the control class's 78.67, demonstrating the Snowball Throwing model's beneficial effects on students' cognitive capacities.

Research by Ode Sofyan Hardi (2024) shows that the snowball throwing method improves the cognitive learning outcomes of grade X students in the Lithosphere Dynamics material at SMA Negeri 61 Jakarta. Classes that use this method get an average score of 90.06, while classes without the method are only 80.67. The independent sample t-test showed a significance value of $0.001 < 0.05$, so H_0 was rejected and H_a was accepted. Each meeting showed an increase in cognitive learning outcomes, ranging from C1 to C4, as well as increased student activity.

Research (Nurdiana et al., 2023) at SMA Negeri 8 Mukomuko also revealed that the snowball throwing model improves students' cognitive learning outcomes in biology. The t-test showed a value of $t = 2.473$ and $p = 0.016$, which means that there is a significant influence of the application of this model in improving students' cognitive learning outcomes.

Previous research has shown significant differences between students' test scores in experimental and control classes. The experimental class, which used the snowball throwing model, showed higher cognitive abilities compared to the class that used conventional methods. This model has been shown to be effective in improving learning outcomes, especially students' cognitive abilities.

c. The Influence of the STLM on Students' Motivation and Cognitive Ability in Dutch Colonial Materials at SMAN 1 Kauman

The results of data analysis and hypothesis testing showed that there was an influence of the STLM on the motivation and cognitive ability of students of Dutch colonial material in class XI of SMAN 1 Kauman. The results of data analysis used the MANOVA test. The results of the MANOVA test are shown in table 11, where a significance value of $0.000 < 0.05$ is obtained. This indicates that H_0 is rejected and H_1 is accepted.

Snowball throwing-type cooperative learning and conventional learning have significant differences in implementation and results. The cooperative learning model is more effective in improving student motivation and learning outcomes. The activeness and learning skills of students who use the cooperative model are much higher than those who use conventional methods. Cooperative learning has proven to be more beneficial in developing students' skills (Mulyani et al., 2021).

Research (Astutik et al., 2021) shows that there is a relationship between learning motivation and social studies learning outcomes of high-grade students at SDN Randuati. Data analysis revealed that learning motivation significantly improves learning outcomes. The learning model is also influenced by factors that affect students' understanding of concepts, one of which is learning motivation (Khusna et al., 2022). Students' motivation during learning can drive activities, initiatives, and perseverance.

Research (Sagala & Hasibuan, 2023) Multivariate analysis with a significance value of 0.009 (less than 0.05) indicates a significant influence of the Snowball Throwing model on student motivation and learning outcomes. The F-values for all indicators (Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root) are significant. The influence of this model can be seen significantly in the exponential material in the Independent Learning curriculum in class X of SMA Negeri 1 Merbau. The snowball throwing model has a significant influence on student motivation and learning outcomes, both univariate and multivariate.

In conclusion, the STLM can improve students' motivation and cognitive abilities. The application of this learning model leads to greater improvement in students' cognitive abilities than conventional methods. Student motivation also increased with the STLM. This learning model is fun and makes students more active in learning.

With this, the use of STML supports the theory of Joan Piaget, who was the first figure of constructivism theory. He said that in defining knowledge must be based on several things: 1) assimilation, which is a person's cognitive process where a person can integrate their new perceptions or experiences into old patterns or experiences that already

exist in their minds, and this is in the application of STML; 2) schema, a concept used when a person interacts with his environment; 3) accommodation, forming a new schema or modifying an existing schema to fit a new or existing stimulus; and 4) equilibrium, the balance that occurs between assimilation and accommodation so that one can unite or combine external experiences with the structures within. These four processes are in the STML model and must indeed be owned by students in order to create a new knowledge construction.

D. Conclusion

Based on data analysis, it can be concluded that the STLM has an effect on students' motivation and cognitive ability in learning Dutch colonial history material at SMAN 1 Kauman. The t-test for student motivation showed a value of Sig. (2-tailed) = 0.000. The score confirms that if it is smaller than 0.05 indicates that H_0 is rejected and H_1 is accepted. The t-test on the student's cognitive ability in learning history resulted in a score of Sig. (2-tailed) = 0.001. A significance value smaller than 0.05, it indicates that H_0 is rejected and H_1 is accepted. The results of the MANOVA test analysis for students' motivation and cognitive ability in history learning showed a value of Sig. (2-tailed) = 0.000. With a significance of < 0.05 , H_0 is rejected and H_1 is accepted. In conclusion, the application of the learning model can increase the motivation and cognitive ability of students of Dutch colonial material in grade XI of SMAN 1 Kauman.

The advice that can be shared through this research for teachers is that the results of the research can be a reference for teachers in giving more attention to students, especially in providing motivation such as support in learning. Suggestions for students with the application of the STLM make students happy in the process of learning history so that they can optimize motivation and cognitive abilities. This research has limitations because it examines only the influence of STML on students' cognitive abilities and learning motivation for specific materials. Finally, for future research, it can serve as a valuable reference in the field of history, especially regarding students' motivation and cognitive abilities. In addition, it provides opportunities for other researchers to examine the influence of STML on variables and other materials.

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