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Abstract

This study aims to determine the influence of Spinning Wheel learning media on learning outcomes in Social Sciences (IPS) for Class VII students at SMP Swasta Teladan Pematangsiantar. Spinning Wheel learning media is a type of learning media that can create a more enjoyable and engaging learning atmosphere. This research uses a quantitative approach with an experimental method (quasi-experimental) of the Nonequivalent control group design type. The population of this study was all Class VII students at SMP Swasta Teladan Pematangsiantar. The research sample was selected using a purposive sampling technique, which involves selecting samples based on specific considerations that align with the desired criteria to determine the number of samples to be studied. Two classes were involved: an experimental class that used Spinning Wheel learning media and a control class that used a conventional learning model without the aid of media. Student learning outcome data was collected through learning outcome tests (pretest and posttest). The results showed a significant difference between the learning outcomes of students taught using Spinning Wheel learning media and those taught using a conventional learning model without the aid of learning media. The significance values for the pretest of the experimental class were 0.108 and for the posttest of the experimental class were 0.110, while for the pretest of the control class they were 0.104 and for the posttest of the control class they were 0.172. In the Kolmogorov Smirnov column, values > 0.05 indicate that the data is normally distributed. In the homogeneity test, the pretest results for the control and experimental classes were 1.563, and the posttest results for the control and experimental classes were 0.053, meaning the data is homogeneous because it is < 1.882 (F-table) at a significance level of 0.05. In the hypothesis test, the calculated t-value for the pretest of the experimental and control classes was 2.555, and for the posttest of the experimental and control classes, the calculated t-value was 1.712. Comparing these to the t-table value of 1.672, where t-calculated > t-table, it can be concluded that Ha is accepted and Ho is rejected, meaning there is an influence of Spinning Wheel learning media on student learning outcomes. The N-gain test results were 0.553 for the control class with the conventional model, which falls into the medium category, and 0.556 for the experimental class with Spinning Wheel media, also falling into the medium category. The Coefficient of Determination test showed an R-squared value of 0.611, which is close to 1, indicating that Spinning Wheel learning media significantly influences learning outcomes. Thus, Spinning Wheel learning media is effective in improving student learning outcomes in Social Sciences.

Keywords: Spinning Wheel, learning outcomes, Social Sciences, Junior High School

INTRODUCTION

Education is a crucial tool in shaping individuals' mindsets regarding life's challenges. The educational process is inextricably linked to learning media, which serve as tools for teachers to deliver material more effectively and efficiently. Learning media plays a strategic role in fostering students' psychological development, particularly in transforming abstract material into something more concrete and easily understood. Learning media like the Spinning Wheel have the potential to create a fun, motivating learning environment and encourage active student participation. This media can stimulate

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students' thoughts, interests, and attention, and facilitate teachers in achieving established learning objectives. However, the reality on the ground shows that student learning outcomes in Social Studies (IPS) at Pematangsiantar's Exemplary Private Middle School are still relatively low. Based on data from the Odd Semester Summative Exam for the 2024/2025 Academic Year, of 87 seventh-grade students, only 46% achieved a passing grade (≥75), while 54% failed to achieve the Learning Objectives Achievement Criteria (KKTP). This indicates a gap between teacher expectations and actual student learning outcomes.

Interviews with social studies teachers and several students also indicated that the lack of engaging learning media contributed to low student motivation and concentration during the learning process. Students tended to feel bored, passive, and lacked focus due to the conventional learning methods used with minimal variation. To address these challenges, the Spinning Wheel learning tool is seen as an innovative alternative. With its rotating wheel-like structure, this tool presents questions or assignments in an interactive and challenging way, motivating students to actively engage in learning. Furthermore, this tool makes it easier for teachers to directly and comprehensively assess student understanding.

LITERATURE REVIEW

Learning outcomes

Learning outcomes are students' abilities after participating in a learning process that encompasses cognitive, affective, and psychomotor aspects (Syaputra Artama et al., 2023). Factors influencing learning outcomes include physical condition, motivation, interest, environment, and learning approach (Wardana & Djamaluddin, 2020).

Instructional Media

Learning media serves as a tool to clarify material, increase interest, and enhance learning effectiveness (Ani Cahyadi, 2019). One innovative medium is the Spinning Wheel, a fun, interactive, and rotating wheel-shaped tool. This medium can increase student participation, understanding, and motivation (Nayli & Prayogo, 2023).

Conventional learning model

Conventional learning models such as lectures are one-way, with students acting as passive recipients (Helmiati, 2012). While easy to use, this method does not support active student engagement.

Previous research (Lestari et al., 2024; Putri & Della, 2024) proved that the Spinning Wheel media had a significant effect on improving learning outcomes, especially in social studies subjects at the junior high school level.

METHOD

This study used a quantitative approach with a quasi-experimental method and a Nonequivalent Control Group Design. This design involved two non-randomly selected groups: an experimental group using the Spinning Wheel learning media, and a control group using conventional learning methods without media. The population in this study was all 87 seventh-grade students of SMP Swasta Teladan Pematangsiantar in the 2024/2025 academic year. The sample was determined using a purposive sampling technique, with a total of 58 students from two classes: 29 students in the experimental class and 29 students in the control class. The instrument used was a multiple-choice test consisting of 30 questions that had been tested for validity and reliability. This test was given in the form of a pretest and posttest to measure student learning outcomes. Data analysis techniques included a normality test, a homogeneity test, a t-test (independent sample t-test), an N-Gain test, and a coefficient of determination (R²) to determine the influence and effectiveness of using the Spinning Wheel media on improving student learning outcomes.

RESULTS AND DISCUSSION

Data Analysis Technique Test

Validity Test

Validity test is a test conducted to determine whether the questions given accurately measure students' abilities according to the material being taught. With the provision that rhitung > r tabel at $\alpha = 0.05$. Where r tabel = 0.367 then the question is declared valid.

Table 1. Validity Test Result Data
Validity test of Ouestion 1

	Validity test of Question 1			
R count	R table	Information		
0.469	0.367	VALID		
0.431	0.367	VALID		
0.373	0.367	VALID		
0.548	0.367	VALID		
0.409	0.367	VALID		
0.420	0.367	VALID		
0.459	0.367	VALID		
0.465	0.367	VALID		
0.434	0.367	VALID		
0.429	0.367	VALID		
0.407	0.367	VALID		
0.404	0.367	VALID		
0.473	0.367	VALID		
0.415	0.367	VALID		
0.487	0.367	VALID		
0.492	0.367	VALID		
0.388	0.367	VALID		
0.386	0.367	VALID		
0.413	0.367	VALID		
0.386	0.367	VALID		
	0.469 0.431 0.373 0.548 0.409 0.420 0.459 0.465 0.434 0.429 0.407 0.404 0.473 0.415 0.492 0.388 0.386 0.413	0.469 0.367 0.431 0.367 0.373 0.367 0.548 0.367 0.409 0.367 0.459 0.367 0.465 0.367 0.434 0.367 0.407 0.367 0.404 0.367 0.404 0.367 0.415 0.367 0.487 0.367 0.492 0.367 0.388 0.367 0.386 0.367 0.413 0.367		

(Source: Excel version 2022)

Validity Test of Question 2

No	R count	R table	Information
1	0.475	0.367	VALID
2	0.821	0.367	VALID
3	0.694	0.367	VALID
4	0.821	0.367	VALID
5	0.882	0.367	VALID

(Source: Excel version 2022)

Based on table 1 above, there are 25 questions that are declared valid. For time efficiency, the number of questions needed is sufficient, namely 25 questions, so the researcher will use these 25 questions for the next stage.

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Reliability Test

After the validity test was conducted, the items were then tested for reliability. The purpose of the reliability test was to determine the consistency of the instrument as a measuring tool, thus ensuring its reliability for use as a data collection tool. In this study, reliability calculations were carried out using Excel version 16. The results of the item reliability test can be seen in Table 2 below.

Table 2 Reliability Test

Instrument's Shape	Reliability Coefficient	Category
Multiple choice (First test)	0.808	Reliability
Multiple choice (Second test)	0.687	Reliability

(Source: Excel version 2022)

Based on the reliability test in the table above, the results of the reliability test were obtained with coefficients of 0.808 and 0.687 so that it is included in the reliability level with criteria ≥ 0.60 .

Difficulty Level Test

The test of the level of difficulty of the questions was carried out to find out from the questions being tested whether the questions were included in the category of difficult, medium or easy questions. The calculation of the level of difficulty was carried out using Excel version 22, the researcher carried out an analysis of the level of difficulty of 25 multiple choice test items. The results of the test on the level of difficulty of the question instrument can be seen in the table below.

Table 3 Test Item Difficulty

Question Number	Difficulty Level	Information
1	0.414	CURRENTLY
2	0.621	CURRENTLY
3	0.552	CURRENTLY
4	0.414	CURRENTLY
5	0.791	EASY
6	0.517	CURRENTLY
7	0.690	CURRENTLY
8	0.552	CURRENTLY
9	0.586	CURRENTLY
10	0.414	CURRENTLY
11	0.517	CURRENTLY
12	0.621	CURRENTLY
13	0.517	CURRENTLY
14	0.448	CURRENTLY
15	0.586	CURRENTLY
16	0.552	CURRENTLY
17	0.655	CURRENTLY
18	0.552	CURRENTLY
19	0.552	CURRENTLY
20	0.552	CURRENTLY
21	0.483	CURRENTLY
22	0.345	CURRENTLY
23	0.310	CURRENTLY
24	0.345	CURRENTLY
25	0.345	CURRENTLY

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Question Number	Information	
		Easy: 1
	Results	Medium: 24
		Difficult: 0

(Source: Excel version 2022)

From the table above, it can be concluded that there are 24 questions with a medium level of difficulty and 1 question with an easy level of difficulty, with the lowest score being 0.310 for question number 23 and the question with the highest score being question number 5 with a score of 0.791. This means that each question item is suitable for testing on the research sample.

Differential Power Test

The discrimination power test was conducted to determine whether the question items had a classification of poor, sufficient, good, and excellent discrimination power. The discrimination power test was also used to measure the extent to which the question items were able to differentiate students who had mastered the competency with students who had not or who had not mastered the competency based on predetermined criteria. In this study, discrimination power was calculated using Excel version 22.

Table 4 Distinguishing Power Test

Question	Distinguishing Information	
Number	Power	Information
1	0.248	ENOUGH
2	0.510	GOOD
3	0.238	ENOUGH
4	0.524	GOOD
5	0.290	ENOUGH
6	0.310	ENOUGH
7	0.367	ENOUGH
8	0.376	ENOUGH
9	0.305	ENOUGH
10	0.386	ENOUGH
11	0.448	GOOD
12	0.510	GOOD
13	0.448	GOOD
14	0.590	GOOD
15	0.443	GOOD
16	0.376	ENOUGH
17	0.300	ENOUGH
18	0.514	GOOD
19	0.238	ENOUGH
20	0.514	GOOD
21	0.105	BAD
22	0.114	BAD
23	0.048	BAD
24	0.114	BAD
25	0.114	BAD
	Results	GOOD:9
		ENOUGH: 11
		UGLY: 5

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(Source: Excel version 2022)

The table above shows that the test for student abilities has a differentiating power for questions. Of the 25 questions, the differentiating power is 9 questions in the good category, 11 questions in the sufficient category, and 5 questions in the bad category.

Data Normality Test

After conducting the pretest and posttest at Teladann Private Middle School in Pematangsiantar, the next step was to conduct a normality test to determine whether the collected data were normally distributed. In this study, the normality test was conducted using the Kolmogorov-Smirnov test using Excel version 2022. The following are the results of the normality test conducted by researchers using Excel version 2022.

Table 5 Results of Data Normality Test

CLASS	X	DMax	α	Results
Experiment Pretest	29	0, 108	0.05	Normal
Experiment Posttest	29	0, 110	0.05	Normal
Pretest Control	29	0.104	0.05	Normal
Posttest Control	29	0, 172	0.05	Normal

(Source: Excel version 2022)

Based on the table data, the significance value (Sig.) of the Kolmogorov-Smirnov test for all groups is above the significance level of 0.05. The Dmax value for the Pre-Test of the experimental class is 0.108 > 0.05, Post-Test of the experimental class is 0.110 > 0.05, Pre-Test of the control class is 0.104> 0.05, and Post-Test of the control class is 0.172 > 0.05. Since all values are greater than 0.05, it can be concluded that the Pre-Test and Post-Test data in the control class and the experimental class are normally distributed according to the results of the Kolmogorov-Smirnov test.

Homogeneity Test

After the normality test is performed, the next step is to conduct a homogeneity test. This test is conducted to determine whether two or more groups of sample data come from populations with the same variance. In this homogeneity test, Excel version 2022 was used with the following results:

Table 6 Results of Homogeneity Test Homogeneity test of distribution of experimental and control pretest data

Taraf signifikans	α =0,05 =5%
varian 1	210.9950739
Varian2	134.9753695
Fhitung	1.563211679
Ftabel	1.882079434
Hasil	homogen

(Source: Excel version 2022)

Test of homogeneity of distribution of experimental and control post-test data

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Taraf signifikansi			
$\alpha = 0.05 = 5$	%		
varian 1	98.87684729		
Varian2	rian2 93.83251232		
Fhitung	1.053758925		
Ftabel	1.882079434		
Hasil	homogen		

(Source: Excel version 2022)

Based on the results of data calculations using Excel version 2022, it can be seen that the data distribution is homogeneous. From the results of the calculation of homogeneity in the distribution of pretest data in the experimental and control classes, it was obtained that the data was distributed homogeneously, because the Fcount value < Ftable (1.563 < 1.882), as well as the calculation of homogeneity in the distribution of posttest data in the experimental and control classes, it was obtained that the data was distributed homogeneously, because the Fcount value < Ftable (0.053 < 1.882).

Hypothesis Testing

Hypothesis testing is performed after the data is normally distributed and homogeneous. This test uses a one-sample test. The results of the hypothesis test can be seen in Table 4.8. The testing criteria for the hypothesis test are as follows:

- If thitung < t tabel, then Ho is accepted and Ha is rejected. 1)
- 2) If thitung > t tabel, then Ho is rejected and Ha is accepted.

Table 7 Hypothesis Test Results

Hypothesis test of distribution of pretest experimental and control data

	pre-test 7a	pre-test 7b	
average	46.06896552	37.24137931	
n	29	29	
variants	210.9950739	134.9753695	
t-test	8.827586207	11.93001529	df=n1+n2 -2
t-count	2.55576823	3.453985421	df= 29+29-2
t-table	1,672		df=58-2
			df 56
information	Ha accepted	_	

(Source: Excel version 2022)

Hypothesis test of distribution of experimental and control post-test data

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	postest 7a	postest 7b	
rata-rata	77.65517241	73.24137931	
n	29	29	
varian	98.87684729	93.83251232	
uji t	4.413793103	6.645150331	df=n1+n2 -2
t-hitung	1.712220004	2.57781891	df= 29+29-2
t-tabel	1.672		df=58-2
			df 56
keterangan	Ha diterima		

(Source: Excel version 2022)

Based on the table, the degree of freedom (df) of this study is 56, with a significance value of 0.05, then the significance of the t-table value is 1.672. Meanwhile, the t-count value obtained from the pretest data distribution hypothesis test is 2.555 and the t-count value obtained from the posttest data distribution hypothesis test is 1.712. If compared t-count > t-table, it can be concluded that Ha is accepted and Ho is rejected, which means there is an influence of the Spinning Wheel learning media on student learning outcomes.

N-GAIN TEST

Gain is the difference between the pretest and posttest scores. Gain reflects a student's improvement in ability or mastery of concepts after learning. The interpretation of the N-gain value is as follows:

- 1. $0.70 \le g \le 1.0$ High category
- 2. $0.30 \le g \le 0.70$ Medium category
- 3. $0.0 \le g \le 0.30$ Low category
- 4. g=0.0 Fixed category

Table & N.-Gain Test Results

	Table 8 N-Ga	1111		
no.	N-Gain score		no.	N-Gain score
1	0.737		1	0.571
2	0.500		2	0.647
3	0.500		3	0.619
4	0.643		4	0.231
5	0.737		5	0.714
6	0.737		6	0.762
7	0.167		7	0.625
8	0.643		8	0.583
9	0.692		9	0.313
10	0.556		10	0.214
11	0.833		11	0.778
12	0.643		12	0.583
13	0.231		13	0.471
14	0.684		14	0.833
15	0.545		15	0.706
16	0.375		16	0.571

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17	0.500	17	0.647
18	0.692	18	0.429
19	0.875	19	0.250
20	0.375	20	0.231
21	0.667	21	0.625
22	0.300	22	0.800
23	0.357	23	0.643
24	0.800	24	0.647
25	0.800	25	0.692
26	0.273	26	0.733
27	0.471	27	0.250
28	0.769	28	0.167
29	0.333	29	0.706
Average	0, 566	Average	0, 553
max	0.875	max	0, 833
min	0.167	min	0, 167

(Source: Excel version 2022)

The average n-gain obtained was 0.553 in the control class with the conventional model, which is included in the medium category, and 0.566 in the experimental class with the Spinning Wheel media, which is included in the medium category.

Coefficient of Determination Test

According to Ghozali (2018), the coefficient of determination (R2) test is used to measure the model's ability to explain the dependent variable. A small R2 value means that the independent variables' ability to explain the variable is very limited because R2 has a weakness, namely there is a bias towards the number of independent variables included in the model. The coefficient of determination R2 is used to determine how much the independent variable influences the dependent variable.

Interpretation of R2:

- 1. If it is close to 1, then X greatly influences Y.
- 2. If it is close to 0, then the influence is small.

Table 9 Results of the Determination Coefficient Test

73,08783026		
0,005499619		
Y	73,09332987	
r	0,07821133	
R^2	0,006117012	100
R^2	0,611701213	

(Source: Excel version 2022)

RESEARCH DISCUSSION

This research was conducted at SMP Swasta Teladan Pematangsiantar. This study aims to determine the Effect of Spinning Wheel Learning Media on Learning Outcomes in Social Sciences Subjects for Grade VII of SMP Swasta Teladan Pematangsiantar. The material taught in this study is

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material on the role of society in the economic chain, demand and supply, as well as social status and roles, differentiation, and social stratification. The sample used consisted of 2 classes, namely the control class and the experimental class. The class used for the experimental class was class VII A and the control class was class VII B. Several factors contribute to the success of any teaching and learning process. One such factor is the use of appropriate learning media. Media is anything used to convey messages or information from teachers to students, thereby helping them better understand the material.

Furthermore, in the control class, the caramah method was carried out without the aid of media during the teaching and learning process, while in the experimental class, the lecture method was carried out with the aid of Spinning Wheel learning media during the teaching and learning process. Before being given the learning media treatment, students were first given an initial test in the form of a pre-test, but previously the questions had been tested on class VII C students. The pre-test given to the sample consisted of 25 multiple-choice questions, after being given the pre-test, two different learning methods were given, the lecture method without the aid of media for the control class and the lecture method with the aid of Spinning Wheel learning media for the experimental class. After being given the learning media treatment, the next step was to give students a final test in the form of a post-test consisting of 25 multiple-choice questions. After getting the students' social studies learning results, the scores were then tested with a normality test to see whether the questions were normally distributed or not.

Based on the results of the Normality test, the significance value of the pretest of the experimental class was 0.108 and the posttest of the experimental class was 0.110, and the pretest of the control class was 0.104 and the posttest of the control class was 0.172. In the Kolmogorov Smirnov column >0.05, it can be concluded that the data is normally distributed. In the Homogeneity test, the pretest results from the control and experimental classes were 1.563 and the homogeneity test results from the posttest results from the control and experimental classes were 0.053, meaning that the data is homogeneous because it is <from Ftable of 1.882 at a significance level of 0.05. In the hypothesis test, the pretest value of the</p> experimental and control classes, the t-count obtained was 2.555 and for the hypothesis test, the posttest value of the experimental and control classes, the t-count was 1.712 with a t-table value of 1.672. If compared to t-count > t-table, it can be concluded that Ha is accepted and Ho is rejected, which means there is an influence of Spinning Wheel learning media on student learning outcomes. The results of the n-gain test of 0.553 in the control class with the conventional model are included in the moderate category and 0.566 in the experimental class with Spinning Wheel media are included in the moderate category. With the Determination Coefficient test, it is known that the determination coefficient value or R square is 0.611, which means that it is close to the value of 1, so the Spinning Wheel Learning Media greatly influences learning outcomes. Thus, the Spinning Wheel learning media is effective in improving student learning outcomes in social studies subjects.

CONCLUSION

Based on the results of the learning activities that have been carried out and based on the analysis of research data, it can be concluded that the Spinning Wheel learning media has an effect on student learning outcomes, because during learning there are elements of games and group work between students, so that it can foster a sense of competition between students and learning in the classroom can be more interesting. The results of the study showed that there was a significant difference between the learning outcomes of students taught using Spinning Wheel learning media and students taught without the aid of learning media, it was known that the significance value in the pretest of the experimental class was 0.108 and the posttest of the experimental class was 0.110 and the pretest of the control class was 0.104 and the posttest of the control class was 0.172. In the Kolmogorov Smirnov column >0.05, it can be concluded that the data is normally distributed.

In the hypothesis test, the pretest value of the experimental and control classes, the t-count obtained was 2.555 and for the hypothesis test, the posttest value of the experimental and control classes, the t-count was 1.712 with a t-table value of 1.672. If compared, t-count > t-table, it can be concluded

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that Ha is accepted and Ho is rejected, which means that there is an influence of the Spinning Wheel learning media on student learning outcomes. The results of the n-gain test of 0.553 in the control class with the conventional model are included in the medium category and 0.566 in the experimental class with the Spinning Wheel media are included in the medium category.

With the Determination Coefficient test, it is known that the value of the determination coefficient or R square is 0.611, which means that it is close to the value of 1 (one), so the Spinning Wheel Learning Media greatly influences learning outcomes. Thus, the Spinning Wheel learning media effectively improves student learning outcomes in Social Studies. This means that the use of conventional models without media assistance is successful but still less effective in increasing student activity. This means there is a significant difference between the improvement in learning outcomes of students in classes using the Spinning Wheel learning media and those learning without media assistance. Therefore, it can be concluded that the application of the Spinning Wheel media can improve student learning outcomes in Social Studies (IPS).

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