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Implementation of explicit instruction model assisted by teaching aids on student interest, activeness and learning outcomes in grade viii mathematics learning

Ifatul Jannah[1*], Isnawati Lujeng Lestari[1]

[1]Mathematics Education Study Program, Universitas Nahdlatul Ulama Pasuruan, East Java, Indonesia

Abstract

Low student interest and activity, which has an impact on suboptimal mathematics learning outcomes, is a major challenge that necessitates the innovation of more structured and concrete learning strategies. This study aims to describe the effect of applying the explicit instruction model assisted by props on student interest, activeness and learning outcomes in learning mathematics. The method used in this study is a quantitative approach with a correlational descriptive research design to describe and test the correlation between the research variables. The population of this study was all eighth-grade students at SMP Negeri 2 Pasuruan, with a sample of 32 eighth-grade students from class E selected using purposive sampling. The instruments used were learning devices (modules and teaching aids) and data collection instruments (tests, questionnaires, and student activity observation sheets). The results showed that the implementation of the explicit instruction model assisted by teaching aids had an effect on students' interest in learning, student activity, and student learning outcomes in mathematics learning. These findings were evidenced by the very strong correlation coefficients and t-values for the three variables, which consistently exceeded the t-table at a significance level of 5%. These findings confirm that the use of explicit instruction models aided by teaching aids can be a practical solution for educators to create more meaningful mathematics learning that is oriented towards student assistance.

Keywords: Explicit Instruction, Teaching Aids, Student Learning Interest, Student Activeness, Student Learning Outcomes

Education is the main foundation for human development as a whole. In the context of dynamic modern life, education is not only a means to transfer knowledge, but also a process of forming individuals holistically covering cognitive, affective and psychomotor aspects. This process provides space for learners to explore their potential and actively contribute in creating works and overcoming the challenges of the times.

The teaching and learning process is a dynamic interactive environment between teachers as facilitators and students as learners to achieve learning objectives. The success of mathematics learning is highly dependent on the quality of dynamic interaction between teachers and students (Isrok'atun & Rosmala, 2018). As a discipline that is the foundation for various other fields or 'the queen and servant of science' (Kamarullah, 2017), mathematics requires active involvement so that its concepts can be understood in depth. However, the crucial role of mathematics is often not in line with the reality in the classroom, where interactions tend to be one-way. The lack of stimulation in the teaching and learning process is the root cause of low student interest and activity, so that the potential of mathematics as a support for logic and daily life (Anggraini, 2022) is not optimally conveyed.

Learning mathematics is often perceived as material that lacks interest and tends to cause boredom for some people, even some students consider math to be a scary thing, thus making student

* Corresponding author:
Email Address: ifatuljannah81@gmail.com

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participation or activeness in the learning process tend to be low and which ultimately has consequences for the achievement of student learning outcomes that have not reached their maximum potential (Pramesti, 2020). Interest in learning is the desire or willingness of an individual towards something certain that develops through a process of change (Trygu, 2021). Students' activeness in the learning process includes physical and non-physical activities carried out during the learning process to create an optimal learning environment (Hayati, 2022). Learning outcomes refer to individual achievements after completing various subjects, as evidenced by scores or grades from tests conducted (Sinar, 2018).

However, this problem can be overcome through systematic efforts to foster and increase students' interest in mathematics. Of course, this cannot happen instantly, but requires a process that starts from the selection of relevant and effective learning methods, models and strategies, as well as adjustments to students' developmental stages.

Students who already perceive mathematics to be a difficult subject tend to have negative impressions and experiences of the subject, which often have a negative impact on their motivation to learn and academic adjustment at school (Pramesti, 2020). Therefore, establishing and maintaining positive attitudes towards mathematics from an early age can support students' success in learning the subject. Educators need to find ways for students to enjoy and feel good about learning math without pressure. One approach is to implement interesting models, methods and teaching aids that can develop students' creativity and stimulate their brain performance. The Oxford advance leaner's dictionary curriculum (in Suherman, 2023) states that implementation is to implement something intolerable (the application of something that has consequences).

One approach that is considered highly relevant for addressing the complexity of mathematics material at the secondary school level is the Explicit Instruction model. This model was chosen based on the characteristics of eighth-grade mathematics, which begins to explore procedural and abstract concepts, such as algebra, functions, and geometry, which require a rigid understanding. Through an emphasis on structured explanations, concrete examples, and guided exercises, this model is able to minimize the cognitive load on students when dealing with complex formulas. In line with Panai's view (in Krisno, 2016), the Explicit Instruction learning model is a structured and systematic learning approach that integrates various teaching methods such as focused lectures, visual demonstrations or hands-on practice, skill training sessions, and collaborative activities in groups.

The use of relevant and contextual teaching aids in the context of mathematics learning also has significant potential in facilitating a very deep and comprehensive understanding of mathematical concepts for students. Teaching aids are learning tools in the form of real objects that are used to make learning materials easier to understand (Yaumi, 2021). Teaching aids have the ability to visualize mathematical concepts that are often abstract, thus making them more concrete and easier for students to learn. The teaching aid used in this study was a PLSV (Single Variable Linear Equation) board.

A study conducted by Hasanuddin Reza Sukandi, Yayu Nurhayati Rahayu, Neng Risya Safitri, and Irfan Ahmad Zain in 2024 entitled "The Use of Teaching Aids in Increasing Students' Interest in Learning Mathematics" shows that the use of teaching aids has a significant positive impact on students' interest in learning mathematics. However, there is a fundamental difference between previous studies and this study; previous studies did not apply the Explicit Instruction learning model and only focused on exploring learning interests. Meanwhile, this study aims to fill this gap by integrating the Explicit Instruction model with teaching aids to test its comprehensive effect on three aspects simultaneously, namely students' interest, activity, and learning outcomes.

Yesi Puspitasari, Irma Noervadila, and Siti Fatimah (2020) in their study titled "The Effect of Using

Linear Equation Board Manipulatives (PLSV) on Students' Learning Outcomes in the Topic of Linear Equation Systems at SMPN 2 Panji in the 2019/2020 Academic Year" shows that the PLSV board teaching aid has a positive effect on students' learning outcomes, with a higher average post-test score in the experimental class using the teaching aid (82.5625) compared to the control class (78.25), and statistical tests indicate a significant effect. Although relevant in terms of media use, there is a fundamental difference with this study; previous studies have not applied the Explicit Instruction learning model and are limited to testing cognitive learning outcomes only. In contrast, this study aims to fill that gap by integrating the PLSV board-assisted Explicit Instruction model to test its impact more comprehensively, not only on learning outcomes but also on student interest and activity in the classroom.

Fisa Wisnu Wijaya, Ashari Ashari & Nur Ngazizah (2020) with the research title "The Effectiveness of the Explicit Instruction Learning Model Assisted by Teaching Aids to Improve Students' Scientific Attitudes and Learning Outcomes". This evaluative descriptive study involved 32 students from class X-2 at SMA Negeri 3 Purworejo. Data was collected through observation, written tests, and questionnaires. The analysis results showed a significant increase in cognitive learning outcomes (average 38.25%) and affective learning outcomes (average 39.30%). Additionally, the students' learning achievement rate reached 87.50%, and there was a 13.43% increase in scientific attitudes. Thus, this study concludes that the explicit instruction model assisted by visual aids is quite effective in improving students' learning outcomes. Although there are similarities in the use of learning models, there are fundamental differences in the focus and objectives of the research. The previous study aimed to determine the effectiveness of the Explicit Instruction model specifically in improving students' scientific attitudes and learning outcomes. In contrast, this study aims to describe the model's influence more comprehensively on students' interest, activity, and learning outcomes. Thus, this study fills a gap in the literature by examining the relationship between internal motivation and active student participation in the context of explicit instruction.

A study by Hasni Hendrawati (2021) entitled "A Study of the Explicit Instruction Model in Junior High School/MTs Mathematics Learning" examines the concept and potential of Explicit Instruction for effective mathematics learning. The study concludes that this model theoretically has the potential to improve the quality of learning, including academic outcomes, communication skills, and conceptual understanding among students. Therefore, it is recommended that future research directly apply this model in mathematics instruction for junior high school/MTs students. Although it provides a strong theoretical foundation, there are fundamental differences between this study and Hendrawati's study. While Hendrawati's study is a literature review (library research) that focuses on deepening concepts, this study is a field study that directly applies the model to test its effects empirically. In addition, this study has a more specific focus in describing the impact of integrating the model on student interest, activity, and learning outcomes through the use of concrete teaching aids. Thus, this study serves as a practical implementation to validate the potential of the Explicit Instruction model, which has previously been recommended theoretically.

Based on this background, this study aims to describe the effect of implementing the Explicit Instruction model assisted by teaching aids on student interest in learning, student activeness, and student learning outcomes in eighth-grade mathematics learning.

METHODS

This study uses a quantitative approach with a correlational descriptive research design. Quantitative research is empirical research that analyzes numerical data through statistical methods to identify the relationship between the phenomena under study (Arikunto, 2014). Descriptive research seeks to describe and interpret the actual condition of the object of research based on empirical facts. Correlational research is a non-experimental design that aims to identify the strength of statistical relationships between two or more variables through natural data measurement, while minimizing control over confounding variables and researcher intervention (Marlina, 2021).

According to Hartono (2011), population is the whole subject or object of research with specific criteria whose results can be generalized. In this study, the population was all VIII grade students of SMP Negeri 2 Pasuruan in the 2024/2025 academic year, totaling 230 students spread across seven classes (VIII-A to VIII-G). The sample is a small part of the population chosen to represent the characteristics of the population (Sukardi, 2007). Given the size of the population, this study used a non-probability sampling technique of purposive sampling. Based on observation and advice from the mathematics teacher, the research sample was class VIII-E of SMP Negeri 2 Pasuruan, which consisted of 32 students. This class was chosen due to certain considerations and will be the main focus of data collection and analysis.

The instruments used in this study include learning instruments and data collection instruments. Learning instruments consisted of teaching modules and teaching aids. While the data collection instruments consisted of student response questionnaires, student learning interest questionnaires, student activity observation sheets and tests.

The data analysis techniques used in this study include: 1) Quantitative descriptive analysis
To calculate the percentage of the score obtained by each student or individual achievement relative to the maximum score, the formula will be used:

$$\text{Percentage} = \frac{\text{score obtained}}{\text{maximum score}} \times 100 \tag{1}$$

The percentage score obtained for each student will then be categorized based on the relevant criteria for each aspect as in the table below.

Table 1. Category of Student Response

Interval	Category
81% - 100%	Very Positive
61% - 80%	Positive
41% - 60%	Fair
21% - 40%	Negative
0% - 20%	Very Negative

Source: Riduwan, 2007

Table 2. Category of Student Learning Interest

Interval	Category
81 – 100	Very High
61 – 80	High
41 – 60	Fair
21 – 40	Low
0 – 20	Very Low

Source: Arikunto, 2014

Table 3. Category of Observation

Interval	Category
80,00 - 100	Very Good
60,00 - 79,99	Good
40,00 - 59,99	Fairly Good
20,00 - 39,99	Not Good
0 - 19,99	Very Not Good

Source: Saraswati (in Hartono, 2019)

Table 4. Category of Student Learning Outcomes

Learner Score	Category of Assessment
80-100	Very Good
66-79	Good
60-65	Fairly Good
31-59	Not Good
0-30	Very Not Good

Source: Arikunto, 2014

To calculate the percentage of frequency or proportion of a particular category, use the percentage formula proposed by Sudjono (2000) as follows

$$P = \frac{f \times 100\%}{n} \quad (2)$$

Description:
P = Percentage
f = Number of frequencies
n = Number of Respondents

Normality test, aims to determine whether the data is normally distributed, as a t-test prerequisite. The test was conducted using SPSS Version 26 with the Shapiro-Wilk Test. The decision criteria are:

- If the Sig. < 0.05, then H_0 is rejected, meaning the data is not normally distributed.
- If the Sig Value. > 0.05, then H_0 is accepted, meaning the data is normally distributed.

Analysis of correlation data, used to measure the degree of closeness of the linear relationship between variables. Product moment correlation analysis was used with the Hadi formula (1979).

$$r_{xy} = \frac{\Sigma xy - \frac{(\Sigma x)(\Sigma y)}{n}}{\sqrt{\left\{\Sigma x^2 - \frac{(\Sigma x)^2}{n}\right\}\left\{\Sigma y^2 - \frac{(\Sigma y)^2}{n}\right\}}} \quad (3)$$

Description:
r_{xy} = correlation coefficient of variable X and variable Y.
n = Number of subjects (students as samples)
x = Variable X (learning model *explicit instruction* model assisted by props)
y = Variable Y (student interest, student activeness and student learning outcomes)

The correlation coefficient (r_{xy}) is interpreted based on Sugiyono's guidelines (2021).

Table 5. Interpretation of r Value

Magnitude of *r*	Interpretation
0,00 – 0,199	Very Low
0,20 – 0,399	Low
0,40 – 0,599	Medium
0,60 – 0,799	Strong
0,80 – 0,1000	Very Strong

The significance of the relationship is determined by comparing r-count with r-table:

- If r-count > r-table, H_1 is accepted (there is a significant relationship).
- If r-count < r-table, H_0 is accepted (no significant relationship).

Hypothesis Test (t-test), carried out to determine whether there is a significant effect of the implementation of the *Explicit Instruction* model aided by props on student interest in learning, activeness, and learning outcomes. The t-test formula was used (Sugiyono, 2021),

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \quad (4)$$

and the results are compared with the t-table at the 5% significance level:

- If t-count > t-table, H_1 is accepted (there is a significant effect).
- If t-count < t-table, H_0 is accepted (no significant effect).

RESULTS AND DISCUSSION

Quantitative Descriptive Analysis

Table 6. Categorization of Student Response Questionnaire Results

Alternative Answers	Frequency (f)	Percentage (%)
Very Positive (81 - 100)	21	65,625
Positive (61 - 80)	11	34,375
Fair (41 - 60)	0	0
Negative (21 - 40)	0	0
Very Negative (0 - 20)	0	0

Based on Table 6, the majority of students (65.625%) gave a very positive response to the learning, and another 34.375% expressed a positive response. There were no students who responded moderately, negatively, or very negatively, indicating students' excellent acceptance of the learning process.

Table 7. Categorization of Student Learning Interest Questionnaire Results

Alternative Answers	Frequency (f)	Percentage (%)
Very High (81 - 100)	17	53,125
High (61 - 80)	13	40,625
Fair (41 - 60)	2	6,25
Low (21 - 40)	0	0
Very Low (0 - 20)	0	0

Based on the data in Table 7, the majority of students (53.125%) showed very high interest in learning, followed by 40.625% of students with high interest, and only 6.25% were in the moderate category. No students showed low or very low interest in learning, indicating a positive response to learning.

Table 8. Categorization of Student Activity Observation Results

Alternative Answers	Frequency (f)	Percentage (%)
Very Good (80.00 - 100)	16	50
Good (60.00 - 79.99)	14	43,75
Fairly Good (40.00 - 59.99)	2	6,25
Not Good (20.00 - 39.99)	0	0
Very Not Good (0 - 19.99)	0	0

Based on Table 8, most students showed a positive level of activity during learning: 50% classified as excellent, 43.75% as good, and only 6.25% in the fair category. No students showed low or very low activity, reflecting a high level of participation in the class.

Table 9. Categorization of Student Learning Outcomes

Alternative Answers	Frequency (f)	Percentage (%)
Very Good (80-100)	22	68,75
Good (66-79)	7	21,875
Fairly Good (60-65)	3	9,375
Not Good (31-59)	0	0
Very Not Good (0-30)	0	0

Based on the data in Table 9, the majority of students (68.75%) achieved excellent learning outcomes with scores of 80-100. A total of 21.875% obtained good scores (66-79), and 9.375% were in the sufficient category (60-65). There were no students who scored less than 60, indicating that the learning outcomes were generally very satisfactory.

Normality Test

To ensure the assumption of data normality is met before further analysis, the following is a summary of the results of the normality test that has been carried out:

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Data_Respon_Siswa	,135	32	,144	,935	32	,055
Data_Minat_Belajar_Siswa	,133	32	,159	,947	32	,120
Data_Observasi_Aktivitas_Siswa	,147	32	,076	,923	32	,026
Data_Hasil_Belajar_Siswa	,133	32	,160	,935	32	,053

a. Lilliefors Significance Correction

Figure 1. Results of Normality Test

Based on the results of the Shapiro-Wilk normality test conducted, it shows that the significance values: 1) student response data: 0.055, 2) student learning interest data: 0.120, 3) student activeness data: 0.074, 4) student learning outcomes data: 0.053. The test results show that the significance value for each variable exceeds the 0.05 limit, which indicates normal data distribution.

Analysis of Correlation Data

Table 10. Analysis of Correlation Data

No	X	Y_1	Y_2	Y_3	$X \times Y_1$	$X \times Y_2$	$X \times Y_3$	X^2	Y_1^2	Y_2^2	Y_3^2
1	46	46	83	87	2116	3818	4002	2116	2116	6889	7569
2	53	52	108	90	2756	5724	4770	2809	2704	11664	8100
3	45	38	88	77	1710	3960	3465	2025	1444	7744	5929
4	58	56	118	92	3248	6844	5336	3364	3136	13924	8464
5	42	35	80	70	1470	3360	2940	1764	1225	6400	4900
6	47	45	97	82	2115	4559	3854	2209	2025	9409	6724
7	55	55	120	91	3025	6600	5005	3025	3025	14400	8281
8	57	56	115	94	3192	6555	5358	3249	3136	13225	8836
9	52	45	100	96	2340	5200	4992	2704	2025	10000	9216
10	50	47	100	93	2350	5000	4650	2500	2209	10000	8649
11	56	57	116	98	3192	6496	5488	3136	3249	13456	9604
12	44	48	108	76	2112	4752	3344	1936	2304	11664	5776
13	43	40	94	63	1720	4042	2709	1849	1600	8836	3969
14	57	58	118	99	3306	6726	5643	3249	3364	13924	9801
15	54	57	114	87	3078	6156	4698	2916	3249	12996	7569
16	49	45	95	72	2205	4655	3528	2401	2025	9025	5184
17	58	59	122	100	3422	7076	5800	3364	3481	14884	10000
18	46	49	110	81	2254	5060	3726	2116	2401	12100	6561
19	58	59	119	92	3422	6902	5336	3364	3481	14161	8464
20	37	33	67	60	1221	2479	2220	1369	1089	4489	3600
22	56	55	116	92	3080	6496	5152	3136	3025	13456	8464
23	50	50	101	79	2500	5050	3950	2500	2500	10201	6241
24	46	44	96	70	2024	4416	3220	2116	1936	9216	4900
25	50	50	101	85	2500	5050	4250	2500	2500	10201	7225
26	39	42	88	65	1638	3432	2535	1521	1764	7744	4225
27	54	51	113	87	2754	6102	4698	2916	2601	12769	7569
29	53	52	113	89	2756	5989	4717	2809	2704	12769	7921
30	48	44	99	77	2112	4752	3696	2304	1936	9801	5929
31	54	47	101	95	2538	5454	5130	2916	2209	10201	9025
32	57	58	120	100	3306	6840	5700	3249	3364	14400	10000
Σ	**1614**	**1574**	**3314**	**2720**	**80602**	**169521**	**139016**	**82504**	**79040**	**349824**	**235116**

Description:

X : Student Response

Y_1: Student Learning Interest

Y_2 : Student Activeness

Y_3: Student Learning Outcomes

Correlation of Student Response and Student Learning Interest

$$r_{xy} = \frac{\Sigma xy - \frac{(\Sigma x)(\Sigma y)}{n}}{\sqrt{\left\{\Sigma x^2 - \frac{(\Sigma x)^2}{n}\right\}\left\{\Sigma y^2 - \frac{(\Sigma y)^2}{n}\right\}}}$$

$$= \frac{80602 - \frac{(1614)(1574)}{32}}{\sqrt{\left\{82504 - \frac{(1614)^2}{32}\right\}\left\{79040 - \frac{(1574)^2}{32}\right\}}}$$

$$= 0{,}910 \quad (5)$$

Based on the calculation of *Product Moment* correlation on the questionnaire data of 32 students of class VIII-E SMP Negeri 2 Pasuruan, the correlation coefficient (r_{xy}) is 0.910. This value shows a very strong correlation relationship between the variables measured, because it lies in the range of 0.80-1.00.

With the number of respondents (N) of 32, the r-table value at a certain significance level is 0.3494. Since the r-count value (0.910) is greater than the r-table (0.3494), the Null Hypothesis (H_0) is rejected and the Alternative Hypothesis (H_1) is accepted. This means that there is a significant relationship between these variables.

Correlation of Student Response and Student Activeness

$$r_{xy} = \frac{\Sigma xy - \frac{(\Sigma x)(\Sigma y)}{n}}{\sqrt{\{\Sigma x^2 - \frac{(\Sigma x)^2}{n}\}\{\Sigma y^2 - \frac{(\Sigma y)^2}{n}\}}}$$

$$= \frac{169521 - \frac{(1614)(3314)}{n}}{\sqrt{\{82504 - \frac{(1614)^2}{32}\}\{349824 - \frac{(3314)^2}{32}\}}}$$

$$= 0{,}880 \quad (6)$$

Based on the calculation of *Product Moment* correlation on the questionnaire data of 32 students of class VIII-E SMP Negeri 2 Pasuruan, the correlation coefficient (r_{xy}) is 0.880. This value shows a very strong correlation relationship between the variables measured, because it lies in the range of 0.80-1.00.

With the number of respondents (N) of 32, the r-table value at a certain level of significance is 0.3494. Since the r-calculated value (0.880) is greater than the r-table (0.3494), the Null Hypothesis (H_0) is rejected and the Alternative Hypothesis (H_1) is accepted. This means that there is a significant relationship between these variables.

Correlation of Student Responses and Student Learning Outcomes:

$$r_{xy} = \frac{\Sigma xy - \frac{(\Sigma x)(\Sigma y)}{n}}{\sqrt{\{\Sigma x^2 - \frac{(\Sigma x)^2}{n}\}\{\Sigma y^2 - \frac{(\Sigma y)^2}{n}\}}}$$

$$= \frac{139016 - \frac{(1614)(2720)}{32}}{\sqrt{\left\{82504 - \frac{(1614)^2}{32}\right\}\left\{235116 - \frac{(2720)^2}{32}\right\}}}$$

$$= 0{,}881 \quad (7)$$

Based on the calculation of *Product Moment* correlation on questionnaire data of 32 students of class VIII-E SMP Negeri 2 Pasuruan, the correlation coefficient (r_{xy}) was obtained as 0.881. This value shows a very strong correlation relationship between the variables measured, because it lies in the range of 0.80-1.00.

With the number of respondents (N) of 32, the r-table value at a certain level of significance is 0.3494. Since the r-count value (0.881) is greater than the r-table (0.3494), the Null Hypothesis (H_0) is rejected and the Alternative Hypothesis (H_1) is accepted. This means that there is a significant relationship between these variables.

Hypothesis Test (t-test)

Student learning interest:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} = \frac{0{,}910\sqrt{32-2}}{\sqrt{1-0{,}910^2}}$$
$$t = 12{,}033 \quad (8)$$

Based on the t-test results at df = 30 with a significance level of 0.05, the t-count value obtained was 12.033, which was greater than the t-table value of 2.042. Because t-count>t-table, the Alternative Hypothesis (H_1) was accepted and the Null Hypothesis (H_0) was rejected. This proves that there is a significant effect between the implementation of the explicit instruction model assisted by teaching aids (variable X) and student learning interest (variable Y) in mathematics learning in grade VIII at SMP Negeri 2 Pasuruan.

Student activeness:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} = \frac{0{,}880\sqrt{32-2}}{\sqrt{1-0{,}880^2}}$$
$$t = 10{,}131 \quad (9)$$

Based on the t-test results at df = 30 with a significance level of 0.05, a t-count value of 10.131 was obtained, which is greater than the t-table value of 2.042. Because t-count > t-table, the Alternative Hypothesis (H_1) is accepted and the Null Hypothesis (H_0) is rejected. This proves that there is a significant effect between the implementation of the explicit instruction model assisted by teaching aids (variable X) and student activity (variable Y) in mathematics learning in grade VIII at SMP Negeri 2 Pasuruan.

Student learning outcomes:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} = \frac{0{,}881\sqrt{32-2}}{\sqrt{1-0{,}881^2}}$$
$$t = 10{,}181 \quad (10)$$

Based on the t-test results at df = 30 with a significance level of 0.05, the t-count value obtained was 10.181, which was greater than the t-table value of 2.042. Because t-count>t-table, the Alternative Hypothesis (H_1) was accepted and the Null Hypothesis (H_0) was rejected. This proves that there is a significant effect between the implementation of the explicit instruction model assisted by teaching aids (variable X) and student learning outcomes (variable Y) in mathematics learning in grade VIII at SMP Negeri 2 Pasuruan.

These findings confirm that the use of explicit instruction models aided by teaching aids can be a practical solution for educators to create more meaningful mathematics learning that is oriented towards student assistance. Broadly speaking, the synergy between systematic instruction and real visualization not only improves cognitive achievement but also serves as a strategic instrument for triggering student activity and interactive interest. Consistent implementation is expected to reduce the understanding gap in the classroom and encourage a transformation of pedagogical practices that are more adaptive to the needs of each individual.

CONCLUSION

Based on research conducted at SMP Negeri 2 Pasuruan, the implementation of the *explicit instruction* model assisted by teaching aids is proven to have a significant effect on student interest in learning class VIII-E. The results of the analysis showed a very strong correlation with an Rxy value of 0.910 and the results of the significance test which showed a significant effect on student interest in learning (t-count 12.033 > t-table 2.042). The alternative hypothesis (H_a) is accepted, and the null hypothesis (H_0) is rejected.

Based on the research conducted at SMP Negeri 2 Pasuruan, the implementation of *explicit instruction* model assisted by teaching aids proved to have a significant effect on the activeness of students in class VIII-E. The results of the analysis showed a very strong correlation with an Rxy value of 0.880 and the results of the significance test which showed a significant effect on student activeness (t-count 10.131 > t-table 2.042). The alternative hypothesis (H_a) is accepted, and the null hypothesis (H_0) is rejected.

Based on the research conducted at SMP Negeri 2 Pasuruan, the implementation of the *explicit instruction* model assisted by teaching aids was proven to have a significant effect on the learning outcomes of students in class VIII-E. The results of the analysis showed a very strong correlation with an Rxy value of 0.881 and the results of the significance test which showed a significant effect on student learning outcomes (t-count 10.181> t-table 2.042). The alternative hypothesis (H_a) is accepted, and the null hypothesis (H_0) is rejected.

This study has limitations because it only examines the effect of implementing an explicit instruction model aided by teaching aids on students' interest, activity, and learning outcomes. Therefore, the author suggests that future researchers examine the application of this model on a broader population scale and combine it with digital media to increase student interest, activity, and learning outcomes more significantly and sustainably.

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Declarations

Author Contribution	: Author 1: Conceptualization, Writing - Original Draft, Editing and Visualization, Formal analysis, Methodology, Writing - Review & Editing; Author 2: Supervision, Validation and Methodology
Conflict of Interest	: The authors declare no conflict of interest.
Additional Information	: No additional informationisprovided.

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