



THE INFLUENCE OF TEACHER PERCEPTIONS IN THE IMPLEMENTATION OF THE INDEPENDENT CURRICULUM WITH A DEEP LEARNING APPROACH ON MATHEMATICS LEARNING ACTIVITIES IN HIGH SCHOOL IN ACEH BESAR

PENGARUH PERSEPSI GURU DALAM PENERAPAN KURIKULUM MERDEKA DENGAN PENDEKATAN *DEEP LEARNING* TERHADAP AKTIVITAS PEMBELAJARAN MATEMATIKA DI SMA ACEH BESAR

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Abstract

This study aimed to determine mathematics teachers' perceptions of the implementation of the Merdeka Curriculum using the Deep Learning approach and to analyze its effect on mathematics learning activities in senior high schools in Aceh Besar. The study employed a quantitative approach with a correlational research design. The sample consisted of 20 mathematics teachers selected through purposive sampling. The research instruments were teacher perception and mathematics learning activity questionnaires that had been tested for validity and reliability. Data were analyzed using descriptive statistics, normality tests, linearity tests, simple linear regression, correlation coefficients, determination coefficients, and t-tests. The findings showed that teachers' perceptions were in the very good category, with a mean score of 62.90. Mathematics learning activities were in the very high category, with a mean score of 54.40. The regression analysis produced the equation $Y = -6.905 + 0.975X$. The correlation coefficient (R) of 0.976 indicated a very strong relationship, while the coefficient of determination (R^2) of 0.952 showed that 95.2% of the variance in mathematics learning activities was explained by teachers' perceptions. The t-test result showed a t-value of 18.920 with a significance level of 0.000 (<0.05). Therefore, it can be concluded that teachers' perceptions of the implementation of the Merdeka Curriculum through the Deep Learning approach have a positive and significant effect on mathematics learning activities in senior high schools in Aceh Besar.

Keywords : Teacher Perception, Merdeka Curriculum, Deep Learning, Mathematics Learning Activities.



Abstrak

Penelitian ini bertujuan untuk mengetahui persepsi guru matematika terhadap penerapan Kurikulum Merdeka dengan pendekatan Deep Learning serta menganalisis pengaruhnya terhadap aktivitas pembelajaran matematika di SMA Aceh Besar. Penelitian menggunakan pendekatan kuantitatif dengan desain korelasional. Sampel penelitian berjumlah 20 guru matematika yang dipilih menggunakan teknik purposive sampling. Instrumen penelitian berupa angket persepsi guru dan angket aktivitas pembelajaran matematika yang telah diuji validitas dan reliabilitasnya. Data dianalisis menggunakan statistik deskriptif, uji normalitas, uji linearitas, regresi linear sederhana, koefisien korelasi, koefisien determinasi, dan uji t. Hasil penelitian menunjukkan bahwa persepsi guru berada pada kategori sangat baik dengan rata-rata skor 62,90. Aktivitas pembelajaran matematika berada pada kategori sangat tinggi dengan rata-rata skor 54,40. Analisis regresi menghasilkan persamaan $Y = -6,905 + 0,975X$. Nilai koefisien korelasi (R) sebesar 0,976 menunjukkan hubungan yang sangat kuat, sedangkan koefisien determinasi (R^2) sebesar 0,952 menunjukkan bahwa 95,2% variasi aktivitas pembelajaran matematika dijelaskan oleh persepsi guru. Hasil uji t menunjukkan nilai t hitung 18,920 dengan signifikansi 0,000 ($<0,05$), sehingga dapat disimpulkan bahwa persepsi guru terhadap penerapan Kurikulum Merdeka dengan pendekatan Deep Learning berpengaruh positif dan signifikan terhadap aktivitas pembelajaran matematika di SMA Aceh Besar.

Kata Kunci : Persepsi Guru, Kurikulum Merdeka, Deep Learning, Aktivitas Pembelajaran Matematika.

1. INTRODUCTION

Mathematics education at the senior high school (SMA) level plays a strategic role in developing students' logical, critical, and systematic thinking, problem-solving, and higher-order reasoning skills. 21st-century education demands learning that integrates cognitive, affective, and psychomotor aspects in a balanced manner (Suwandi et al., 2024). In line with these demands, the implementation of the Independent Curriculum (Curriculum Merdeka) provides an opportunity to create more meaningful, flexible, and student-centered learning through the application of the Deep Learning approach. This approach emphasizes in-depth understanding, reflective thinking, problem-based learning, and the connection of material to real-life contexts (Gufron & Suryahadikusumah, 2024). However, its implementation still faces obstacles such as teachers' limited understanding of Deep Learning, inadequate learning resources, and the habit of using conventional methods oriented toward memorization (Mulyanto et al., 2025).

These problems are increasingly evident in mathematics learning, which still tends to emphasize procedures and formula memorization without developing a deep understanding of concepts. This situation is inconsistent with the principles of constructivism, which emphasize that knowledge is actively constructed through assimilation and accommodation, as well as social interaction through scaffolding. Learning that provides insufficient space for exploration, representation, and interconnectedness between concepts can lead to students having difficulty understanding mathematical concepts and reduce their motivation to learn (Cholifatunisa et al., 2025). Applying principles of educational psychology through emotional management, increasing motivation, and selecting strategies appropriate to student characteristics is also necessary to improve learning effectiveness (Rakhmawati et al., 2024).

In this context, Deep Learning is one approach that can support the shift in mathematics learning from mechanical memorization to active, reflective, contextual, and meaningful learning. Research by Mutmainnah et al. (2025) shows that the use of interactive exercises, simulations, and experiments in deep learning can increase student engagement and conceptual understanding. The success of implementing this approach is greatly influenced by the perceptions and readiness of teachers as the primary implementers of learning. Teacher perceptions include understanding, attitudes, and beliefs



about the implementation of the Independent Curriculum and the effectiveness of Deep Learning. Teachers are required to act as facilitators who design learning, guide, motivate, and encourage students to actively and reflectively construct knowledge (Sulistriani, 2021). Limited teacher understanding and training regarding Deep Learning can be a barrier to its implementation (Rifyal, 2025).

In reality, mathematics learning in high school is still largely dominated by a teacher-centered instructional approach oriented toward cognitive achievement, while the affective, metacognitive, exploration of real-world contexts, collaboration, and reflection aspects are not optimal (Nugraha & Hasanah, 2021). This situation not only makes it difficult for students to understand abstract concepts but also has the potential to reduce learning motivation. Teacher learning activities themselves include planning, selecting strategies and media, classroom management, providing guidance and motivation, and evaluation and reflection to improve the quality of learning. Optimally, these activities require teacher preparedness, mastery of the material, understanding of student characteristics, and the ability to adapt learning to school conditions and facilities (Rifyal, 2025). In the implementation of the Independent Curriculum, mathematics learning activities are directed towards an in-depth, reflective, and contextual process, with the teacher as a facilitator who encourages exploration of concepts, linking material to real experiences, critical thinking, and problem-solving (Munawar, 2022).

Based on these conditions, teachers' perceptions regarding the implementation of the Independent Curriculum with a Deep Learning approach are suspected to be related to mathematics learning activities in senior high schools in Aceh Besar. Although various studies have discussed Deep Learning, meaningful learning, and the role of teachers, quantitative empirical studies that specifically examine the influence of teachers' perceptions regarding the implementation of the Independent Curriculum with a Deep Learning approach on mathematics learning activities in senior high schools in Aceh Besar are still limited. Therefore, this study is important to conduct to obtain empirical evidence regarding the influence of teachers' perceptions regarding the implementation of the Independent Curriculum with a Deep Learning approach on mathematics learning activities in senior high schools in Aceh Besar. This study aims to determine whether or not there is an influence of teachers' perceptions regarding the implementation of the Independent Curriculum with a Deep Learning approach on mathematics learning activities in senior high schools in Aceh Besar. The results are expected to serve as a basis for policy development, improving teacher competency and training, and improving the quality of mathematics learning (Torang Siregar, 2025).

2. RESEARCH METHOD

This study used a quantitative approach with a simple correlation design to determine the influence of teacher perceptions on the implementation of the Independent Curriculum with a Deep Learning approach on mathematics learning activities. Quantitative research is used to obtain numerical data, which is then analyzed statistically to test the research hypotheses (Sugiyono, 2022). The study was conducted at seven high schools in Aceh Besar: SMAN 1 Baitussalam, SMAN 1 Lhoknga, SMAN 1 Sukamakmur, SMAN 1 Darul Imarah, SMAN 1 Peukan Bada, SMAN 1 Ingin Jaya, and SMA Swasta Abulyatama. The study was conducted from May to July 2026 and included preparation, instrument development and testing, data collection, and data processing and analysis.

The study population was all 26 mathematics teachers at the seven schools. The study locations were selected based on the suitability of the school characteristics with the research objectives, particularly the presence of mathematics teachers targeted for the study regarding their perceptions of the implementation of the Independent Curriculum with a Deep Learning approach. The sample was determined using purposive sampling, selecting respondents based on specific criteria aligned with the research objectives. The sample criteria included mathematics teachers teaching at one of the research schools, teaching at a school implementing or familiar with the Deep Learning approach, and being willing to participate. Based on these criteria, 20 teachers were selected as the research sample from a total of 26 teachers.



Data collection was conducted using a questionnaire as the primary instrument and documentation as supporting data. The questionnaire used a closed-ended form with a four-level Likert scale to measure two research variables: teachers' perceptions of the implementation of the Independent Curriculum with the Deep Learning approach (variable X) and mathematics learning activities (variable Y). The questionnaire for variable X consisted of 18 statements covering indicators of understanding of Deep Learning concepts, teacher readiness to implement learning, active student involvement, development of critical and reflective thinking skills, relevance of learning to real life, and the impact of Deep Learning on learning. The questionnaire for variable Y consisted of 15 statements covering active student participation, problem-solving skills, relevance of material to real life, internalization of character values, and student learning motivation. Both instruments included positive and negative statements. For positive statements, a score of 4 was assigned to Strongly Agree (SS), 3 to Agree (S), 2 to Disagree (TS), and 1 to Strongly Disagree (STS). For negative statements, the scoring was reversed. Documentation was used to supplement the research data, including school data, number of teachers, permits, and evidence of research implementation (Sugiyono, 2022).

The quality of the instrument was tested through validity and reliability tests using SPSS Statistics Version 26. Validity testing was conducted using the Pearson Product Moment correlation, with the criteria for items being declared valid if the significance value (Sig.) was <0.05 or the calculated r value $> r$ table. Reliability testing was conducted using the Cronbach's Alpha coefficient, with the instrument being declared reliable if the Cronbach's Alpha value ≥ 0.70 (Ghozali, 2021). Prior to hypothesis testing, descriptive statistical analysis and prerequisite tests were conducted. Descriptive statistics were used to describe data through minimum, maximum, average (mean), standard deviation, frequency, and percentage values (Sugiyono, 2022). The interpretation of the average score used four categories with intervals of 0.75. Teacher perception variables were categorized as very good (3.26–4.00), good (2.51–3.25), less good (1.76–2.50), and bad (1.00–1.75), while mathematics learning activities were categorized as very high (3.26–4.00), high (2.51–3.25), low (1.76–2.50), and very low (1.00–1.75). The descriptive results of the study showed an average teacher perception of 3.50, which is included in the very good category, and an average mathematics learning activity of 3.62, which is included in the very high category.

The prerequisite tests for the analysis included normality and linearity tests. The Shapiro-Wilk test was conducted because the sample size was less than 50 respondents. The data were declared normally distributed if the significance value was >0.05 . The linearity test was conducted using the Test for Linearity to determine whether the relationship between variables X and Y was linear. A Deviation from Linearity value >0.05 indicates a linear relationship (Ghozali, 2021).

Hypothesis testing was conducted using simple linear regression analysis with SPSS Statistics Version 26 to determine the influence of teacher perceptions on mathematics learning activities. The regression equation used was $Y=a+bX$, where Y represents mathematics learning activities, X represents teacher perceptions of the implementation of the Independent Curriculum with a Deep Learning approach, a represents a constant, and b represents the regression coefficient. The significance of the effect was tested using a t-test, with a Sig. value <0.05 indicating a significant effect. Furthermore, the coefficient of determination (R^2) is used to determine the extent of the contribution of teacher perceptions in explaining variations in mathematics learning activities, while the part of the variation not explained by the model is influenced by other factors outside the research (Ghozali, 2021).

3. RESULT AND DISCUSSION

a. Respondent Characteristics

The characteristics of the respondents are presented to provide a general overview of the profiles of the mathematics teachers who comprised the research sample. The respondents were 20 mathematics teachers from seven high schools in Aceh Besar Regency. The characteristics analyzed included gender, age, and length of teaching experience as a basis for analyzing teachers' perceptions



of the implementation of the Independent Curriculum with the Deep Learning approach and mathematics learning activities.

Table 1. Distribution of Respondents by Gender

GENDER	FREQUENCY	PERCENTAGE (%)
Man	1	5,0
Female	19	95,0
Total	20	100

Source: Research Data Processing Results, 2026

Based on Table 1, it is known that there was 1 male respondent (5.0%), while there were 19 female respondents (95.0%). These results indicate that the majority of respondents in this study were female teachers. This condition indicates that the data obtained mostly represents female teachers' perceptions of the implementation of the Independent Curriculum with a Deep Learning approach and mathematics learning activities in high schools in Aceh Besar Regency. However, all respondents were selected based on predetermined research criteria so that they could still provide information in accordance with the research objectives.

Table 2. Distribution of Respondents by Age

GENDER	FREQUENCY	PERCENTAGE (%)
< 30 tahun	1	5,0
30-39 tahun	6	30,0
40-49 tahun	10	50,0
> 50 tahun	3	15,0
Jumlah	20	100

Source: Research Data Processing Results, 2026

Based on Table 2, it is known that 1 respondent was under 30 years old (5.0%), 6 respondents were aged 30-39 years old (30.0%), 10 respondents were aged 40-49 years old (50.0%), and 3 respondents were over 50 years old (15.0%). These results indicate that the majority of respondents were in the 40-49 years age range. This condition indicates that the majority of teachers are of productive age and have sufficient experience in carrying out the learning process and implementing the Independent Curriculum.

Table 3. Length of Teaching

LENGTH OF TEACHING	FREQUENCY	PERCENTAGE (%)
< 15 years	4	20,0
15-20 years	10	50,0
> 20 years	6	30,0
Total	20	100

Source: Research Data Processing Results, 2026

Table 3 shows that 4 respondents (20.0%) had less than 15 years of teaching experience, 10 (50.0%) had 15-20 years of teaching experience, and 6 (30.0%) had more than 20 years of teaching experience. These results indicate that most respondents have 15-20 years of teaching experience. This experience is expected to support teachers' ability to assess the implementation of the Independent Curriculum with a Deep Learning approach and mathematics learning activities in schools.

b. Research Instrument Test Results

Before being used in data collection, the research instruments were first tested for validity and reliability to ensure accuracy and consistency in measuring the research variables. Validity testing was conducted using Pearson's Product Moment correlation, while reliability testing used the Cronbach's Alpha coefficient with the help of SPSS. A statement item is declared valid if the calculated r -value $\geq$ r -table. Based on the test results, an r -table value of 0.514 was obtained as the basis for determining the validity of each instrument item.

**Table 4. Results of the Validity Test of Teacher Perception Variables**

No	r-count	r-table	INFORMATION
1	0,717	0,514	Valid
2	0,563	0,514	Valid
3	0,637	0,514	Valid
4	0,834	0,514	Valid
5	-0,061	0,514	Invalid
6	0,834	0,514	Valid
7	0,627	0,514	Valid
8	0,671	0,514	Valid
9	0,424	0,514	Invalid
10	0,800	0,514	Valid
11	0,702	0,514	Valid
12	0,600	0,514	Valid
13	0,726	0,514	Valid
14	0,448	0,514	Invalid
15	0,588	0,514	Valid
16	0,461	0,514	Invalid
17	0,668	0,514	Valid
18	0,514	0,514	Valid
19	0,465	0,514	Invalid
20	-0,389	0,514	Invalid
21	0,734	0,514	Valid
22	0,611	0,514	Valid
23	0,817	0,514	Valid
24	-0,303	0,514	Invalid
25	0,800	0,514	Valid

Source: Research Data Processing Results, 2026

Based on Table 4, it is known that of the 25 items of teacher perception variable statements, there are 18 items that are declared valid and 7 items that are invalid, namely items number 5, 9, 14, 16, 19, 20, and 24. The valid items are then used as research instruments, while the invalid items are not used at the data collection stage.

Table 5. Results of the Validity Test of Learning Activity Variables

No	r-count	r-table	INFORMATION
1	0,770	0,514	Valid
2	0,632	0,514	Valid
3	0,435	0,514	Invalid
4	0,839	0,514	Valid
5	0,216	0,514	Invalid
6	0,791	0,514	Valid
7	0,632	0,514	Valid
8	0,343	0,514	Invalid
9	0,441	0,514	Invalid
10	0,881	0,514	Valid
11	0,881	0,514	Valid
12	0,626	0,514	Valid
13	0,916	0,514	Valid
14	0,448	0,514	Invalid
15	0,469	0,514	Invalid



No	r-count	r-table	INFORMATION
16	0,614	0,514	Valid
17	0,791	0,514	Valid
18	0,501	0,514	Invalid
19	0,335	0,514	Invalid
20	-0,221	0,514	Invalid
21	0,791	0,514	Valid
22	0,632	0,514	Valid
23	0,862	0,514	Valid
24	0,031	0,514	Tidak Valid
25	0,811	0,514	Valid

Source: Research Data Processing Results, 2026

Based on Table 5, it is known that of the 25 items of learning activity variable statements, there are 15 items that are declared valid and 10 items that are invalid, namely items number 3, 5, 8, 9, 14, 15, 18, 19, 20, and 24. Items that meet the valid criteria are used as research instruments, while invalid items are eliminated.

Reliability testing was conducted to determine the level of consistency of the research instrument. An instrument is considered reliable if the Cronbach's Alpha value is > 0.60 .

Table 6. Results of Instrument Reliability Test

VARIABLES	CRONBACH'S ALPHA	STANDARD	INFORMATION
Teacher Perception	0,877	0,60	Reliabel
Learning Activities	0,895	0,60	Reliabel

Source: Research Data Processing Results, 2026

Table 6 shows that the Cronbach's Alpha value for the teacher perception variable is 0.877, while the learning activity variable is 0.895. Both values are greater than the minimum threshold of 0.60, indicating that all research instruments are reliable. This indicates that the instruments have a high level of consistency and are suitable for use as data collection tools in research.

c. Descriptive Analysis of Research Variables

Descriptive analysis was conducted to provide an overview of teachers' perceptions of the implementation of the Independent Curriculum using the Deep Learning approach. Teacher perception variables were measured using a questionnaire consisting of 18 items on a four-level Likert scale. The total score for each respondent was obtained by summing the scores for all completed items.

Table 7. Descriptive Statistics of Teacher Perception Variable (X)

STATISTICS	VALUE
Number of Respondents (N)	20
Minimum Score	55
Maximum Score	70
Mean	62,90
Standard Deviation	4,78

Sumber: Hasil Pengolahan Data Penelitian, 2026

Table 7 shows that teacher perception scores ranged from 55 to 70, with an average of 62.90 and a standard deviation of 4.78. This average score indicates that teachers generally have a positive perception of the implementation of the Independent Curriculum with a Deep Learning approach. The relatively small standard deviation indicates that there is not a significant variation in respondents' answers, thus teachers' perceptions tend to be consistent.

Table 8. Distribution of Teacher Perception Variable Categories (X)

CATEGORY	FREQUENCY	PERCENTAGE (%)
Very good	14	70,0
Good	6	30,0



Amount	20	100,0
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Source: Research Data Processing Results, 2026

Table 8 shows that 14 respondents (70.0%) had a very good perception, while 6 respondents (30.0%) were in the good category. No respondents were in the poor or poor category. These results indicate that the majority of teachers have a very good perception of the implementation of the Independent Curriculum with the Deep Learning approach.

Table 9. Frequency Distribution Based on Teacher Perception Variable Indicators

No	INDICATOR	ITEM NUMBER	AVERAGE SCORE	CATEGORY
1	Understanding the concept of Deep Learning	1-4	3,47	Very good
2	Teacher readiness to implement learning	5-7	3,53	Very good
3	Student activity	8-10	3,55	Very good
4	Critical and reflective thinking	11-13	3,53	Very good
5	Relevance to real life	14-15	3,70	Very good
6	The impact of Deep Learning on learning	16-18	3,25	Very good
	Overall Average		3,50	Very good

Source: Research Data Processing Results, 2026

Table 9 shows that all indicators achieved an average score above 3.50, placing them in the very good category. The indicator with the highest average score was perception of relevance to real life (3.70), while the indicator with the lowest average score was the impact of deep learning on learning (3.25). Nevertheless, all indicators showed a very positive assessment of the implementation of the Independent Curriculum.

Table 10. Categories of Teacher Perception

AVERAGE INTERVAL	KATEGORI
3,26-4,00	Very good
2,51-3,25	Good
1,76-2,50	Poorly
1,00-1,75	Not good

Source: Research Data Processing Results, 2026

Based on the descriptive analysis, the average score for the teacher perception variable was 3.50, categorizing it as very good. This indicates that mathematics teachers have a very positive perception of the implementation of the Independent Curriculum with the Deep Learning approach. Teachers believe this approach supports more meaningful learning, enhances students' conceptual understanding, and develops critical and reflective thinking skills in mathematics learning.

The mathematics learning activity variable (Y) was measured using a questionnaire consisting of 15 statements with a four-choice Likert scale. Based on data processing results from 20 respondents, scores ranged from 45 to 60, with a mean of 54.40 and a standard deviation of 4.77. These results indicate that mathematics learning activity falls into the high category, and respondents' assessments tend to be homogeneous.

Categorically, 18 respondents (90.0%) rated mathematics learning activity as very high, and 2 respondents (10.0%) as high. No respondents rated it as medium or low. Learning activity encompasses student activeness, participation in discussions, collaborative skills, critical thinking in problem-solving, and the ability to communicate learning outcomes.

Based on the indicators, all students were in the very high category. The highest average was found in the critical thinking indicator in problem solving at 3.75, while the lowest was in student engagement at 3.50. The overall average reached 3.62, which is in the very high category. These results



indicate that mathematics learning activities are active and support the implementation of the Independent Curriculum with a Deep Learning approach.

The Shapiro-Wilk normality test showed a significance value of 0.138 for teacher perceptions and 0.077 for mathematics learning activities. Because both values were greater than 0.05, the data were declared normally distributed, thus meeting one of the assumptions of simple linear regression.

The linearity test showed an R-square value of 0.952, an F-value of 357.965, and a significance level of 0.000. Because the significance value was less than 0.05, the relationship between teacher perceptions of the implementation of the Independent Curriculum with the Deep Learning approach and mathematics learning activities was declared linear, allowing the analysis to proceed with simple linear regression.

The results of a simple linear regression yield the equation $Y = -6.905 + 0.975X$. The regression coefficient of 0.975 indicates a positive relationship, meaning a one-unit increase in teacher perception is followed by a 0.975-unit increase in mathematics learning activities. The Standardized Beta value of 0.976 also indicates a very strong relationship between the two variables.

The correlation coefficient (R) of 0.976 indicates a very strong positive relationship between teacher perceptions and mathematics learning activities. Meanwhile, the coefficient of determination (R^2) of 0.952, or 95.2%, indicates that teacher perceptions of the implementation of the Independent Curriculum with the Deep Learning approach explain 95.2% of the variation in mathematics learning activities, while the remaining 4.8% is related to factors outside the research model, such as teacher competence, learning methods and media, student motivation, and the learning environment.

The t-test results showed a calculated t-value of 18.920, greater than the t-table of 2.101, with a significance value of $0.000 < 0.05$. Thus, H_0 was rejected and H_1 was accepted. The results of the study showed a positive and significant influence of teachers' perceptions on the implementation of the Independent Curriculum with the Deep Learning approach on mathematics learning activities in high schools in Aceh Besar Regency.

DICUSSION

a. Teacher Perceptions of the Implementation of the Independent Curriculum with a Deep Learning Approach

The analysis shows that mathematics teachers' perceptions of the implementation of the Independent Curriculum with a Deep Learning approach in seven high schools in Aceh Besar Regency are in the very good category. Of the 20 respondents, 14 teachers (70.0%) were in the very good category, and 6 teachers (30.0%) were in the good category. The average perception score was 62.90, with a minimum score of 55, a maximum of 70, and a standard deviation of 4.778. These findings indicate that teachers generally have a positive perception of the implementation of Deep Learning, particularly in supporting student-centered learning, critical thinking, problem-solving, collaboration, and meaningful learning.

These findings align with perception theory, which views perception as the process of receiving, organizing, and interpreting information, thus forming attitudes toward an object. Bergdahl and Sjöberg (2025) explain that teacher perceptions are influenced by cognitive, affective, and conative aspects, which play a role in readiness to accept and implement learning innovations. These results also support Natsir (2025), who stated that Deep Learning emphasizes meaningful learning through conceptual exploration, problem-solving, collaboration, and reflection. Similarly, Gusmawan and Herman (2023) found that teachers' perceptions of the implementation of the Independent Curriculum were good and a crucial factor in successful learning. Riyadi and Nugroho (2025) demonstrated that Deep Learning can support students' conceptual understanding and critical thinking skills.

b. Mathematics Learning Activities

Mathematics learning activities were categorized as very high, with 18 respondents (90.0%) in the very high category and 2 respondents (10.0%) in the high category. The average score was 54.40, with a minimum score of 45, a maximum of 60, and a standard deviation of 4.773. These results



indicate that mathematics learning took place actively, with student involvement in discussions, collaboration, expressing opinions, and problem-solving through deeper thinking processes.

This condition reflects the characteristics of the Independent Curriculum, which places students at the center of learning and teachers as facilitators. These findings support Mas and Malik (2025), who stated that effective learning activities are characterized by active student involvement, critical thinking skills, problem-solving, and collaboration. These results also align with Syukron Wildan Rifyal (2025), who demonstrated that the implementation of Deep Learning can enhance learning activities through more interactive learning, discussions, and the connection of material to everyday life.

c. The Influence of Teacher Perceptions on Mathematics Learning Activities

The results of a simple linear regression indicate a positive and significant influence of teacher perceptions on mathematics learning activities, with the equation $Y = -6.905 + 0.975X$. The regression coefficient of 0.975 indicates that a one-unit increase in teacher perceptions is followed by a 0.975-unit increase in mathematics learning activities.

The correlation coefficient ($R = 0.976$) indicates a very strong positive relationship based on Sugiyono's (2022) guidelines. Meanwhile, the coefficient of determination ($R^2 = 0.952$) indicates that teacher perceptions explain 95.2% of the variation in mathematics learning activities, while the remaining 4.8% is related to other factors, such as teacher competence, student motivation, the learning environment, and school facilities.

The t-test results show a calculated t-value of 18.920 with a significance level of $0.000 < 0.05$, thus rejecting H_0 and accepting H_1 . Thus, teachers' perceptions of the implementation of the Independent Curriculum with a Deep Learning approach have a positive and significant impact on mathematics learning activities in high schools in Aceh Besar Regency.

This finding supports Bergdahl and Sjöberg (2025), who explained that teacher perceptions are related to knowledge, attitudes, and readiness to implement learning innovations. These results also align with Natsir (2025) regarding the role of Deep Learning in increasing student engagement through exploration, collaboration, reflection, and problem-solving. They also reinforce the findings of Gusmawan and Herman (2023), Riyadi and Nugroho (2025), and Siregar et al. (2025) regarding the importance of teacher perceptions in supporting the quality of Independent Curriculum implementation.

4. CONCLUSION

Based on the research results, it can be concluded that teachers' perceptions of the implementation of the Independent Curriculum with the Deep Learning approach are in the very good category, with 70.0% of respondents in the very good category and 30.0% in the good category. The average perception score of 62.90 indicates that teachers have a positive understanding and assessment of the implementation of this approach in mathematics learning.

Mathematics learning activities are in the very high category, with 90.0% of respondents rating it very high and 10.0% rating it high. The average score of 54.40 indicates that learning has been active, meaningful, and student-centered in accordance with the principles of the Independent Curriculum.

Teachers' perceptions of the implementation of the Independent Curriculum with the Deep Learning approach have a positive and significant impact on mathematics learning activities. This is indicated by the regression equation $Y = -6.905 + 0.975X$, the correlation coefficient $R = 0.976$ indicating a very strong relationship, and the coefficient of determination $R^2 = 0.952$, meaning that 95.2% of the variation in mathematics learning activities can be explained by teacher perceptions, while 4.8% is influenced by other factors. The t-test results also show t count = 18.920 with a significance of $0.000 < 0.05$, so the research hypothesis is accepted. Thus, the more positive the teacher's perception of the implementation of the Independent Curriculum with the Deep Learning approach, the higher the mathematics learning activities in the classroom.



5. REFERENCES

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