

The Influence of the Probing–Prompting Learning Model Assisted by Couple Card Media on Students’ Learning Outcomes

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Abstract

This study is motivated by the limited research on the integration of the Probing Prompting model with *Couple Card* media, despite the belief that dialogic approaches combined with concrete visual aids can enhance elementary students’ learning outcomes in thematic instruction. The study aims to analyze the implementation of the Probing Prompting model assisted by *Couple Card* media, describe students’ learning outcomes, and assess the model’s effect on the learning achievement of Grade III students at MIN 4 Sukoharjo. A quantitative approach with a correlational design was employed, involving 108 students selected through total sampling. Data were collected using questionnaires to evaluate the implementation of the instructional model and final assessment (PAT) scores to measure learning outcomes. Data analysis was conducted using simple linear regression. The results indicate that the implementation of the Probing Prompting model with *Couple Card* media was at a high level, while student learning outcomes were categorized as good. Statistically, there is a positive and significant effect of the model’s implementation on students’ learning outcomes in thematic subjects, with a contribution of 8.3%. These findings suggest that combining structured questioning techniques with concrete visual media can enhance students’ cognitive engagement and academic performance. The study’s implications highlight the importance of developing interactive and contextual learning

strategies at the elementary level and recommend further research to examine the model's effectiveness across different educational stages and learning contexts.

Keywords: Probing Prompting; *Couple Card*; Learning Outcomes; Thematic Learning; Elementary School

INTRODUCTION

Many international studies have highlighted the importance of learning models that emphasize active interaction between teachers and students. Salmon & Barrera (2021) assert that high-quality teacher questioning plays a crucial role in stimulating students' curiosity and higher-order thinking. In contrast, other studies report that traditional lecture-based methods tend to make students passive and are less effective in supporting conceptual understanding (Hagos, 2025). These findings align with the demands of modern pedagogy, which requires more interactive learning strategies. Therefore, innovations such as guided questioning models are expected to enhance students' engagement in the learning process.

Global trends also support the use of interactive media to improve learning outcomes. A recent meta-analysis found that game-based learning produces moderate to strong effects on cognitive performance, motivation, and student engagement (Alotaibi, 2024). Media such as Couple Card (paired question-and-answer cards) are developed to help students better grasp abstract concepts. For example, Arrayani (2023) developed Couple Cards for science material and reported a very high improvement in learning outcomes, indicated by an N-gain score of 0.80, categorized as highly effective. These findings confirm that game-based media can significantly improve conceptual understanding and student achievement.

Nationally, Indonesian students' academic performance remains a concern. PISA data and local studies show low achievement levels and uneven competency distribution. For instance, Ismawati et al. (2023) noted that many teachers have yet to implement higher-order thinking skills (HOTS) in the classroom and often express difficulties adapting to frequent curriculum changes. This suggests that traditional teaching methods still dominate,

limiting opportunities for students to develop critical thinking. These conditions correspond with Indonesia's lower performance in global and national assessments, indicating the need for improved instructional strategies.

Ismawati et al. (2023) also highlighted unequal education quality across Indonesia. Geographic and infrastructure disparities contribute to learning facility gaps between regions. As a result, students in remote areas often have limited access to quality learning media and guidance. This challenge underscores the importance of developing innovative instructional models that can be applied in diverse settings to reduce learning achievement inequality.

In response to these issues, education experts emphasize the importance of constructivist and student-centered approaches. Salmon & Barrera (2021) state that well-constructed teacher questions can form a student's zone of proximal development, fostering curiosity and critical thinking. The Probing-Prompting model adopts this principle by structuring guided questioning sequences that encourage students to actively participate in problem-solving (Utami, 2016). With its systematic structure, the model helps students not only receive information but also construct conceptual understanding independently under teacher guidance.

Furthermore, the use of interactive learning media is believed to support the learning process. Couple Card media, for example, are designed to represent difficult material in concrete form and have proven effective in facilitating student understanding (Arrayani, 2023). This concept aligns with constructivist theory, which emphasizes that concrete representations help students internalize abstract ideas. In addition, studies by Hagos (2025) and Chang et al. (2024) show that dialogic approaches (Socratic questioning) significantly enhance conceptual understanding and student participation. These findings support the belief that combining Probing-Prompting with interactive media can simultaneously improve motivation and academic performance.

Several previous studies demonstrate the effectiveness of these approaches when used independently. Utami (2016) found a significant difference in students' text abstraction skills between classes using Probing-Prompting and conventional classes. Bomantara & Zulherman (2021) also reported improved thematic learning achievement among elementary students after implementing Probing-Prompting. Meanwhile, Arrayani (2023) confirmed the effectiveness of Couple Cards, reporting high validity and practicality,

with an N-gain of 0.80 indicating very effective learning improvement. However, these studies generally used only one approach, and thus do not show how the two innovations might work together.

Empirical studies combining these model and media are still limited. No research has specifically examined the synergistic effect of the Probing-Prompting model and Couple Card media. Therefore, the effectiveness of integrating guided questioning with game-based learning media for elementary students remains unclear. This gap highlights the need for further research to determine whether combining both approaches can produce greater learning gains than using each approach separately.

The novelty of this study lies in integrating two innovative approaches simultaneously. The Probing-Prompting model focuses on cognitive stimulation through structured questioning, while Couple Card media provide concrete visual support. This media was explicitly developed “as a solution to help students understand material and improve learning outcomes.” The approach merges concrete representation with dialogic interaction: students gain understanding through hands-on engagement with paired cards while receiving guided questioning from the teacher. Therefore, this study fills a literature gap by offering a more comprehensive and interactive learning model.

Theoretically, this concept is strongly supported. Vygotsky’s Zone of Proximal Development emphasizes the role of teacher guidance through questioning to elevate student understanding (Salmon & Barrera, 2021). Additionally, cognitive learning theory states that information presented visually and verbally enhances memory processing. This approach aligns with Mayer’s dual-coding principle, although it has not been widely tested in the form of Couple Cards. With these theoretical foundations, the integration of Probing-Prompting and visual media is expected to work synergistically to improve learning outcomes. This study is designed to empirically test this hypothesis.

Based on the background above, the research focuses on the following question: Does implementing the Probing-Prompting learning model supported by Couple Card media significantly affect student learning outcomes? This quasi-experimental study will evaluate thematic learning achievement among elementary school students by comparing the performance of those taught using this combined innovative method-media approach with students taught using conventional methods.

METHODS

To determine the relationship between two variables—the Probing–Prompting model with Couple Card media as the independent variable and students’ learning outcomes as the dependent variable—this research adopted a quantitative method with a causal-correlational design. According to Creswell (2014), quantitative research is used to test theories by examining variables that can be expressed numerically and analyzing the data through statistical methods. This approach is considered appropriate for obtaining empirical evidence regarding the extent to which the implementation of innovative learning models can influence student achievement. Sugiyono (2019) emphasizes that quantitative methods are suitable for studies that seek to test causal hypotheses and generate generalizable conclusions. Therefore, this research adopted a quantitative approach so that the results could quantitatively demonstrate the influence of the Probing–Prompting model assisted by Couple Cards on the learning outcomes of third-grade students at MIN 4 Sukoharjo.

This study employed a causal-correlational research approach using a basic linear regression model. The purpose of this design was to ascertain the degree of effect and the strength of the association between students' learning results and the application of the Probing–Prompting paradigm with Couple Card medium. This design is significant because it statistically assesses the degree to which the independent variable influences the dependent variable in addition to describing the relationship between variables. Fraenkel & Wallen (2011) explain that correlational research is used when researchers aim to understand the strength and direction of relationships between variables without direct manipulation. Unlike experimental research, which involves manipulating and controlling independent variables, this study focused on examining effects as they naturally occurred in the classroom. The uniqueness of this design compared to previous research lies in its integration of two instructional elements (Probing–Prompting and Couple Card media) to simultaneously examine their combined influence on learning outcomes in a thematic learning context at a madrasah ibtidaiyah. Thus, this correlational design provides a comprehensive empirical overview of the relationship between both variables in authentic instructional settings.

The population of this study consisted of all third-grade students at MIN 4 Sukoharjo in the 2024/2025 academic year, totaling 108 students across three classes: IIIA,

IIIB, and IIIC. This population was selected because it is homogeneous, with all students having experienced thematic learning supported by the Probing–Prompting model and Couple Cards. The sampling technique used was saturated sampling (total sampling), in which the entire population was included in the study. Sugiyono (2019) states that saturated sampling is appropriate when the population size is relatively small (fewer than 120 individuals), allowing all members to be used as the sample to reduce bias and improve accuracy. Using the entire population also increases external validity, as the results reflect the actual learning conditions of all third-grade students at MIN 4 Sukoharjo. Arikunto (2019) further notes that when the number of research subjects is fewer than 100, researchers are advised to take all participants as respondents to obtain more complete and representative data.

The research instruments consisted of two components: a questionnaire and documentation of students' academic scores. The questionnaire measured the implementation level of the Probing–Prompting learning model with Couple Card support as the independent variable. It comprised 12 items rated on a five-point Likert scale (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree). Indicators covered six stages of the learning model: identifying prior knowledge, probing, prompting, Couple Card activities, discussion, and conclusion. Meanwhile, learning outcomes as the dependent variable were measured using Year-End Assessment (PAT) scores for thematic subjects from the 2024/2025 academic year obtained from school documentation. Before use, the questionnaire underwent validity and reliability testing. Content validity was tested by three experts (two classroom teachers and one academic supervisor) using Aiken's V , yielding $V \geq 0.80$ for all items, indicating high validity. Reliability testing using Cronbach's Alpha resulted in $\alpha = 0.573$, indicating acceptable reliability for elementary-level education research. Arikunto (2019) notes that reliability values above 0.5 are still acceptable in exploratory studies, reflecting adequate internal consistency.

Data collection procedures followed several systematic steps. First, the instruments were prepared and validated by experts. After obtaining official permission from the school, questionnaires were distributed to all third-grade students with assistance from classroom teachers to ensure clarity of instructions. Learning outcome data were collected from archived PAT scores. Data were compiled, entered, and processed using Microsoft Excel 2013 for initial handling, and SPSS version 25 for statistical analysis. These tools

were selected due to their efficiency and alignment with recommended quantitative research procedures, as noted by Creswell (2014).

Data analysis included both descriptive and inferential techniques. Descriptive statistics summarized variable characteristics such as mean, median, mode, standard deviation, and frequency distribution. Prior to inferential testing, assumptions of linearity and normality were checked. The ANOVA table's Deviation from Linearity value was 0.076 (> 0.05), indicating a linear relationship between variables, and the Shapiro–Wilk test confirmed normal distribution with significance values above 0.05. Once assumptions were satisfied, the effect of the Probing–Prompting model supported by Couple Cards on learning outcomes was evaluated using simple linear regression. Results revealed a positive, significant relationship with correlation coefficient $R = 0.287$, determination coefficient $R^2 = 0.083$, and $p = 0.003$ (< 0.05). Thus, the model accounts for 8.3% of variance in student outcomes, while remaining variance is attributable to other factors such as motivation, learning environment, or individual ability.

According to Sugiyono (2019), simple linear regression is appropriate for determining the effect between one independent and one dependent variable quantitatively. These findings align with Vygotsky's constructivist theory, which underscores that effective learning occurs through social interaction, guided questioning, and visual media that facilitate cognitive development. Therefore, the research method applied in this study effectively provides empirical evidence of the relationship between innovative instructional models and improved learning outcomes in thematic learning at the madrasah ibtidaiyah level.

RESULTS

Description of Questionnaire Data on the Couple Card Media-Assisted Probing Prompting Learning Model in Thematic Learning

This study used a questionnaire distributed to all 108 third-grade students. To obtain data on the Couple Card Media-Assisted Probing Prompting Learning Model in Thematic Learning, an instrument consisting of 12 questions with 5 (five) answer choices, namely strongly agree, agree, unsure, disagree, and strongly disagree, was distributed to third-grade students at MIN 4 Sukoharjo.

Based on the research data and calculations from the student questionnaires, the data were presented in a frequency distribution table. The steps to create the frequency distribution table are as follows:

1) Find the highest and lowest values based on the research data. The highest score obtained is 60, and the lowest score is 48..

2) Determine the range of values

$$\text{Range} = \text{Largest data} - \text{smallest data}$$

$$= 60 - 48 = 12$$

3) Number of Classes (K)

$$4) K = 1 + (3.33 \log n)$$

$$5) = 1 + (3.33 \log 108)$$

$$6) = 7$$

7) Class Interval Length (i)

$$8) i = \text{Range} / K$$

$$9) = 12 / 7$$

$$10) = 1,7 \text{ rounded to } 2$$

Table 1. Cumulative Frequency Distribution

Class No.	Interval Classes	Frequency	Cumulative Frequency
1	48 – 49	4	4
2	50 – 51	12	20
3	52 – 53	27	43
4	54 – 55	35	78
5	56 – 57	21	99
6	58 – 59	6	105
7	60	3	108

Based on the results of data processing in Table 1 above, the cumulative frequency distribution of 108 respondents calculated using SPSS 25 and Excel 2013 shows that the highest score is 60 and the lowest score is 48. The data was then grouped into 7 class intervals with a class width of 2. The analysis results show that the majority of respondents

were in the 54-55 interval with a frequency of 35 or about 32.4% of the total respondents. This interval is also the category with the largest proportion in the distribution.

The cumulative frequency shows that 43 respondents (39.8%) scored below the 52-53 interval, while 65 respondents (60.2%) scored above it. This indicates that most respondents had relatively high scores, as more than half of the respondents scored above 53. Furthermore, the highest score was obtained in the 56–57 interval with a cumulative frequency of 99, which means that only 9 respondents (8.3%) had scores above it. Meanwhile, the lowest score in the 48–49 interval was only obtained by 4 respondents (3.7%).

Table 2. Descriptive Statistics of Learning Method Variable Scores

		Statistic	Std. Error
Learning Methods	Mean	54.18	0.237
	5% Trimmed Mean	54.16	
	Median	54.00	
	Variance	6.072	
	Std. Deviation	2.464	
	Minimum	48	
	Maximum	60	
	Range	12	

Based on the descriptive analysis results in Table 2 above, the average (mean) score for the Learning Method was 54.18 with a standard error of 0.237. This value is relatively close to the median (54.00) and the 5% trim mean (54.16), indicating that the data tends to be symmetrical and there is no significant difference between the average and the median.

The variability of the data can be seen from the standard deviation (SD) of 2.464 and the variance of 6.07. These figures indicate that the data distribution is in the low to moderate category, which means that the respondents' scores are not too far from the average value. The minimum score obtained by respondents was 48, while the maximum score was 60, resulting in a data range of 12. This indicates that there is variation in achievement among respondents, but the range is still within reasonable limits and does not cause extreme deviations. The questionnaire data categories can be seen in Table 3 below;

Table 3. Data Categories from the Couple Media-Assisted Probing Prompting Learning Model Questionnaire

Category	Class Interval	Frequency (F)	Percentage (%)
Very High	>58	9	8,3%
High	55 – 57	51	47,2%
Currently	52 – 54	38	35,2%
Low	50 – 51	12	11,1%
Very Low	<49	4	3,7%
Total		108	100%

Table 3 can be illustrated in the histogram in Figure 1 below.

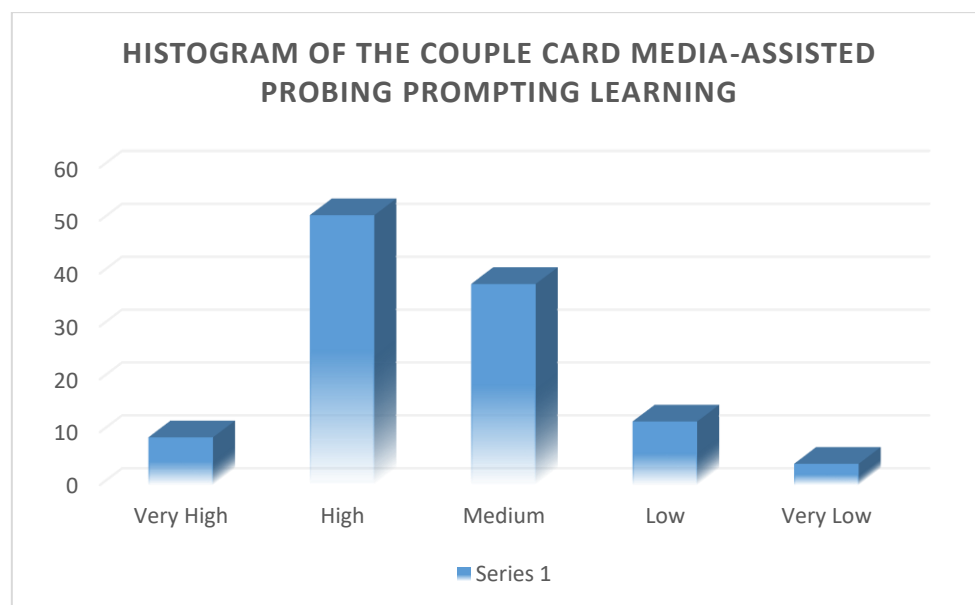


Figure 1. Histogram of the Couple Card Media-Assisted Probing Prompting Learning Model

The analysis results show that the majority of respondents were in the high category, with a total of 51 respondents (47.2%). This was followed by the medium category with 38 respondents (35.2%) and the very high category with 9 respondents (8.3%). Meanwhile, the low category consisted of only 12 respondents (11.1%) and the very low category consisted of 4 respondents (3.7%).

These findings indicate that the variable studied has a high tendency, where almost half of the respondents scored in the range of 55–57. In addition, the number of respondents in the low and very low categories was relatively small (14.8%), so it can be

concluded that most respondents showed a positive tendency towards the research variable.

Based on the research data presented, the Couple Card Media-Assisted Probing Prompting Learning Model in Grade III Thematic Learning at MIN 4 Sukoharjo is classified as high with an average of 54. This shows that utilizing this learning model and learning media can increase enthusiasm and improve student learning outcomes.

Student Learning Outcomes in Grade III Thematic Learning at MIN 4 Sukoharjo

Student achievement in thematic learning served as the benchmark for instructional success. Using End-of-Year Assessment (PAT) scores from the even semester for 108 third-grade students, the highest score was 92 and the lowest was 63; the mean was 79.46 and the standard deviation was 5.059. The SPSS 25 output for these calculations is presented in Table 4:

Table 4. Descriptive Statistics of Learning Outcomes in Thematic Learning

Learning Outcomes	Mean	79.46	0.487
	5% Trimmed Mean	79.58	
	Median	80.00	
	Variance	25.597	
	Std. Deviation	5.059	
	Minimum	63	
	Maximum	92	
	Range	29	

The results of calculations using SPSS 25 in Table 4, the variable Student Learning Outcomes in Thematic Learning, can be seen in Table 5 below.:

Table 5. Descriptive Statistics of Learning Outcomes

Category	Class Interval	Frequency (F)	Percentage (%)
Very High	>85	14	12,96%
High	79 - 84	52	48,15%
Medium	74 - 78	26	24,07%
Low	69 - 73	7	6,48%
Very Low	<69	9	8,33%
Total		108	100%

Table 5 can be illustrated in the histogram in Figure 2 below.

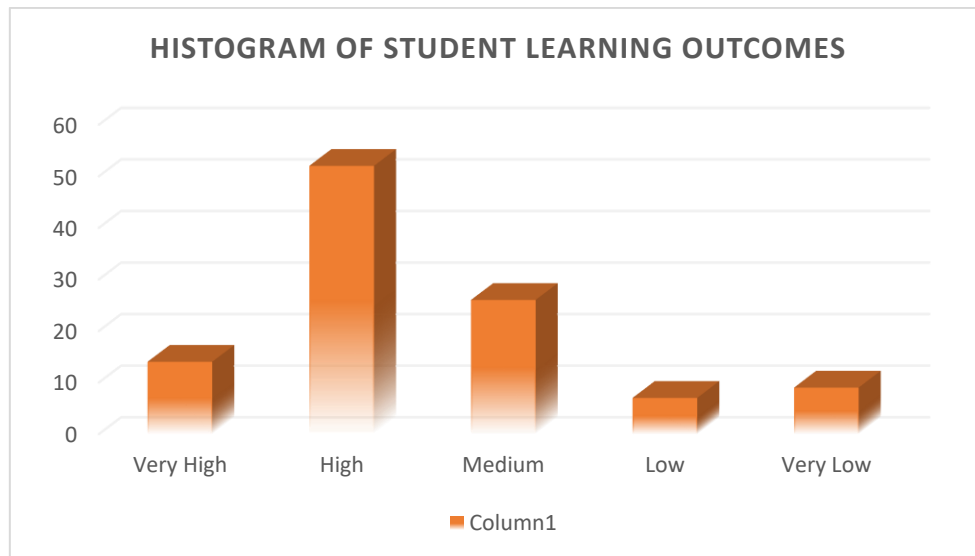


Figure 2. Histogram of Student Learning Outcomes

Descriptive statistics show an average score of 79.46 with a median of 80.00, indicating that overall student outcomes are in the good range and relatively stable since the median is close to the mean. Data dispersion is reflected by a standard deviation of 5.059 and a variance of 25.597, suggesting a fairly homogeneous score distribution. The minimum score was 63 and the maximum 92, yielding a range of 29—so while there is a notable difference between the lowest and highest achievers, it remains within reasonable bounds. When categorized into five levels (Very Low, Low, Medium, High, Very High), most students fall within the Medium to High bands, meaning the majority met expected basic competencies, although some students in Low and Very Low categories need extra support. Overall, these descriptive results indicate the applied instructional model had a positive effect, yet additional assistance is necessary to help lower-performing students reach parity.

Testing of Analysis Requirements

Normality Test

The normality test was conducted to establish whether the data follow a normal distribution. The Shapiro–Wilk test was used, with the criterion that data are considered normal when the significance value exceeds 0.05. The normality test outcomes are displayed in Table 6:

Table 6. Normality Test Results

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Learning Model	0.112	108	0.002	0.979	108	0.091
Learning Outcomes	0.098	108	0.013	0.977	108	0.056
a. Lilliefors Significance Correction						

Based on the results above, the results of the normality test using the Shapiro Wilk test can be seen by looking at the significance table (Sig.) < 0.05 , namely Variable X (Learning Method) of 0.091 and Variable Y (Learning Outcomes) of 0.056.

From the data above, it can be concluded that Variable X and Variable Y are normally distributed and can proceed to the linearity test.

Linearity Test

Linearity testing was performed to verify whether a linear relationship exists between the two variables—an assumption required for linear regression. Both variables were tested at the 0.05 significance level. Results of the linearity test are reported in Table 7:

Table 7. Linearity Test Results

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Learning Outcomes * Learning Model	Between Groups	(Combined)	647.174	12	53.931	2.449	0.008
		Linearity	226.035	1	226.035	10.266	0.002
		Deviation from Linearity	421.139	11	38.285	1.739	0.076
	Within Groups		2091.678	95	22.018		
	Total		2738.852	107			

ANOVA results show the significance for the relationship between Learning Outcomes and Learning Models in the Linearity section was 0.002 (< 0.05), indicating a significant linear relationship between the instructional model and learning outcomes. This implies that improvements in learning outcomes are directly related to the model applied. In the Deviation from Linearity section, the significance value was 0.076 (> 0.05), showing no departure from linearity; therefore the relationship is genuinely linear rather than due to another pattern. Additionally, the Between-Groups (Combined) result produced a significance value of 0.008 with an F-value of 2.449 ($p < 0.05$), indicating overall significant differences in learning outcomes associated with variations in learning models. Consequently, it can be concluded that the learning model contributes meaningfully to variations in student outcomes: choosing an appropriate model leads to more optimal learning achievements.

Hypothesis Testing

Hypothesis testing was used to determine the effect of the Couple Card Media-assisted Probing Prompting Learning Model variable on student learning outcomes in Thematic Learning. In this study, the researcher used a simple linear regression test to determine the results of the hypothesis. The basis for the simple linear regression test decision was to compare the probability value of 0.05 and find the R square value:

1. If the significance value is < 0.005 , it means that variable X affects variable Y.
2. If the significance value is > 0.05 , it means that variable X does not affect variable Y.

Table 8. Simple Linear Regression Test Results Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.287 ^a	0.083	0.074	4.869
a. Predictors: (Constant), Learning Model				

Based on Table 8 Model Summary, the correlation coefficient (R) value obtained was 0.287. This indicates that there is a weak positive relationship between the learning model and student learning outcomes. In other words, changes in the learning model correlate with changes in learning outcomes, although the relationship is not very strong.

The R Square value of 0.083 shows that the learning model contributes 8.3% to the variation in student learning outcomes, while the remaining 91.7% is influenced by factors

other than the learning model studied. This indicates that external factors such as learning motivation, learning environment, or family support also play a major role in determining student learning outcomes.

The Adjusted R Square value of 0.074 reinforces these results by adjusting the number of variables used in the model, and its value is relatively close to R Square, so the model can be considered quite stable. Meanwhile, the Standard Error of the Estimate value of 4.869 indicates the level of error in the model's prediction of student learning outcomes. The smaller this value, the better the model is at predicting the dependent variable.

Table 9. Simple Linear Regression Test Results ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	226.035	1	226.035	9.535	.003 ^b
	Residual	2512.817	106	23.706		
	Total	2738.852	107			
a. Dependent Variable: Learning Outcomes						
b. Predictors: (Constant), Learning Model						

Based on Table 9. ANOVA, the calculated F value is 9.535 with a significance level (Sig.) of 0.003. Since the significance value is less than 0.05 ($0.003 < 0.05$), it can be concluded that the regression model constructed is statistically significant. This means that the learning model has a real effect on student learning outcomes.

Table 10. Simple Linear Regression Test Coefficient

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	47.507	10.359		4.586	0.000
	Learning Model	0.590	0.191	0.287	3.088	0.003
a. Dependent Variable: Learning Outcomes						

In Table 10, the regression coefficient for the Learning Model ($b = 0.590$) is positive, meaning that each one-unit increase in model implementation corresponds to a 0.590-point increase in student learning scores. In other words, better execution of the instructional model is associated with higher student achievement. Therefore, the null hypothesis (no significant effect of the Couple Card–assisted Probing Prompting model on outcomes) is rejected and the alternative hypothesis accepted. This confirms that the Couple Card–assisted Probing Prompting approach can significantly enhance student learning outcomes.

DISCUSSION

Implementation of the Probing–Prompting Learning Model Assisted by Couple Card Media in Thematic Learning

The implementation of the Probing–Prompting model assisted by Couple Card media in the third-grade thematic learning classroom at MIN 4 Sukoharjo was conducted effectively, as indicated by students' high distribution scores (Mean = 54.18; with 47.2% falling in the “High” category). These findings demonstrate that students responded well to the structured questioning sequence that stimulated active participation and to the paired cards that visualized abstract concepts. This supports Vygotsky's assertion that effective learning occurs through social interaction and gradual scaffolding within the Zone of Proximal Development (ZPD) (Salmon & Barrera, 2021). Through guiding prompts and follow-up probing questions, students were encouraged to construct understanding through a guided-discovery process.

The learning process utilizing Couple Card media also fostered visual, kinesthetic, and collaborative engagement. Arrayani (2023) reported that Couple Cards improve focus, visual memory, and concept retention by presenting symbolic-concrete materials that support internalization in elementary learners. Pangestu et al. (2024) found that paired-card media enhanced critical-thinking skills, indicating that visual/thematic cards can strengthen concept retention and internalization. Similarly, Amini et al. (2023) found that Couple Card use increases students' visual, motor, mental, and emotional activity. Further, Alotaibi's meta-analysis (2024) confirms that game-based learning enhances motivation and academic achievement in early childhood and elementary settings by activating cognitive reward systems and reducing learning anxiety.

Positive student responses toward the Probing–Prompting model and card-based media are consistent with findings by Bomantara & Zulherman (2021) who concluded that structured questioning enhances classroom interaction, student confidence, and logical reasoning skills. Hagos (2025) similarly reported that Socratic questioning improves conceptual comprehension through deep inquiry and reflective prompts. Thus, this study reinforces evidence that combining dialogic questioning with card-based visual media supports constructivist learning in elementary education.

The success of implementation in this context is also influenced by the characteristics of madrasah ibtidaiyah classrooms, which emphasize respectful, guided, and collaborative learning environments. The Probing–Prompting model aligns with classroom culture rooted in role-modeling and humanistic teacher-student interaction, where teachers act as facilitators of students’ spiritual and academic reasoning (Ismawati et al., 2023). Therefore, the effectiveness of the model stems not only from its pedagogical strengths but also from its compatibility with the religious-based elementary school environment that values respectful educational dialogue and two-way communication.

Students’ Learning Outcomes in Thematic Subjects

Students’ learning outcomes demonstrated strong performance, with an average score of 79.46 and more than 61% categorized as “High” or “Very High.” The relatively even distribution of scores indicates that thematic learning effectively achieved third-grade curriculum goals. These data suggest that students were able to comprehend integrative thematic material requiring interconnected concepts, basic literacy skills, and logical-deductive reasoning. This finding aligns with Bruner’s constructive learning theory, which asserts that elementary-aged students can build knowledge through meaningful experiences and inquiry-based stimulus.

This is consistent with findings from Gordon et al. (2022), who reported that active cognitive learning models positively affect literacy and foundational academic skills in elementary learners. Local studies by Rawanti et al. (2023) and Astuti & Chandra (2023) further show that concrete interactive media enhance emotional engagement and result in better learning outcomes. Challenging yet enjoyable activities motivate students to complete academic tasks and reach higher cognitive levels.

These results show that structured activity-based thematic learning—such as think-pair-match using Couple Cards and scaffolding questions—trains higher-order thinking skills (HOTS). This aligns with the Merdeka Curriculum’s emphasis on literacy, numeracy,

and socio-emotional competencies through collaborative and exploratory learning. Additionally, this approach allows teachers to identify learning difficulties early through students' responses to step-guided questions, enabling adaptive teaching interventions.

Overall, the strong achievement levels among third-grade students at MIN 4 Sukoharjo indicate their readiness for active learning models and concrete media use. However, approximately 14.8% of students scored in the low and very low categories, requiring remedial and enrichment measures to ensure equitable learning outcomes. This aligns with OECD (2020) findings emphasizing the importance of differentiated instruction in improving educational equity.

Effect of the Probing–Prompting Model Assisted by Couple Cards on Learning Outcomes

Regression analysis indicates that the implementation of the Probing–Prompting model assisted by Couple Cards had a positive and significant effect on student learning outcomes ($R = 0.287$; $\text{Sig} = 0.003$; $R^2 = 0.083$). Although the contribution of 8.3% is moderate, the statistical significance demonstrates that this model is effective as a teaching strategy. This supports the idea that dialogic questioning and visual card-based media enhance comprehension, focus, and student confidence when answering conceptual questions. The results align with Paivio and Mayer's Dual-Coding Theory (2020), which asserts that dual visual-verbal representation enhances memory retention and conceptual understanding.

These findings are consistent with Bomantara & Zulherman (2021), who reported improved thematic performance through reflective and dialogic thinking facilitated by the Probing–Prompting model. They also align with research by F. W. Rahmawati et al. (2024) which found that thematic card media improved student focus and oral response quality, as well as Benu & Nahak (2022), whose development of IPS card-match media increased student activity, participation, and attention. Data from this study likewise indicate that integrating the two methods strengthens active recall, consistent with studies by Kranz et al. (2024), Ye et al. (2020), and Zhao et al. (2023), which found that retrieval practice and visual media improve memory endurance and comprehension.

However, the relatively low R^2 value suggests that other factors play a larger role in student achievement, including learning motivation, parental support, school environment, teacher characteristics, and assessment models. Studies by Schwerter et al. (2024), Ma & Ooi (2024), and Kocak et al. (2021) affirm that psychological and social factors significantly

influence student performance. Thus, the Probing–Prompting and Couple Card approach should be complemented with motivational strategies and socio-emotional support to achieve optimal results.

In conclusion, this study provides theoretical and practical contributions by demonstrating that structured questioning and concrete visual media effectively support thematic learning comprehension. However, supplementary strategies are needed to maximize outcomes. These results reinforce the importance of multi-strategic, adaptive, student-centered instruction within the framework of the Merdeka Curriculum.

Research Implications

The results of this study demonstrate that the implementation of the Probing–Prompting learning model assisted by Couple Card media has a positive impact on students' learning outcomes. These findings reinforce the importance of structured questioning strategies and the use of concrete media in supporting conceptual understanding in thematic learning at the elementary level. Tiered questioning helps students think more critically, whereas card-based visual media facilitate concept comprehension and increase student engagement throughout the learning process. Practically, this study offers recommendations for teachers to integrate interactive approaches that require students to think critically, respond to questions, engage in discussions, and collaborate during learning activities. Schools may utilize these findings as a foundation for developing teacher training programs and strengthening a culture of active learning. Moreover, the results highlight the importance of innovative and playful low-cost learning media that can enhance students' attention and motivation.

Research Limitations

This study has several limitations that should be considered. First, it employed a quantitative correlational approach, which only allows for the identification of relationships and contributions between variables without rigorously controlling external factors. The influence of 8.3% suggests that other significant variables—such as learning motivation, parental support, teacher readiness, and the learning environment—were not measured. Second, the instrument used to measure the implementation of the learning model relied on self-reported student questionnaires, which may introduce subjectivity and social-desirability bias, particularly among elementary students who still have limited metacognitive abilities. Student learning outcomes were measured solely through Year-End Assessment (PAT) scores, which do not holistically represent student competencies, such

as affective, socio-emotional, and higher-order thinking skills (HOTS). Third, the study was conducted in a single public Islamic elementary school (madrasah ibtidaiyah) in Sukoharjo with a relatively conducive and religious-based learning environment. This limits the generalizability of the findings to schools with different socio-economic or cultural backgrounds. Fourth, the study did not examine the duration or long-term application of the model and media. Short-term effectiveness does not necessarily guarantee sustained impact on concept retention, long-term learning motivation, or the development of metacognitive skills.

CONCLUSION

This study confirms that the implementation of the Probing–Prompting learning model assisted by Couple Card media has a significant effect on students’ learning outcomes in third-grade thematic learning at MIN 4 Sukoharjo. Empirical findings show that the model was implemented effectively by the teacher and actively received by students, as indicated by questionnaire scores predominantly in the high category (Mean = 54.18; 47.2% in the “High” category). In addition, students’ learning outcomes were classified as high (Mean = 79.46; 61.11% in the “High” and “Very High” categories). Results of the simple linear regression analysis revealed a positive and significant effect between the learning model and student outcomes ($R = 0.287$; $R^2 = 0.083$; $\beta = 0.590$; $p = 0.003 < 0.05$), thus supporting the research hypothesis. These findings demonstrate that the integration of structured questioning (probing–prompting) and interactive visual media (Couple Cards) effectively enhances learning achievement among elementary school students, although the effect size remains moderate at 8.3%.

This study contributes three key insights to the field of education. First, it fills a research gap by integrating the Probing–Prompting model and Couple Card media into a unified instructional approach, which has rarely been examined in prior studies. Second, it empirically validates that the integration of dialogic questioning with concrete visual media aligns with Vygotsky’s theory of scaffolding and the zone of proximal development, as well as Mayer’s dual-coding theory, which posits that the combination of visual and verbal representations enhances learning memory. Third, the study strengthens evidence regarding the effectiveness of structured inquiry techniques in elementary education, particularly within madrasah ibtidaiyah contexts that emphasize religious-pedagogical values, humanistic teacher–student interaction, educational dialogue, and character habituation.

Despite providing strong empirical evidence, this research has several limitations that inform directions for future studies. First, the moderate effect size (8.3%) suggests that other variables—such as motivation, family support, teacher characteristics, and learning environment—may play a larger role and should be explored in subsequent research. Second, the correlational design limits the ability to determine causal effects; therefore, future studies are encouraged to employ experimental or longitudinal quasi-experimental designs to validate the stability of findings over time. Third, future research is recommended to expand the study sites and sample size (multi-site studies) to increase generalizability and to explore digital interactive media as an extension to the Couple Card model, aligned with the demands of a digital-era learning ecosystem.

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