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THE EFFECT OF CONCRETE MEDIA-ASSISTED EXPERIENTIAL LEARNING MODEL ON NATURAL AND SOCIAL SCIENCE LEARNING OUTCOMES IN TERMS OF 5TH-GRADE STUDENTS' CURIOSITY

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Abstrak
Penelitian ini bertujuan menguji pengaruh penerapan model *Experiential Learning* berbantuan media konkret terhadap hasil belajar IPAS siswa kelas V SD ditinjau dari rasa ingin tahu. Penelitian difokuskan pada pembelajaran IPAS yang menuntut keterlibatan aktif siswa melalui pengalaman langsung dan penggunaan media konkret untuk memperkuat pemahaman konsep. Penelitian ini penting karena dapat memberikan bukti empiris tentang efektivitas pembelajaran berbasis pengalaman dan media konkret dalam meningkatkan hasil belajar IPAS. Metode yang digunakan adalah eksperimen semu dengan desain *posttest only control group design*. Sampel penelitian melibatkan siswa kelas Gugus Ubud V yang dibagi ke dalam kelompok eksperimen dan kelompok kontrol. Data dikumpulkan melalui tes pilihan ganda dan kuesioner rasa ingin tahu yang telah distandarisasi, kemudian dianalisis menggunakan perangkat lunak SPSS. Temuan penelitian ini mengungkapkan bahwa hasil belajar sains berbeda antara siswa yang belajar melalui metode tradisional dan siswa yang menggunakan model pembelajaran pengalaman dengan media fisik. Paradigma pembelajaran pengalaman, ketika dikombinasikan dengan media fisik, meningkatkan hasil belajar bagi anak-anak dengan tingkat minat yang tinggi sekaligus tetap efektif.

Kata Kunci: *Experiential Learning*; Hasil Belajar; Media Konkret; Rasa Ingin Tahu

Abstract
The purpose of this study was to determine the impact of integrating the Experiential Learning model using actual media on Grade V students' IPAS (natural and social sciences) learning outcomes, as perceived through the lens of curiosity. The study centered on IPAS learning, which necessitates active student participation through direct experience and the use of physical media to improve conceptual comprehension. This project is significant because it will give empirical data about the efficacy of experience-based learning and tangible media in enhancing IPAS learning outcomes. A quasi-experimental approach with a posttest-only control group design was used. The sample included Grade V pupils from Gugus Ubud who were divided into two groups: experimental and control. Data were obtained using a multiple-choice test and a standardized curiosity questionnaire, which were then analyzed with SPSS software. The study found that the outcomes of IPAS learning differed between students who learned using traditional methods and those who used an experiential learning model with specific media. The experiential learning model, along with specific media resources, provides better learning outcomes for students who have a strong desire to learn while being effective.

Keywords: *Concrete Media; Curiosity; Experiential Learning; Learning Outcomes*

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INTRODUCTION

Natural and Social Sciences (IPAS) learning plays a strategically important role in preparing elementary school students to adapt to future scientific discoveries, technological advancements, and social changes. Science education does not focus solely on understanding factual material, but also on developing critical thinking skills, problem-solving abilities, and evidence-based decision-making in real-world contexts (Letasado et al., 2024; Masfufah et al., 2023; Suryadewi et al., 2020). Meaningful learning processes require active student involvement in activities such as observing, asking questions, experimenting, and reflecting on learning experiences (Andresen et al., 2020; Masfufah et al., 2023; Santika et al., 2022).

Scientific literacy refers to students' ability to apply scientific and social knowledge to identify problems, provide scientific explanations, draw conclusions based on data, and think critically when faced with environmental challenges (Agustina & Margunayasa, 2024; Maksum et al., 2021b; Suparya et al., 2022). Because this ability emphasizes connecting concepts to real-world situations rather than merely memorizing material verbally, it serves as an important indicator of learning quality (Suparya et al., 2022; Suryadewi et al., 2020). Strengthening IPAS literacy requires learning experiences that provide students with opportunities to study natural and social phenomena through logical, systematic, and coherent thinking processes (Maksum et al., 2021; Santika et al., 2022).

Field evidence indicates that Indonesian students continue to experience difficulties in science learning. The 2022 Programme for International Student Assessment (PISA) placed Indonesia 68th out of 81 participating countries, with a science score of 398. This result indicates that learning processes still face fundamental problems in adequately fostering conceptual understanding and scientific reasoning (Mea, 2024; Parwati et al., 2025). Furthermore, the 2022 Minimum Competency Assessment results show that the majority of students still require foundational and intensive support, particularly in reasoning skills and applied conceptual knowledge (Linsih et al., 2025; Suparya et al., 2022).

The Merdeka Curriculum was introduced as an effort to address these challenges by strengthening more contextual learning, including the integration of science and social studies into IPAS (Mea, 2024; Maksum et al., 2021). Science education aims to help students understand natural and social phenomena holistically while fostering critical thinking skills through real-world investigative activities (Maksum et al., 2021; Santika et al., 2022). To effectively implement this curriculum, instructional models must shift from teacher-centered to student-centered approaches. This shift is expected to make learning experiences more engaging and meaningful while stimulating students' curiosity (Arisandhi et al., 2023; Masfufah et al., 2023; Santika et al., 2022).

Problems arise when science education in elementary schools remains dominated by informative and one-way instructional techniques, which provide limited opportunities for students to explore, observe, and deepen their understanding through direct action (Andreani & Gunansyah, 2023; Andriyansyah & Ningsih, 2021; Arnyana & Suma, 2025). Such conditions result in less engaging learning experiences, students tending to be passive, and curiosity that is not optimally stimulated (Aditya et al., 2023; Andreani & Gunansyah, 2023; Morris, 2020; Triretnoningrum et al., 2025). The utilization of the surrounding environment and concrete learning media has also not been maximized, even though elementary school students' characteristics require real experiences to support conceptual understanding (Aditya et al., 2023; Moje & Lewis, 2020; Passarelli & Kolb, 2023; Safitri, 2020).

A preliminary study conducted on 2 March 2025 involving fifth-grade students from five elementary schools in the Ubud Cluster revealed that the achievement of the Learning Objective Attainment Criteria (KKTP) for IPAS was still low. IPAS achievement data from the odd semester of the 2024/2025 academic year showed that only about 41% of students achieved scores above the KKTP threshold, indicating that more than half of the students had not met the expected competency standards (Dokumen Guru Kelas V Gugus Ubud, 2025; Kemendikbudristek, 2022). This low achievement occurred consistently across all schools, suggesting the presence of general instructional problems that require improvements in learning strategies and instructional design (Andriyansyah & Ningsih, 2021).

Curiosity is an affective aspect that plays an important role in learning success, as it serves as a primary driver for students to ask questions, seek information, and explore concepts more deeply (Hanim, 2022; Peterson, 2020; Rosnawati, 2021; Singh & Manjaly, 2022). Curiosity also functions as a positive emotion that motivates individuals to engage in exploration and expand their knowledge, both in the short and long term (Rosnawati, 2021; Hanim, 2022). Strengthening curiosity is particularly relevant because IPAS learning requires investigative activities and direct experiences to enable students to construct understanding based on observation and evidence (Jampel & Antara, 2024; Maksum et al., 2021a; Suparya et al., 2022).

Fifth-grade students are at the concrete operational stage, meaning they can understand ideas more effectively when using media that can be directly observed and manipulated (Safitri, 2020; Wardani & Janattaka, 2022). Concrete media enhance students' attention, improve focus, and strengthen the process of concept formation, making learning engagement more active and meaningful (Wardani & Janattaka, 2022; Aditya et al., 2023). In this learning cycle, students do not merely acquire knowledge; they learn through the process of interpreting experiences (Artinta, 2021; Haryanti et al., 2021). Previous studies have shown that experiential learning can optimize conceptual understanding and learning outcomes in natural and social sciences, particularly when combined with concrete media that make learning more contextual (Sagitarini et al., 2020; Wardani & Janattaka, 2022). Curiosity is one of the factors influencing IPAS learning outcomes, which represents a limitation of previous studies due to the very limited number of investigations conducted on this variable (Andreani & Gunansyah, 2023; Hanim, 2022).

The scientific novelty of this study lies in examining how experiential learning models supported by concrete media affect IPAS learning outcomes. Curiosity is employed as a moderating variable, and the interaction between instructional models and students' affective attributes is tested. This approach helps explain IPAS learning conditions, which are influenced not only by instructional strategies but also by students' readiness and willingness to engage with the learning material (Hanim, 2022; Santika et al., 2022).

One of the problems addressed in this study is the low science learning outcomes of fifth-grade students in the Ubud Cluster. Another issue is ineffective instruction that fails to inspire students to actively participate in the learning process or stimulate their curiosity toward scientific concepts. The purpose of this study is to examine how the implementation of an experiential learning model supported by concrete media affects natural science learning outcomes among fifth-grade students in SD Gugus Ubud.

METHOD

To explore how learning models influence scientific learning outcomes, this study employed a quantitative approach with a quasi-experimental technique. The research design used a post-test-only control group design, comparing an experimental group that received experiential learning using real media with a control group that received traditional instruction. This strategy was adopted because educational research cannot fully control for external influences. Nevertheless, the study can provide empirical data by comparing two academically equivalent groups (Arikunto, 2019; Sugiyono & Lestari, 2021).

Fifth-grade elementary school students in the Ubud Cluster served as the research subjects. There were approximately 200 students distributed across seven classes in five schools within the area. To ensure that there were no substantial differences in initial abilities among classes, a simple random sampling procedure using a lottery method was applied to select the class-level sample. Subsequently, a one-way ANOVA was conducted to examine the equivalence of initial abilities based on the final results of fourth-grade studies. The sampling determination results showed that 31 students were assigned to the experimental group from SDN 1 Ubud Grade V A and 37 students were assigned to the control group from SDN 3 Ubud Grade V A and V B, resulting in a total sample of 68 students.

The learning instruments used included a scientific learning outcomes test and a curiosity questionnaire. The multiple-choice scientific learning outcomes test was developed based on the content of Harmony in Ecosystems and covered cognitive domains from C1 to C5 according to the revised Bloom's taxonomy. The curiosity questionnaire was constructed using a five-point Likert scale. After the instructional treatments were administered to each group in accordance with the research design, data were collected. All students then completed the post-test and filled out the curiosity questionnaire. Before hypothesis testing, the data were analyzed using SPSS version 26, employing descriptive statistics to characterize score patterns. Prerequisite tests, namely normality and homogeneity tests, were also conducted (Candiasa, 2019).

RESULT

This subsection presents the results of testing the research hypothesis using two-way analysis of variance (two-way ANOVA).

Table 1. Two-Way ANOVA Test Results

Inter-Subject Effect Test

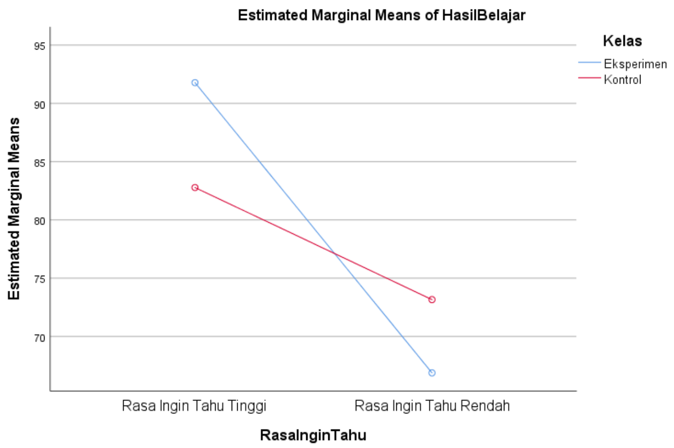
Dependent Variable: Learning Outcomes

Sources of Variation	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	12287.99a	3	4095.99	76.57	.00	0.78
Intercept	393962.56	1	393962.56	7364.97	.00	0.99
Class	5238.96	1	5238.96	97.94	.00	0.60
Curiosity	6008.88	1	6008.88	112.33	.00	0.63
Curiosity * Class	577.54	1	577.54	10.79	.002	0.14
Error	3423.44	64	53.49			
Total	402223.91	68				
Corrected Total	15711.44	67				

a. R Square = 0.782 (Corrected R Square = 0.772)

The results of the two-way ANOVA test presented in Table 1 indicate that the Class variable (learning model) has a significance value of 0.00 and an F value of 97.94. Because the significance level of 0.00 is lower than 0.05, H_0 is rejected and H_1 is accepted. Thus, fifth-grade students in the Ubud Cluster demonstrate significantly different science learning outcomes compared to those taught using conventional instruction. The findings indicate that the experiential learning model, supported by physical media, is more effective in improving students' science learning outcomes than the traditional learning model, as it requires collaboration and positive interdependence.

Concerning the second issue, the significance value of the Class × Curiosity interaction component is 0.002, with an F value of 10.79; therefore, hypothesis H_0 is rejected, while H_2 is accepted because the significance value of 0.002 is less than 0.05. As a result, the interaction between the experiential learning paradigm and curiosity influences science learning outcomes. In other words, when the experiential learning approach is applied, students with high curiosity achieve better science learning outcomes, whereas students with low curiosity attain lower science learning outcomes. Figure 1 illustrates how the learning model and achievement motivation affect learning achievement.



Graph 1. Interaction of Learning Model with Curiosity on Science Learning Outcomes

Graph 1 illustrates differences in science learning outcomes based on learning groups and levels of curiosity. In the high-curiosity group, the experimental class demonstrates better learning outcomes than the control class, whereas in the low-curiosity category, the experimental class shows poorer outcomes. The intersecting lines between the two groups indicate a relationship between the learning paradigm and interest in science learning outcomes. Overall, the experiential learning paradigm represents the most effective practical approach for supporting students with high levels of interest. To determine the effectiveness of the experiential learning model supported by concrete media among students with high curiosity, the results of the two-way ANOVA analysis are presented.

Table 2. Results of 2-Way ANOVA Test for High Curiosity

Multiple Comparison						
Dependent Variable: Learning Outcomes						
(I) KlpkIT	(J) KlpkIT	Mean Difference (I-J)	Standard Error	Sig.[d]	95% Confidence Interval Lower Limit	Upper Limit
High Curiosity Experimentation	Low curiosity Experimentation	$13.02^{*,b,c}$	2.69	0.00	7.63	18.42
	High Curiosity Control	$9.33^{*,b,c}$	2.73	0.001	3.85	14.81
	Low Curiosity Control	$35.31^{*,b,c}$	2.69	0.00	29.92	40.71

Based on the average observation results
*. The mean difference is significant at the 0.05 significance level.

Table 2 presents the results of the two-way ANOVA test for the group with high curiosity. The significance level between the experimental and control groups is 0.00, with a mean difference of 9.33. The significance value of 0.001 is less than 0.05, indicating that H_0 is rejected and H_3 is accepted. This finding demonstrates a substantial difference in science learning outcomes between students with high curiosity who were taught using an experiential learning model supported by physical media and those who were taught using a traditional approach. Table 3 below presents the results of the testing of the fourth hypothesis.

Table 3. Results of Two-Way ANOVA Test for Low Curiosity

Multiple Comparison						
Dependent Variable: Learning Outcomes						
(I) KlpkIT	(J) KlpkIT	Mean Difference (I-J)	Standard Error	Sig.[d]	95% Confidence Interval	
					Lower Limit	Upper Limit
Low Curiosity Experimentation	High curiosity Experimentation	-13.02[*,b,c]	2.69	0.00	-18.42	-7.63
	High Curiosity Control	-3.69[b,c]	2.69	0.17	-9.08	1.69
	Low Curiosity Control	22.29[*,b,c]	2.65	0.00	16.98	27.59

Based on the average observation results
*. The mean difference is significant at the 0.05 significance level.

Table 3 presents the results of the two-way ANOVA test for the group with low curiosity. The significance level for the comparison between the experimental group and the control group is 0.00, with a mean difference of 22.29. Because the significance level of 0.00 is less than 0.05, H_0 is rejected, and H_4 is accepted. As a result, there is a substantial difference in science learning achievement between students with low curiosity who participated in experiential learning supported by physical media and those who followed traditional learning. This contrast indicates that experiential learning strategies can still significantly improve learning outcomes for students with low levels of curiosity. Experiential learning strategies supported by physical media are superior to traditional techniques in helping students with low curiosity achieve higher science learning outcomes. This approach encourages group collaboration and provides students with a clear visual understanding of the learning content.

DISCUSSION

The main findings of this study indicate that, compared with traditional instructional techniques, the use of an experiential learning model supported by physical media improves science achievement among fifth-grade students in the Ubud Cluster. The substantial differences in learning outcomes between groups suggest that student-centered learning can yield higher academic achievement when learning activities involve observation, investigation, and direct experience. Science and social studies learning at the elementary school level requires understanding that cannot be developed solely through memorization of concepts, as the content is closely related to natural and social phenomena that demand processes of observing, interpreting, and connecting concepts to students' real-life contexts. One-way instruction risks limiting students' cognitive space, reducing opportunities to construct understanding independently, and lowering learning engagement because students tend to become passive recipients of information. This instructional methodology allows students to experience topics through sensory- and action-based activities, ensuring that learning does not end with acquiring explanations but continues through the construction of meaning from experience. This perspective is consistent with the view that knowledge is generated through the transformation of experience and students' active participation in the learning process, rather than solely through the transmission of information from teacher to student (Artinta, 2021; Hendracipta, 2021).

The situations observed during instruction reinforce this explanation, as students in the experimental group demonstrated higher engagement and appeared more prepared to participate in activity-based learning processes. Students were more focused during lessons, more enthusiastic about using concrete media, and more active in expressing questions and opinions when discussing observation results. Such engagement is crucial in science learning because conceptual mastery requires the ability to connect material to real-world contexts. Concrete media reduce difficulties in understanding abstract concepts by enabling students to see, touch, and manipulate tangible representations of the content being studied. Conventional learning that emphasizes verbal explanations and written exercises tends to position students as passive recipients who do not directly experience the phenomena being learned, resulting in weaker concept formation. This condition can lead to reduced retention, increased boredom, and diminished quality of learning interactions. Empirical evidence regarding the benefits of concrete media and direct experience as bridges for conceptual understanding among elementary school students has also been reported in studies emphasizing the role of concrete media in strengthening comprehension of abstract material and increasing learning engagement (Rahmawati, 2020; Wardani & Janattaka, 2022).

The findings of this study are consistent with experiential learning theory, which views learning as a process of transforming experience into knowledge. Students construct knowledge by engaging in real experiences, reflecting on those experiences, developing ideas based on reflection, and testing these concepts through active application or experimentation. The concrete experience stage serves as an attention trigger and a foundation for developing curiosity; the reflection stage helps students process information; the conceptualization stage enables students to organize understanding into conceptual forms; and the active experimentation stage encourages students to test concepts in new situations. Effective science learning should allow this learning cycle to operate fully, as science content requires experience to understand causal relationships and connections between concepts and the surrounding environment. The experimental group achieved better learning outcomes because instruction allowed students to engage in the experiential and meaning-making cycle more actively and deeply than the control group, which relied more heavily on teacher explanations. This explanation reinforces the notion that experiential learning not only increases learning interest but also strengthens the cognitive processes underlying conceptual understanding (Haryanti et al., 2021; Hendracipta, 2021).

The research results are also aligned with previous studies demonstrating that experiential learning can enhance learning outcomes and conceptual understanding. Students are directly involved in exploratory processes and discover meaning from their learning experiences, which has been shown to improve their understanding of scientific concepts. Improved learning outcomes are closely related to activities that require students to observe, communicate, draw conclusions, and apply ideas to real situations. Experiential learning is also frequently associated with increased student activeness and the development of critical thinking skills, as students do not merely listen to explanations but actively experience learning through systematically designed activities. The combination of experiential learning models with concrete media further strengthens instructional effectiveness because concrete media help students build more accurate mental representations and reduce misconceptions about abstract material. These data support the premise that this strategy is appropriate for elementary school students who require real-world experiences to develop concepts (Haryanti et al., 2021; Anggraeni et al., 2020). The relevance of concrete media as instructional reinforcement is further emphasized by findings showing that concrete media improve accuracy of understanding and facilitate students' ability to connect concepts with everyday experiences (Sagitarini et al., 2020; Wardani & Janattaka, 2022).

The interaction between learning models and curiosity also influences science learning outcomes, according to subsequent findings. These results imply that the success of instructional models is inseparable from students' emotional qualities, which affect their learning engagement. Curiosity is an internal driver that influences students' tendencies to ask questions, investigate, and process information more deeply. Experiential learning supported by concrete media provides ample opportunities for inquiry through observation and object manipulation, allowing curious students to capitalize on these opportunities to enhance understanding. Curious students engage in investigative activities such as repeating trials, comparing results, linking experiences with existing knowledge, and developing follow-up questions to deepen conceptual understanding. Conventional learning tends to provide limited exploratory space, so students' curiosity is not always translated into productive learning activities. This condition explains why learning outcomes among students with high curiosity are more pronounced when they participate in experiential learning compared with conventional instruction (Hanim, 2022; Rosnawati, 2021).

Students are encouraged to seek new information when they encounter concepts they do not understand, particularly when the learning environment is enjoyable and challenging. Curiosity makes students less satisfied with brief answers and motivates them to investigate further to obtain more comprehensive knowledge. The experiential learning model provides a highly stimulating learning environment because students interact with concrete objects, observable phenomena, and activities that enable real learning experiences. High curiosity strengthens student engagement throughout the stages of experience, reflection, conceptualization, and application, thereby optimizing conceptual understanding and learning outcomes. Students with strong curiosity tend to be more engaged in learning activities than those with low curiosity; consequently, the process of understanding phenomena is more effective among highly curious students. This theory suggests that students' emotional willingness to actively participate in learning processes enhances the effectiveness of experiential learning (Arini et al., 2020; Hanim, 2022).

The findings of this study are consistent with previous research indicating that individual qualities such as motivation, curiosity, and willingness to learn play a crucial role in determining the effectiveness of instructional models. Experiential learning has a greater impact on highly curious students because they are able to optimize learning activities that require direct participation. Instruction that provides exploratory opportunities often results in greater learning gains among students with high curiosity compared with those with low curiosity. This study supports the hypothesis that experiential learning models supported by physical media are more effective for students with high curiosity because they can use real experiences to develop stronger conceptual understanding (Arini et al., 2020; Nurlaela et al., 2023). Additional empirical evidence confirms that high curiosity encourages students to utilize new experiences more productively, leading to improved learning performance when learning environments allow exploration (Kusumaningrum & Sukartono, 2022; Nurlaela et al., 2023).

Experiential learning using physical media produces higher science learning outcomes than traditional learning because students with high curiosity actively seek new experiences and expand their knowledge. Therefore, experiential learning serves as an appropriate platform for accommodating these characteristics. Observation and direct exploration activities encourage students to actively develop understanding through full engagement in the learning process. Students are observed to ask more questions, conduct repeated trials, and formulate conclusions based on observation. These activities indicate that students strive to understand subject matter more deeply rather than superficially. Because traditional learning relies heavily on teacher explanations, curiosity does not always translate into effective learning activities. This difference underscores the importance of aligning instructional models with student characteristics to enhance learning effectiveness (Hanim, 2022; Pebriana, 2022).

The benefits observed among students with high curiosity can be traced to the concept of experiential learning, which places the experiential cycle at the center of the learning process. Students who naturally possess high curiosity are better able to manage this cycle because they have a strong desire to investigate, reflect, and test ideas. Reflection becomes more meaningful because students are motivated to understand the reasons behind observed phenomena. Conceptualization is strengthened because students are interested in connecting experiences with broader concepts. Application is also optimized because students are driven to test concepts in new situations. Conventional learning does not always provide sufficient space to complete this cycle, limiting opportunities for highly curious students to construct understanding through experience. This condition explains why the experimental group demonstrated superior outcomes among students with high curiosity (Artinta, 2021; Hendracipta, 2021).

The findings of this study align with previous research, reinforcing the claim that strong curiosity is a characteristic contributing to the effectiveness of activity-based learning. Students with high levels of curiosity possess a greater capacity to apply new experiences, resulting in superior learning performance when given opportunities for direct investigation. Activity-based learning has also been shown to significantly improve learning outcomes, particularly for students with strong exploratory drives, because challenging informational activities enable students to actively process and deepen understanding. These findings indicate that experiential learning supported by physical media is not only effective in general but also particularly beneficial for students with high curiosity (Hutagalung, 2022; Kusumaningrum & Sukartono, 2022). Other findings further confirm that experiential learning yields more pronounced results among students with strong motivation and exploratory tendencies, as they are more engaged in observation and analysis processes (Hutagalung, 2022; Munif, 2024).

Discussions with students who exhibited low curiosity revealed that experiential learning supported by physical media resulted in superior learning outcomes compared with traditional instruction. This study demonstrates that experiential learning is not only beneficial for students with strong curiosity but can also assist students with low curiosity in participating in learning activities. Concrete media function as stimuli that enhance students' attention and focus, encouraging initially passive students to become more interested in learning activities. Direct interaction with tangible objects helps students learn topics more effectively because they can observe and manipulate real-world items related to the subject matter. Simple observation activities, light experiments, and the use of instructional aids provide more engaging learning experiences than verbal explanations alone. This condition indicates that concrete media can activate initial engagement even among students with low curiosity (Rahmawati, 2020; Safitri, 2020).

Although students with low curiosity in the experimental group were less engaged than those with high curiosity, an increase in engagement was still evident. Students tended to follow teacher instructions and conduct observations as directed, with limited additional inquiry. This condition suggests that low curiosity restricts the depth of elaboration on learning experiences. Conventional learning is also insufficient in encouraging engagement among students with low curiosity because it is largely passive and provides limited stimulating experiences. Students become increasingly passive, less focused, and less motivated to actively construct understanding, resulting in lower learning outcomes. This comparison demonstrates that practical learning using physical media is an effective technique for increasing engagement among students with low curiosity, although additional support is needed to deepen this engagement (Silvia & Ropida, 2022; Sumarmi et al., 2020).

The theoretical explanation for findings among students with low curiosity can be linked to the view that direct experience is central to meaningful learning. Students can construct understanding through concrete experiences even when intrinsic motivation is low, as such experiences provide stimuli that capture attention and initiate cognitive processes. Concrete media offer visual and kinesthetic experiences that align with the cognitive developmental characteristics of elementary school students. This argument strengthens the rationale for why students with low curiosity may benefit from experiential learning supported by physical media, as the learning stimuli are stronger than those provided by traditional instruction (Safitri, 2020; Rahmawati, 2020). Experiential learning has also been shown to support gradual understanding through activities designed to provide real experiences and opportunities for reflection, thereby increasing student engagement even when initial interest is low (Sumarmi, 2020; Silvia & Ropida, 2022).

Overall, the findings indicate that experiential learning models supported by physical media are effective in improving science learning outcomes among fifth-grade students, regardless of whether they exhibit high or low levels of curiosity. Interaction with curiosity influences the effectiveness of the model; therefore, learning success is determined not only by the instructional model employed but also by students' emotional qualities, which affect the quality of their learning engagement. Students are able to learn information through real-life situations and strengthen their understanding of topics using authentic media. Learning becomes more relevant and aligned with the developmental needs of elementary school children. These findings are relevant to science and science education development, as they highlight the importance of student-centered and experience-based learning in improving instructional quality. Compared with traditional learning, instruction supported by real experiences and appropriate media can enhance student interest, strengthen conceptual understanding, and promote superior learning outcomes (Hendracipta, 2021; Wardani & Janattaka, 2022).

CONCLUSION

The purpose of this study was to examine the effectiveness of the Experiential Learning model supported by concrete media. IPAS learning outcomes were proven to be better than those achieved through conventional learning methods. The interaction between the learning model and curiosity was also shown to have an effect, indicating that learning success is determined not only by the strategies employed but also by students' affective characteristics. The experiential learning model supported by concrete media appears to have a greater impact on students with high curiosity, while also benefiting students with low curiosity by providing them with direct experiences and the use of tangible learning media. Recommendations for future research include expanding the context of model implementation across various IPAS topics, developing more flexible instructional strategies to enhance students' curiosity, and employing research designs that can more comprehensively capture changes in students' abilities through pre- and post-intervention measurements.

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