

Analysis Of The Use Of Printed Image Media On Student Learning Outcomes In Science Learning In Grade III Elementary School

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Article Info

Article history:

Accepted: 28 July 2026

Publish: 05 Oktober 2026

Keywords:

Printed Image Media,
Learning Outcomes,
IPAS Learning,
Elementary School.

Abstract

The academic foundation of this research rests upon the discernible disparity between the theoretical affordances of printed image media as a visual pedagogical tool to concretize IPAS learning concepts and the empirical reality of its suboptimal deployment at SDN 4 Sama Guna. Although teachers have integrated such media into instruction, empirical observations reveal considerable variation in students' comprehension levels and participatory engagement, indicating that the utilization of printed image media has yet to yield a significant contribution to enhanced learning outcomes. Initial observations showed that only 6–7 of the 21 students were active in class and 9 students (43%) scored below the Minimum Completion Criteria (KKM) of 70. The study aims to: (1) elaborate the implementation of printed image media in IPAS instruction for third-grade students at SDN 4 Sama Guna, and (2) identify the supporting and constraining factors. Employing a qualitative descriptive approach with 21 students, the third-grade teacher, and the school principal as research subjects, data were collected through participatory observation, in-depth interviews, and documentation. Data analysis was conducted using the Miles and Huberman interactive model, with validity testing through source, technique, and time triangulation. The findings demonstrate that the implementation of printed image media occurs twice a week (Tuesdays and Thursdays) through preparatory phases (selection, printing, mounting on cardboard), implementation phases (displaying, explanation, discussion, evaluation), and active student involvement. According to the teacher and student informants, the media helped concretize abstract concepts, increased student interest and participation, and was associated with better understanding; evaluation documentation indicated that the scores of initially passive students met or exceeded the KKM. Five supporting factors were identified, namely media-material alignment, image clarity, visual appeal, student engagement, and ease of use. Five inhibiting factors were identified, namely limitations in the quantity and variety of images, suboptimal print quality, restricted dimensions, time constraints in preparation, and inadequate infrastructure support. The teacher responded with five adaptive strategies, namely diversifying image sources, enlarging image sizes, enhancing print quality, optimizing time management, and integrating supplementary media. These findings are context-specific to a single class at SDN 4 Sama Guna and result from a qualitative analysis.

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1. INTRODUCTION

Education is a crucial aspect in efforts to improve the quality of human resources. Through the educational process, individuals not only acquire knowledge but also develop skills, attitudes, and values needed in everyday life. Therefore, learning must be designed and implemented effectively to maximize educational goals (Sanjaya, 2021). In the learning process, teachers play a crucial role in creating an engaging and meaningful learning environment. Good learning focuses not only on delivering material but also on actively engaging students. One effort teacher can make to improve the quality of learning is by utilizing learning media that are appropriate to student characteristics (Rusman, 2022).

Learning media serves as a tool that can facilitate the delivery of material to students. The use of appropriate media can help students understand the material more clearly, increase learning interest, and encourage student engagement in the learning process. Without adequate learning media, the learning process tends to be monotonous and less engaging for students (Yaumi, 2023). At the elementary school level, especially grade III, students are in the concrete operational development stage, making it easier to understand something tangible and visual. This is supported by Jean Piaget's cognitive development theory, which explains that children's thinking skills develop through the concrete operational stage, where children begin to be able to think logically but still require the assistance of real objects (Nuryati & Darsinah, 2021). Therefore, the use of learning media that can present objects concretely is essential, especially in science learning, which contains many abstract concepts (Arsyad, 2023).

One of the media that can be used in science learning is printed images. Printed images are visual media that present information in the form of images that students can see directly. This medium has the advantage of helping students understand the material more concretely, attracting students' attention, and being easy for teachers to use in learning (Sudjana & Rivai, 2022). However, the use of learning media depends not only on its availability but also on how it is used in the learning process. Media used without active student involvement will not have a maximum impact on student understanding. Therefore, media use must be accompanied by appropriate learning strategies to optimally achieve learning objectives.

Learning outcomes are an indicator of learning success, indicating the extent to which students understand the material taught. Good learning outcomes reflect an effective learning process. Conversely, poor learning outcomes can indicate problems in the learning process, whether in terms of methods, media, or student engagement (Pane & Dasopang, 2021; Hamalik, 2021). Based on initial observations conducted in grade III of SDN 4 Sama Guna, empirical evidence was found that although teachers had used printed media in science lessons, their use was still limited and had not been systematically integrated with learning strategies that encouraged active student engagement. Of the 21 grade III students, only around 6-7 students appeared active, while the others were passive. A document search of daily science test scores also showed that 9 students (around 43%) still scored below the Minimum Completion Criteria (KKM), which was 70.

This situation indicates a sharp gap between the theoretical potential of printed media as a visual aid that can concretize abstract concepts and the reality of its implementation in the field, which has not yet optimally contributed to student learning outcomes. The mere existence of media is not enough; the fundamental issue is how the media is implemented in the learning process, and what factors support or hinder its effectiveness.

Various previous studies have examined the use of visual media. Research by Sari (2022) found that visual media positively impacts science learning outcomes because it can concretize abstract concepts. Research by Pratama (2023) shows that visual media increases student activity and engagement in elementary schools. Lestari (2021) emphasized that visual media effectively presents information visually, making it easier for students to remember the material. Rahmawati (2024) and Hidayat (2022) also emphasized that print and visual media bridge the gap between abstract concepts and students' concrete understanding. However, these studies tend to focus on general quantitative effectiveness, for example by measuring changes in learning outcomes or student activity, and give limited attention to how the media is prepared, used step by step in the classroom, and adapted by teachers when practical constraints arise. This study differs from them in three respects. First, it is a descriptive qualitative study that portrays the whole implementation process of printed image media (preparation, implementation, and evaluation) in IPAS learning, rather than measuring the size of its effect. Second, it identifies both the supporting and the inhibiting factors, together with the adaptive strategies the teacher uses to overcome them. Third, it is set in a third-grade class at a school with limited facilities in North Lombok Regency (for example, limited printers and ink, and no reliance on LCD projectors), so it provides a context-specific picture of low-technology media use that has received little attention.

Based on these issues, further study is needed on how printed image media is used in science learning and how it can contribute to student learning outcomes. This study aims to describe the implementation of printed image media and identify supporting and inhibiting factors in science learning in grade III of SDN 4 Sama Guna.

2. RESEARCH METHODS

This study employed a qualitative approach with a descriptive qualitative design. The goal was to gain a deeper understanding of the use of printed media in science learning and how it can improve the learning outcomes of third-grade elementary school students. The qualitative approach was chosen because it emphasizes understanding the meaning, process, and social context that occur naturally without manipulation, allowing researchers to focus on the processes that occur during learning (Creswell, 2023). Descriptive research aims to describe phenomena systematically, factually, and accurately (Sugiyono, 2024).

The research was conducted at SDN 4 Sama Guna, North Lombok Regency, during the even semester of the 2025/2026 academic year. The subjects consisted of 21 third-grade students, the third-grade teacher (who implemented the learning process), and the principal.

Data collection techniques used included observation, interviews, and documentation. Non-participant observation was used to directly observe the process of using printed media and student engagement. Semi-structured interviews were conducted with third-grade teachers and student representatives to gather in-depth information about their experiences and responses to media use (Arikunto, 2016). Documentation was used to supplement the observation and interview data (Yusuf, 2021).

The collected data were analyzed using Miles and Huberman's interactive analysis model, which consists of three main stages: data reduction (selecting and focusing on important data), data presentation (organizing data systematically), and concluding (Sugiyono, 2024). To ensure data validity, researchers used source triangulation techniques (comparing data from teachers and students), technical triangulation (comparing observational data, interviews, and documents), time triangulation, and member checking with informants.

3. RESULTS AND DISCUSSION

Implementation of the Use of Printed Image Media

Based on observations and interviews conducted during the research, it was discovered that third-grade teachers at SDN 4 Sama Guna had implemented the structured use of printed image media in science lessons twice a week (Tuesdays and Thursdays). This implementation involved a series of stages, from preparation to implementation to evaluation.

During the preparation stage, the teacher selects images relevant to the science material, such as animal life cycles, natural resources, plant parts, and natural features. The images are downloaded from the internet or taken from books, then printed in A4 size or larger, and attached to cardboard for durability. The teacher states:

"Yes, I often use printed images to explain material that students find difficult to understand. Images can capture students' attention, allowing them to focus more on the lesson."

During the implementation phase, the teacher does not simply stick images on the board but uses the images as the center of classroom interaction. The teacher relates the material to students' experiences (apperception), then displays printed images. Students are asked to actively observe the images, identify visible components, and discuss them. For example, in the butterfly life cycle topic, the teacher asks students to work in groups to sort the randomly arranged images of metamorphosis phases. This activity significantly trains students' logical thinking skills while facilitating teamwork (student-centered learning).

The teacher conducted the evaluation phase at the end of the lesson through oral questions and answers, written questions, and the task of redrawing observed objects. Based on the evaluation results, there was a significant increase in understanding. The teacher stated that using

printed images helped students grasp the material more quickly than simply explaining it verbally. This was also confirmed by the students' responses:

"Yes, it's easier for me to understand the teacher's explanation... Yes, it's easier for me to remember because I see pictures."

These findings strongly align with Piaget's cognitive development theory, which states that children aged 8-9 years are in the concrete operational phase (Handika, Zubaidah, & Witarso, 2022). The use of tangible visual objects, such as printed images, successfully bridges abstract concepts (such as energy changes or the metamorphosis cycle) into physical representations that are easily understood by children. This also supports the views of Arsyad (2023) and Susanto (2022), who stated that visual media concretizes concepts and is able to attract and maintain students' attention.

The findings are also consistent with previous studies. Sari (2022) reported that picture media had a positive effect on science learning outcomes in elementary school because it concretizes abstract concepts; the present study complements this by showing how the concretization takes place in practice, namely through observing images, identifying components, and sorting metamorphosis images in groups. The increased participation seen here is in line with Pratama (2023), who found that visual media increases student activity and engagement, and students' remarks that they remember the material more easily because they see pictures reflect Lestari (2021), who emphasized that visual presentation makes material easier to remember. Rahmawati (2024) and Hidayat (2022) likewise argued that print and visual media bridge abstract concepts and concrete understanding, which is visible in how the teacher used the butterfly life cycle images. Whereas these studies mainly address the effectiveness of visual media, the present study adds a description of the implementation process in the classroom.

Supporting and Inhibiting Factors

Although the implementation went well, there were various factors that supported and hindered the use of this media. The main supporting factors included the media's suitability to the learning material, the clarity and readability of the images, the media's ability to attract students' attention, active student involvement, and ease of use by teachers (practicality). Teachers did not need complicated technological devices such as LCD projectors or internet connections in the classroom to use this media, making it highly applicable to local elementary school conditions. A teacher stated:

"The advantages of printed image media are that they are attractive, easy to understand, simple to use, and help improve students' concentration."

This is in line with Yaumi's (2023) view, which emphasizes that the effectiveness of learning media is not always determined by the sophistication of the technology, but rather by its suitability to learning objectives and the practicality of its use by teachers in the field.

On the other hand, there are several inhibiting factors, including: (1) limited number and variety of images due to resource constraints; (2) print quality that is sometimes not sharp enough; (3) limited image size so that it is difficult for students sitting in the back row to see; (4) extra preparation time from teachers; and (5) lack of supporting infrastructure (printers and ink at school). Regarding the constraint of image size, a student provided input:

"There are no (major obstacles); it's just that sometimes the resolution is too small so it's difficult to zoom in when sitting at the back."

Facing these obstacles, teachers have attempted various adaptive measures. They have taken the initiative to find alternative, high-resolution image sources, printed them in larger sizes (for example, A3 format if possible), or pasted A4 images collectively on a large piece of cardboard on the whiteboard, and used markers to thicken the image borders to make them more prominent. Time management is also carried out by preparing media well in advance of the lesson. These efforts demonstrate teachers' pedagogical competence in delivering optimal learning despite limited resources (Ilhami, 2022; Sudjana & Rivai, 2022).

The inhibiting factors found in this study also add to the studies discussed in the introduction (Sari, 2022; Pratama, 2023; Rahmawati, 2024), which primarily address the benefits and effectiveness of visual media. The present findings show that the benefits of printed image media depend on practical conditions such as image size, print quality, the number of images, and the availability of printing facilities. This supports Yaumi's (2023) view that the success of media lies in its suitability and practicality, and it shows that a low-technology medium still requires adequate preparation and school support. Teachers' adaptive strategies, such as enlarging prints and diversifying image sources, indicate that the constraints can be managed through teacher initiative, although the limitation in school infrastructure remains a matter for school-level support.

Overall, the analysis of the use of printed image media showed a positive correlation with students' cognitive learning outcomes in science. Students who were initially passive and struggled to digest memorized material became more enthusiastic, able to answer analytical questions verbally, and achieved evaluation scores that met or exceeded the Minimum Competency (KKM). Learning became less monotonous, and the meaning of the material was conveyed holistically.

4. CONCLUSION

Based on the research results and discussion, it can be concluded that the implementation of the use of printed image media in the science learning of grade III SDN 4 Sama Guna has been carried out systematically and appears, based on the perceptions of the teacher and students and the evaluation documentation, to support student learning outcomes. The implementation process was carried out through thorough preparation stages, implementation based on student-centered learning (through group discussions and visual observations), and comprehensive evaluation. Printed image media helped concretize abstract concepts of science material, which is in line with the characteristics of students' cognitive development in the concrete operational phase.

Supporting factors for this success include the suitability of the material, clarity of the images, practicality, and the media's ability to attract students' focus. Meanwhile, inhibiting factors such as limited image size, print quality, the number of school infrastructure, and preparation time allocation have been addressed by teachers through adaptive strategies such as enlarging the print scale, diversifying media sources, and thickening the visual contours. Overall, the use of printed image media was associated with increased understanding, participatory activities, and cognitive learning outcomes of third-grade students in science. These findings result from a descriptive qualitative analysis of a single class at SDN 4 Sama Guna; they describe the implementation process, perceptions, and context of use, and should not be read as evidence of a causal effect or generalized to other schools. Further research with a quasi-experimental or mixed-methods design is recommended to test the effect of printed image media on learning outcomes.

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