Journal of Advances in Education
Volume 1, No. 2, September 2025, 107-115
e-ISSN 3090-3211

Implementation of Pop Up Book Learning Media in Science Learning to Improve Learning Outcomes of Students of Elementary School 2 Meurandeh

Feri Saputra*
***Education for Islamic Elementary School Teachers Programme, IAIN Langsa**

Nur Balqis Mutia**
****Education for Islamic Elementary School Teachers Programme, IAIN Langsa**

Suhelayanti ***
*****Education for Islamic Elementary School Teachers Programme, IAIN Langsa**

Saptiani ****
******Education for Islamic Elementary School Teachers Programme, IAIN Langsa**

Submitted: 2025-10-10
Revised: 2025-10-21
Accepted: 2025-10-22
correspondence: nurbalqismutia@iainlangsa.ac.id

ABSTRACT

This study is ia Classroom Action Research (CAR) which aims to determine the improvement of student learning outcomes in the subject of Science on the material of Force Around Me through the use of pop-up book media. The subjects of this study were 20 fourth grade students of SD Negeri 2 Meurandeh. The instruments used in the study were tests and documentation. The study was conducted in two cycles, each consisting of the planning stage, action implementation, observation, and reflection. In cycle I, Pop Up Book media has been used as a visual aid, but student learning outcomes are still low. Only 6 students (30%) achieved completeness with a score of ≥75, and the class average only reached 72. After reflection, it was found that the learning strategy used had not actively involved students. Therefore, in cycle II improvements were made in the form of additional experimental activities, group discussions, and intensive guidance. As a result, all students (100%) achieved learning completeness with an average score increasing to 89. This increase shows that the use of Pop Up Book media accompanied by appropriate learning strategies can improve students' understanding of force material, as well as encourage active participation and independent learning. Thus, Pop Up Book media can be used as an effective alternative in improving science learning outcomes at elementary school level.
Keywords: *Learning Media, Learning Outcome, Pop up Book*

ABSTRAK

Penelitian ini merupakan Penelitian Tindakan Kelas (PTK) yang bertujuan untuk mengetahui peningkatan hasil belajar siswa pada mata pelajaran IPA pada materi Gaya di Sekitarku melalui penggunaan media pop-up book. Subjek penelitian ini adalah siswa kelas IV SD Negeri 2 Meurandeh

yang berjumlah 20 orang. Instrumen yang digunakan dalam penelitian adalah tes dan dokumentasi. Penelitian dilaksanakan dalam dua siklus yang masing-masing siklus terdiri dari tahap perencanaan, pelaksanaan tindakan, observasi, dan refleksi. Pada siklus I, media Pop Up Book telah digunakan sebagai alat peraga, namun hasil belajar siswa masih rendah. Hanya 6 siswa (30%) yang mencapai ketuntasan dengan nilai ≥75, dan rata-rata kelas hanya mencapai 72. Setelah dilakukan refleksi, diketahui bahwa strategi pembelajaran yang digunakan belum melibatkan siswa secara aktif. Oleh karena itu, pada siklus II dilakukan perbaikan berupa penambahan kegiatan eksperimen, diskusi kelompok, dan bimbingan intensif. Hasilnya, seluruh siswa (100%) mencapai ketuntasan belajar dengan skor rata-rata meningkat menjadi 89. Peningkatan ini menunjukkan bahwa penggunaan media Pop Up Book yang disertai strategi pembelajaran yang tepat dapat meningkatkan pemahaman siswa terhadap materi gaya, serta mendorong partisipasi aktif dan pembelajaran mandiri. Dengan demikian, media Pop Up Book dapat digunakan sebagai alternatif yang efektif dalam meningkatkan hasil belajar sains di tingkat sekolah dasar.

Kata Kunci: *Media Pembelajaran, Hasil Belajar, Pop Up Book*

INTRODUCTION

Ilmu Pengetahuan Alam dan Sosial (IPAS) in primary school education refers to an integrated field of study that combines concepts from both Natural Sciences (IPA) and Social Sciences (IPS) into a unified learning framework. The integration aims to provide students with a comprehensive and holistic understanding of their environment, encompassing both the natural phenomena that occur around them and the social interactions that influence human life. Through this integration, learning becomes more contextual, meaningful, and relevant to students' daily experiences.

In the Kurikulum Merdeka, IPAS is positioned as a single subject rather than two separate disciplines. Its core purpose is to encourage students to view scientific and social issues as interconnected phenomena, thus fostering critical thinking, problem-solving, and environmental awareness. IPAS is not a separation of IPA and IPS subjects, but a thematic integration designed to build students' comprehensive understanding of real-world phenomena through both natural and social perspectives (Suhelayanti, 2023).

Therefore, teachers responsible for teaching IPAS are required to be creative and innovative in designing and presenting learning materials. This is essential to ensure that the learning process remains engaging, prevents student boredom, and fosters enjoyable learning experiences. In addition to delivering content, teachers also carry the responsibility of being instructional designers who create effective and contextual learning plans.

Furthermore, IPAS learning plays a crucial role in helping students develop critical thinking skills, communicate their ideas, and build problem-solving abilities for social issues. On the other hand, the introduction of natural science concepts through IPAS also supports the development of students' cognitive abilities, particularly in connecting knowledge with real-life phenomena.

IPAS is a subject that studies living and non-living things in the universe and their interactions, as well as examining human life both as individuals and as social beings who interact with their environment. Fundamentally, the goal of IPAS education is to develop students to be sensitive to social problems occurring in society, to have a positive mental attitude toward correcting all forms of inequality, and to teach them to be more skilled in solving problems both personally and within the community.

IPAS learning has become a unique feature of the current *Merdeka Curriculum*. In this curriculum, natural science is integrated with social science to form IPAS. The aim is to enable students to understand their environment, including both natural and social phenomena. This

change in curriculum inevitably impacts teachers in implementing the integration of science and social science learning through IPAS. In the *Merdeka Curriculum*, teachers are expected to play a role in identifying each student's potential, interests, and learning styles (Ramadhan, 2024).

According to Tafonao (2018), learning media is useful in supporting quality teaching and learning activities and can help create a more conducive and enjoyable atmosphere. Sholeh (2019) states that the role of learning media is to establish an effective learning system, in which teachers are required to innovate in delivering material so that students can stimulate their thinking and increase their interest in learning. The improvement of learning media must be carried out consistently. One of the challenges for teachers is how to create media that is practical, easy to use in education, and, of course, suited to the characteristics of the students.

The use of media that aligns with the situation and conditions in the classroom can help minimize the time needed by teachers to deliver learning content. This is in line with the views of Jannah and Sukini (2018), who argue that learning media plays a significant role in the student learning process. It can make lessons more engaging, thereby increasing students' motivation to learn. It also helps clarify the meaning of teaching materials, making them easier to understand and thus enabling students to better achieve learning objectives. Moreover, the use of varied teaching methods—beyond just verbal explanation—can prevent student boredom and reduce teacher fatigue. Additionally, learning media encourages students to engage in more active learning, not just by listening but also through observing, demonstrating, showcasing, and other interactive activities (Agung, etc, 2023).

Based on the initial observations conducted by the researcher at SDN 2 Meurandeh, several issues were identified related to students' learning outcomes in IPAS, particularly in the topic "*Forces Around Us.*" These issues were evident from students' generally low academic performance, which was largely due to the teacher's reliance on textbooks and a lack of innovation in using learning media. As a result, students tended to be passive, and the learning process became less engaging. The lack of adequate learning media to support the teaching and learning process further hindered students' ability to fully understand the concepts or subject matter, ultimately affecting their IPAS achievement scores. Additionally, students were often observed to be unfocused during lessons, frequently distracted by their own activities, and not paying attention to the teacher's explanations. Consequently, when the teacher assigned tasks, students appeared confused and unable to complete the assignments effectively.

Therefore, the use of appropriate teaching media can enhance students' understanding, especially when the media allows them to be directly involved and actively engaged in the learning process. In light of this, the researcher seeks to explore the use of a specific learning medium in this study—namely, the implementation of a *Pop-Up Book* to investigate its effect on the learning outcomes of fourth-grade students at SD Negeri 2 Meurandeh. The study offers a practical and innovative approach to address students' low engagement and limited understanding of concepts by introducing Pop-Up Book media as a visual, interactive, and student-centered learning tool.

The novelty of this research lies in the integration of Pop-Up Book media within the IPAS learning framework**,** which has rarely been applied in the context of elementary education, especially at SD Negeri 2 Meurandeh. Unlike conventional teaching methods that rely heavily on textbooks and teacher explanations, this study emphasizes experiential and participatory learning **t**hrough the use of tangible, three-dimensional media. By doing so, it

not only enhances students' conceptual understanding of physical phenomena such as forces but also increases motivation, focus, and active involvement during the learning process.

Furthermore, this study provides empirical evidence of how innovative learning media can improve the quality of IPAS instruction in primary schools. The findings are expected to serve as a reference for teachers and educational practitioners in developing creative, interactive, and engaging learning strategies that align with the principles of the Kurikulum Merdeka**,** which encourages meaningful and student-centered learning experiences.

METHODS

Type of Research

The type of research used in this study is Classroom Action Research (CAR**)**. According to Arikunto (2015), classroom action research is a study carried out through careful observation of learning activities in the form of deliberate actions that take place collectively in the classroom. This method aims to improve the quality of the learning process and outcomes through systematic reflection and evaluation.

Research Design

This study was designed as collaborative action research, in which the researcher worked together with the classroom teacher throughout all stages of the research process. The collaboration included planning, implementing actions, observing learning activities, collecting data, analyzing results, and reflecting on findings for improvement. The CAR design followed the cyclical model proposed by Kemmis and McTaggart, consisting of four stages in each cycle:

1. Planning – preparing lesson plans, learning media (Pop-Up Book), and assessment instruments.
2. Action – implementing the planned learning activities using the Pop-Up Book as a learning medium.
3. Observation – collecting data on students' participation, engagement, and learning outcomes during the lesson.
4. Reflection – analyzing and evaluating the results to identify necessary improvements for the next cycle.

This study was conducted in two cycles, with each cycle consisting of two meetings. Each cycle aimed to observe improvements in students' learning outcomes and participation during IPAS learning activities.

Research Subjects and Setting

The study was conducted at SDN 2 Meurandeh. The subjects of the research were 20 fourth-grade students. The study took place in the IPAS learning unit focusing on the topic "*Forces Around Us.*" The selection of this topic was based on the identification of learning challenges and the need for more engaging instructional media in this area.

Data Collection Techniques

Data were collected using two main techniques there are test and documentation. The test used to measure students' understanding of the IPAS topic "*Forces Around Us.*" The tests were administered at the end of each cycle to determine learning improvement. Furthermore, **documentation** used to collect supporting data, including photographs of classroom activities, lesson plans, and student worksheets as evidence of learning implementation and engagement.

Research Instruments

The instruments used in this study included: learning outcome test to assess students' conceptual understanding; observation sheets to record student participation, focus, and activity during lessons and documentation tools such as a camera and field notes to record classroom activities.

Data Analysis Technique

The data collected were analyzed using quantitative descriptive analysis. Students' test scores were tabulated and compared between cycles to determine the improvement in learning outcomes following the implementation of Pop-Up Book media. The percentage of student mastery was calculated for each cycle to evaluate the effectiveness of the intervention.

The improvement in learning outcomes was determined by comparing the average scores and mastery percentages from Cycle I and Cycle II. An increase in these indicators was interpreted as evidence of the positive impact of Pop-Up Book media on students' engagement and understanding in IPAS learning.

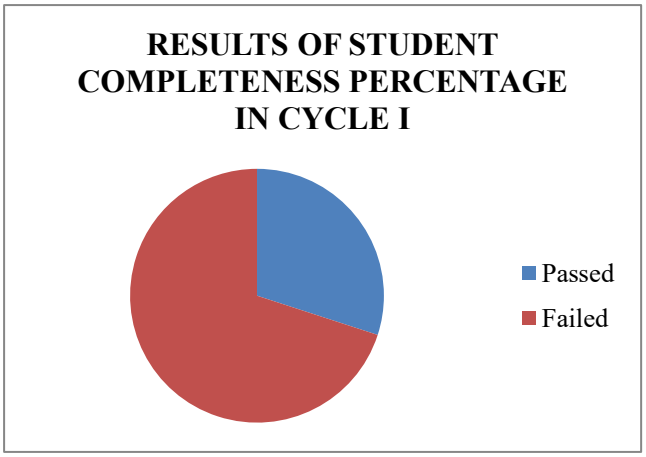
RESULTS AND DISCUSSION

Cycle I

During the learning process, the researcher acted as the teacher. Observations were conducted collaboratively by both the researcher and the classroom teacher, who also served as a collaborator in this study. The results of the observations regarding the activities of both the researcher and students during the learning process were analyzed based on the average percentage score of the implementation of the *Pop-Up Book* media to improve students' learning outcomes in IPAS (Integrated Science and Social Studies).

Based on the evaluation results using multiple-choice tests given at the end of Cycle I, data showed that out of 20 students, only 6 students (30%) achieved the learning mastery criterion with a score of 75 or above. Meanwhile, 14 students (70%) scored below 75, indicating that they did not meet the minimum mastery threshold commonly applied in classroom action research. The highest score achieved was 90, while the lowest was 60, resulting in a class average of 72.

Therefore, these results indicate that learning mastery has not been achieved, as the percentage of students who met the mastery criterion is still below the minimum threshold of 75% commonly used in classroom action research. These findings are in line with observational data, which revealed that most students still had difficulty accurately understanding the concept of frictional force. Consequently, improvements will be made in Cycle II through direct experimentation activities, more specific visualizations, and group mentoring to significantly increase student learning mastery.



Picture 1. Percentage of completion of cycle I

Based on the observations, evaluations, and learning activities conducted over four meetings in Cycle I, it can be concluded that the use of *Pop-Up Book* media had a positive effect on student engagement and learning outcomes in the topic *Forces Around Us*. Most students appeared more enthusiastic, actively responded to questions, and could identify and differentiate types of forces such as push, pull, gravity, and magnetic forces.

However, several shortcomings required improvement for Cycle II, namely:

1. Students still found it difficult to understand frictional force. Some students could not distinguish between pushing and frictional forces, and had not yet grasped that friction arises when two surfaces are in contact and oppose motion.
2. The lack of exploratory activities and real-life examples related to frictional force limited students' comprehensive understanding.

To address these issues, improvements in Cycle II included hands-on experiments comparing friction on rough and smooth surfaces, as well as contextual visual presentations using the *Pop-Up Book*. This approach was expected to help students understand friction more concretely and improve learning outcomes in the indicators not yet achieved in Cycle I.

Cycle II

Observation results from the researcher and collaborator in Cycle II showed an improvement in students' IPAS learning outcomes, measured through a post-test. During the second cycle, student learning outcomes showed a significant improvement. Data indicated that all 20 students successfully met the mastery threshold. The class average score in Cycle II increased to 89, suggesting that most students had understood the material very well. The use of *Pop-Up Book* media proved effective in helping students comprehend the topic *Forces Around Us*. The media provided an engaging and interactive learning experience, which increased students' attention, motivation, and retention of the presented material.

This improvement also reflected the success of the learning strategies applied during the second cycle — including better planning, implementation, and evaluation. Therefore, it can be concluded that the use of *Pop-Up Book* media positively contributed to enhancing students' learning outcomes in IPAS.

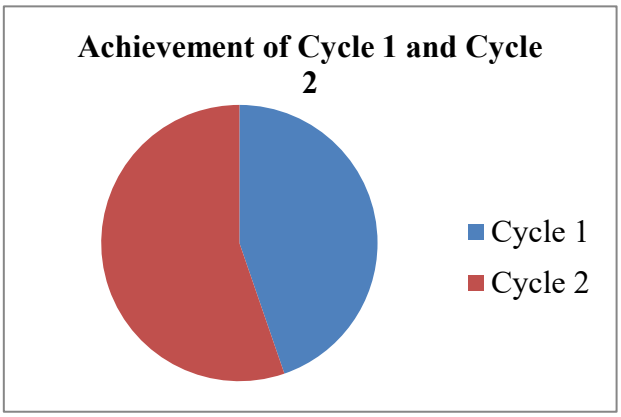
Based on the results obtained in the second cycle, there was a significant improvement in students' learning outcomes in the IPAS subject, especially on the topic "*Forces Around Us.*" Out of 20 students, all achieved the minimum mastery

criteria, and the class average score reached 89%. This shows that the majority of students had a good understanding of the material and were able to apply their knowledge during learning activities.

The improvement indicates that the learning strategies implemented in Cycle II were more effective compared to Cycle I. While several students did not achieve mastery in the first cycle, in the second cycle, all students succeeded in meeting the set learning objectives. The pop-up book media proved effective in capturing students' attention and making it easier for them to understand the concept of force through visualization and direct exploration. Furthermore, students were able to clearly differentiate between frictional force, pushing force, and other types of forces.

The more active and student-centered learning approach also contributed to the improvement in learning outcomes. This reflection serves as evidence that a learning process designed with a fun and contextual approach can significantly enhance students' comprehension. With the complete achievement of learning objectives in Cycle II, it can be concluded that IPAS learning using pop-up book media on the topic "*Forces Around Us*" was successful and is suitable for broader implementation in classroom learning.

The following is a comparison of mastery percentage between Cycle I and Cycle II:



Picture 2. Comparison of Achievement of Cycle 1 and Cycle 2

The success of the learning process was clearly evident through the improvement in students' learning outcomes in the IPAS subject, particularly on the topic "*Forces Around Us.*" In the first cycle, the students' mastery percentage reached only 72%, indicating that many students still had difficulty understanding the material. However, after improving the teaching strategy and incorporating a more interactive and engaging Pop-Up Book media, a significant increase was observed in the second cycle, with student mastery rising to 89%.

This 17% increase reflects the success of a learning process that not only focused on content delivery but also considered the selection of media that suits students' characteristics. These findings demonstrate that appropriate learning approaches can effectively improve students' understanding and engagement, particularly in IPAS lesson.

Discussion

The results from both cycles showed a significant improvement in students' academic performance. In Cycle I, the student mastery percentage was only 72%, meaning that several students had not yet achieved the Minimum Mastery Criteria (KKM). This indicates that the learning approach in Cycle I was not yet fully effective in facilitating understanding of the topic *Forces Around Us*.

Observations revealed that many students still struggled with the concept of frictional force, both theoretically and in real-life contexts. The limited use of visual aids and insufficient student engagement contributed to this difficulty. Thus, Cycle II focused on enhancing content delivery, instructional strategies, and the use of interactive media.

The implementation of the *Pop-Up Book* in Cycle II helped visualize force concepts more concretely and attractively. As a result, students' interest and engagement increased, making it easier for them to distinguish between frictional, pushing, and other types of forces. Improvements were made by:

- Using *Pop-Up Book* as a concrete and engaging visual aid;
- Conducting simple experiments to demonstrate friction in daily life;
- Providing group mentoring to assist students with difficulties;
- Creating an interactive and enjoyable classroom atmosphere.

As a result, the mastery percentage in Cycle II rose to 89%. All students achieved scores above the minimum standard, and the class average increased significantly. The 17% improvement from Cycle I to Cycle II indicates that the proper use of instructional media and interactive approaches had a strong impact on student learning outcomes.

These findings align with research by Asiyah,et all; Khadijah, et all; Masna (2014, 2021, 2015) which found that *Pop-Up Book* media made learning more enjoyable and easier to understand due to its realistic visualizations. Similar results were observed in this study, where students demonstrated high enthusiasm, actively asked questions, and answered correctly due to clear visual representations.

Masrurah et all; Ningrum et all; Nurhidayah et all; (2018, 2021, 2022) also noted that *Pop-Up Book* media fostered student independence, encouraging them to become active learners rather than passive recipients of information. This was also evident in Cycle II of the present study, as students showed greater initiative, participated actively in group work, and learned through visual exploration.

Although challenges such as time-consuming media preparation and material costs were encountered, these were mitigated through strategies such as reusing materials and involving students in maintaining media resources.

In conclusion, *Pop-Up Book* media functioned not only as a visual aid but also as a tool to promote independence, critical thinking, and active participation in IPAS learning. When integrated with appropriate instructional strategies, it can significantly improve students' cognitive and affective learning outcomes.``

CONCLUSION

Based on the findings from both research cycles, it can be concluded that the use of Pop-Up Book media in IPAS learning effectively improved students' learning outcomes on the topic *"Forces Around Us"* in SDN 2 Meurandeh Langsa. The visual and interactive nature of the media helped students understand abstract scientific concepts and increased their engagement and enthusiasm. Quantitatively, students' average scores improved from 72 to 89, and mastery increased from 72% to 89%**,** indicating a significant enhancement in learning achievement. Qualitatively, students became more active, confident, and collaborative, showing positive

growth in cognitive, affective, and psychomotor domains. Overall, the Pop-Up Book proved to be an effective and innovative learning medium that supports meaningful, joyful, and student-centered learning in accordance with the principles of the Kurikulum Merdeka**.**

REFERENCES

Agung, K., Aqis, P., Amanatul, U., Febriyanti, A., Alvin, H., & Prayogo, M. S. (2023). Pengaruh media Pop Up Book pembelajaran IPA tentang invertebrata kelas IV SDN. *Journal Cerdas Mahasiswa Fakultas Tarbiyah dan Keguruan UIN IB Padang, 2*(3), 64–75.

Arikunto, S. (2015). *Penelitian Tindakan Kelas Edisi Revisi*. Bumi Aksara

Asiyah, N., Fauzi, M., & Produk, J. D. (2014). Perancangan buku Pop Up sebagai media pendidikan di organisasi WWF Indonesia. *Pendidikan di Organisasi WWF.* https://www.academia.edu/download/49140084/714-1553-1-SM.pdf

Jannah, S. N., & Sukidi, M. (2018). Pengaruh penggunaan media Pop Up Book terhadap keterampilan menulis deskripsi siswa kelas IV SDN Babatan 1 Surabaya. *JPGSD: Jurnal Penelitian Pendidikan Guru Sekolah Dasar, 6*(10), 1811–1821.

Khadijah, A. S., Hasan, K., & Passinggi, Y. S. (2021). Pengaruh penggunaan media Pop Up Book terhadap hasil belajar siswa sekolah dasar kelas empat di Kabupaten Pinrang. *Pinisi Journal of Education, 1*(2), 200–209.

Masna, A. A. (2015). Pengembangan bahan ajar Pop-Up mata pelajaran IPA untuk anak tunarungu kelas IV SDLB B di Yogyakarta. *Universitas Negeri Yogyakarta, 4*(4).

Masturah, E. D., Mahadewi, L. P. P., & lainnya. (2018). Pengembangan media pembelajaran Pop-Up Book pada mata pelajaran IPA kelas III sekolah dasar. *Jurnal Edutech Universitas Pendidikan Ganesha, 6*(2), 212–221. https://ejournal.undiksha.ac.id/index.php/JEU/article/view/20294

Ningrum, I. L., Hafidah, R., & Dewi, N. K. (2021). Pengaruh media Lift the Flap Book terhadap keterampilan menyimak anak usia 5–6 tahun. *Jurnal Kumara Cendekia, 9*(1), 20–30. https://jurnal.uns.ac.id/kumara

Nurhidayah, N. U., Supriatna, A. R., & Kurnianti, E. M. (2022). Pengembangan media pembelajaran MAJINATIF (Majalah Pintar Edukatif) berbantuan Flipbook Maker pada materi sistem peredaran darah kelas IV SD. *Jurnal Pendidikan Tambusai, 6*(1), 2388–2396.

Ramadhan, R., Rezki, B., & Prasetyo, T. (2024). Pembelajaran IPAS pada proses belajar sekolah. *Jurnal Pendidikan, 3*, 7457–7464.

Sholeh, M. (2019). Pengembangan media Pop-Up Book Berbasis Budaya Lokal Keberagaman Budaya Bangsaku Siswa Kelas IV Sekolah Dasar. *Jurnal Gentala Pendidikan Dasar, 4*(1), 138–150. https://doi.org/10.22437/gentala.v4i1.6979

Suhelayanti, S. Z., & Rahmawati, I. (2023). *Pembelajaran Ilmu Pengetahuan Alam Sosial (IPAS).* Yayasan Kita Menulis.

Tafonao, T. (2018). Peranan media pembelajaran dalam meningkatkan minat belajar mahasiswa. *Jurnal Komunikasi Pendidikan, 2*(2), 103. https://doi.org/10.32585/jkp.v2i2.113