



Analysis of the Need for Pop Up Book Learning Media in Science and Science Lessons for Class V Students of SDN 2 Tanggung Blitar City

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Keywords

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Abstract

This research aims to analyze needs of learning media in class V and as an innovation in learning media for cultural heritage material so that it can attract students' interest in learning. The problems found are students have difficulty understanding cultural heritage material because it presents a lot of reading material, in learning process teachers only use thematic books without additional books, and teachers have not linked realistic examples related to cultural heritage in learning. The study use qualitative by collecting data from interviews, questionnaires and observation techniques. The results of analysis conducted 81% of students need learning media. These results indicate that fifth grade students really need learning media as learning support. Based on this, learning media must integrate technology that can attract the attention of students by being equipped with text, 2D and 3D images, and interactive evaluations and encourage student interest in understanding cultural heritage IPAS material.

1. Introduction

Teachers are the main milestone in the world of education. Teachers play an important role in teaching, educating and guiding students. He plays a major role and has a strategic position in the world of education. Through the hard work and sincere work of a teacher, the character of the nation will be formed. All the teaching and application done for students while at school will determine how the future of the nation will be (Almujtaba, 2022). That is why competent teachers are needed in advancing education, especially in Indonesia (Rahayu et al., n.d.). The government defines education in Law No. 20 of 2003 related to the National Education System, precisely Article 1 Paragraph (1): "Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and state". Based on Ki Hadjar Dewantara, education is the process of advancing the lives of children by growing all their potential so that they can live independently and responsibly as part of society. This statement is in accordance with the development of education in Indonesia where Indonesia has implemented an Independent Curriculum. A curriculum that is oriented towards the students themselves. Students are given space for expression in the learning process. The Merdeka Curriculum states that the concept of education is independent learning by integrating literacy, skills, knowledge skills, along with an attitude of mastery of technology (Mujab et al., 2022).

The Merdeka Curriculum focuses on student-centered learning, in line with Ki Hadjar Dewantara's educational philosophy which places students as the main subject of the learning process. In the Merdeka Curriculum, students are free to choose learning paths according to their interests, talents, needs, and are encouraged to become independent, active, and creative learners. This reflects the concept of "Tut Wuri Handayani" from Ki Hadjar Dewantara, where educators act as facilitators who support and encourage students from behind, so that they can develop according to their potential (Sutrisno & Zuchdi, 2023). This approach ensures that the educational process not only hones students' intellectual abilities but also pays attention to their emotional and social development. Through the Merdeka Curriculum, learning and knowledge become one of the main principles of the Merdeka Curriculum, which focuses on developing students' competencies and

character, not just academic achievement. By promoting a more contextual and participatory approach, it is expected that students can be more actively involved in the learning process, develop creativity, and build the skills needed to face future challenges. Through this curriculum, it is hoped that there will be a paradigm shift in education in Indonesia, from a rigid system to a more adaptive and inclusive system, so as to give birth to a generation that is not only academically intelligent, but also has the ability to think critically, collaboratively, and have character.

In the IPAS subject, students study cultural and social elements, events, issues, facts, and concepts that exist in society. In IPAS students are encouraged to interact naturally through fun and meaningful learning. This subject plays an important role in shaping students' basic knowledge, how students act and respond to issues in the social environment, and developing student character according to social values and norms (Selfi et al., 2024). Learning Natural and Social Sciences (IPAS) in elementary schools (SD) aims to introduce students to the basic concepts of science and understand the surrounding environment. The objectives in IPAS learning are to develop a basic understanding of the natural and social environment, encourage students' curiosity and ability to ask questions, develop observation, experimentation, and analysis skills. In the context of Merdeka Curriculum, IPAS learning can be more flexible, adjusting to students' interests and needs. Schools can design activities that are more relevant to their surrounding environment. With the right approach, IPAS learning can create a strong foundation for students to understand and appreciate science and their social environment.

Effective and enjoyable learning can be achieved through the utilization of appropriate learning media. Learning media includes all forms of facilities that function as a link between the teacher conveying information and students receiving information, in order to motivate and support the learning process comprehensively and meaningfully. There are five important aspects in the concept of learning media. First, the media serves as an introduction to the material in learning. Second, the media becomes a source of learning for students. Third, the media plays a role in stimulating student motivation to learn. Fourth, the media helps achieve deeper and more meaningful learning outcomes. Fifth, the media serves to improve students' skills. The collaboration of these five aspects can contribute to the successful achievement of the expected learning objectives. The role of learning media is crucial in learning, because it can increase motivation and interest in learning. In general, the function of learning media according to (Hasan, 2021) is a means of conveying information, preventing learning obstacles, driving motivation, and optimizing learning. Aqib (2010: 58) said that learning media is something to convey messages, stimulate feelings, thoughts, and attention of students, as a result, it can facilitate their learning. The use of media makes learning more innovative and interactive, thus encouraging increased student motivation. In addition, the media allows students to be active, so that they are not only passive listeners but participate in various activities provided. Thus, learning media enriches students' learning experience and helps them understand the material better.

Based on the definition, it is concluded that learning media is an intermediary tool to help teachers deliver material to students so that it is easy to understand. The main goal is for students to achieve scores above the KKTP. However, many students still score below the KKTP because they feel the IPAS material is too much and difficult to memorize. In addition, the teaching method is still dominated by lectures and the lack of variety in delivering the material by the teacher makes students feel bored, which ultimately has an impact on their low scores (Atikasari & Desstya, 2022).

The results of observations of learning in class V when delivering IPAS material, especially on the material of tangible and intangible cultural heritage, teachers often use abstract approaches that are difficult for students who think concretely. As a result, students are bored and unfocused, which results in low student scores below the KKM (70). Learning media that is appropriate for the age level of students should make learning more interesting and effective. Facing the reality that does not match the field conditions, there appears to be a mismatch between the demands of IPAS competencies and the availability of learning media. So, it is necessary to develop innovative learning media such as popup books to help grade V students understand the material of tangible and intangible cultural heritage (Antika & Syari, 2022). This media is expected to be used by teachers and students to improve understanding effectively. According to the background, this article is to analyze the needs of popup book learning media in IPAS subjects in grade V.

2. Method

This research method is research and development (R&D). The model uses ASSURE. The ASSURE model consists of 6 stages that are carried out in sequence (Iskandar & Wahab, 2023). The research used qualitative and quantitative methods. Qualitative data through interviews, needs analysis questionnaires, and observations to obtain descriptive information (Adlini et al., 2022). Meanwhile, quantitative data is used to describe variables in the form of numbers to strengthen conclusions. This research analyzes the needs of teaching materials, with a focus on IPAS subjects.

The research subjects were all grade V students, namely 22 students. The research explored information through a questionnaire analyzing the use of Pop Up Book as an effective learning media. Filling out the questionnaire to find out the problems and needs of students on Pop Up Book media as learning support. The analysis questionnaire lattice given to students is presented in the following table:

Table 1. Needs Analysis Questionnaire Instrument Grid

No.	Aspects	Indicator
1.	Students perception of pop up book learning media	I am happy with learning using <i>Pop-Up Books</i> I already knew the <i>Pop-Up Book</i> learning media before I like the innovation of learning media with <i>Pop-Up Books</i> in classroom learning I have used <i>Pop-Up Book</i> learning media before
2.	Students perception of cultural heritage materials	I enjoy working on material problems with <i>Pop-Up Book learning media</i> I can understand the learning material more easily through <i>the Pop-Up Book</i> I want to learn more about the material by using the <i>Pop-Up Book media</i>
3.	Student characteristics	I am happy with the <i>Pop-Up Book learning media</i> because it is more interactive I can understand the uses and benefits of <i>Pop-Up Book media</i> I am happy with <i>the Pop-Up Book</i> learning media because it is more fun

The results of the questionnaire response score were analyzed through the calculation of the average answer according to the scoring of each answer calculated through the formula according to (Yuliawati et al., 2020).

$$\% = \frac{\text{number of score obtained}}{\text{total score}} \times 100\%$$

The results of the analysis are interpreted in the form of percentages and categorized according to the criteria of the following table.

Table 3. Category of Percentage of Needs Level Analysis

No	Achievment Level (%)	Information
1	0 – 20	Not required
2	21 – 40	Less need
3	41 – 60	Half need
4	61 – 90	Most require
5	81 – 100	Urgently needed

Sumber: Modifications from (Apriliani, Pawestri & Radia, Hoesein, 2020)

3. Results and Discussion

The results of the research were observations, interviews, and questionnaires for the feasibility analysis of Pop Up Book media. Interview activities were carried out in class V together with homeroom teachers and students with the aim of finding out how the condition of students and

student problems during social studies learning. Observation to pay attention to how students are doing, to see learning by teachers, and to dig deeper information during learning in the classroom. Furthermore, this media feasibility analysis questionnaire is to find out the level of student needs for Pop Up Book media in science and science learning.

Based on the results of interviews with homeroom teachers with the number of students in class V, there were 22 students. The teacher said that learning will indeed attract and arouse the enthusiasm of students if they use learning media, especially science and science subjects that do need media. The media is very closely related, especially to cultural-related materials, for example, the introduction of tangible and intangible cultural heritage. The learning process will not be optimal if the material only relies on textbooks. Teachers need media to help students understand the material from various subjects. Currently, learning only relies on thematic books without supporting teaching materials that explain material about Indonesia's cultural heritage. In addition, teachers also stated that learning has not provided a real example of the variety of Indonesian cultural heritage that is so diverse.

The observation results showed that during social studies learning, students tended to be less excited, unfocused, and sleepy due to boredom listening to lectures from teachers. The method used is only lectures and memorization. Although some students have good reading skills, there are still students who have difficulty reading, which becomes an obstacle in the learning process and causes a sense of saturation. In addition, teachers only focus on thematic books and whiteboards, without using other variations of methods.

This problem is reinforced by the results of interviews related to school facilities. Teachers admit that they have not taken advantage of facilities such as LCD projectors and laptops, because they feel more comfortable using books. However, the thematic books used have limited practice questions, so teachers must provide additional questions to train students' abilities and understanding.

The results of the analysis of the Pop Up Book media feasibility questionnaire were filled with 22 grade V students which were presented as follows.

Table 4. Needs Analysis Questionnaire Grid

No	Indicator	Percentage (%)	Average Percentage	Categories of Analysis Results
1	Students perception of pop up book learning media	87	88	urgently require
2	Students perception of cultural heritage materials	89		
3	Student characteristics	87		

Based on the results of class V students, namely 22 people, it was found that some students felt that they did not know the Pop Up Book learning media. For them, the media still feels foreign and rarely used in daily learning activities. Media needs analysis questionnaire data shows that 59% or 13 out of 22 students admitted that they were not familiar with the Pop Up Book. The use of media now needs to be avoided again so that students can easily understand the material. Current learning media tends to be less interesting as a result of which students are less interested in learning (Anisa & S, 2023) Then the lack of teachers' ability to make learning media according to the demands of the times (Muslimin, 2023) This shows most students do not have enough understanding of pop up books.

In the results of the interview for cultural heritage material, students felt bored, not interested in cultural heritage material because it was classified as History material where there were many reading materials. This causes students to lack understanding of the material, resulting in low knowledge of Indonesian cultural heritage. According to (Saleh, 2021) history teaching, especially cultural heritage materials, is able to provide historical insight and be able to interpret the concept

of the importance of the national spirit. In the context of teaching IPAS in elementary schools, cultural heritage materials are not only providing knowledge, but are focused on the importance of meaningful and relevant cultural understanding to students' lives. Observations also show that students are often passive during learning. When the teacher asks a question about the type of cultural heritage, only 1 or 2 students answer. This happens because teaching is still dominant using the lecture method, as a result many students feel bored during the teacher's explanation.

Students have difficulty understanding cultural heritage materials. The difficulty factor is that the material is presented with written text only without any other accompanying media. Thus causing students to get bored to learn cultural heritage materials. The observation results show that teachers' teaching in learning social science and cultural heritage materials often uses memorization methods. Through students' unequal memory abilities, students tend to only memorize without deep understanding, so they often forget important information about cultural heritage. In line with the statement (Suci et al., 2023) another factor exists in teachers, where teachers only use theme book learning resources, so that the deepening of materials and assignments is limited, as well as limited time to create learning media. It also affects students doing assessments, students answer questions inappropriately and in a hurry when approaching break time as a result of which many answers are wrong.

The teacher explained that in learning, only thematic books are used without additional teaching materials. Observations show that during learning, teachers focus on thematic books and whiteboards, resulting in students being less interested in listening to the teacher's explanations, and even some look unenthusiastic. In addition, the limited information in thematic books and the presentation of *full-text* material make it difficult for students to understand the material. During learning, teachers often carry out conventional learning, namely teacher-centered and lack of student activity (Magdalena et al., 2020) This is reinforced by the results of the needs analysis questionnaire, which shows that 81% that 18 out of 22 students find it difficult to understand reading material and need learning media. Another difficulty observed is that some students in grade V are not fluent in reading, resulting in a decrease in enthusiasm for learning. According to (Danny Soesilo et al., 2024) learning difficulties have a significant impact, especially on students' ability to succeed in the academic field. Teachers also admit that they have not associated real examples that are relevant in learning.

The teacher admitted that in the learning activities, he has not associated realistic examples around related to local cultural heritage. Learning is only based on the information text in the handbook. These difficulties certainly have an impact on students related to understanding cultural heritage materials. In the context of cultural heritage, this approach shows the importance of integrating local culture into learning to enrich students' understanding. According to (Marini et al., 2023) by providing relevant examples related to life and culture, students are not only easier to understand academic materials, but also better able to appreciate and preserve their cultural heritage. An approach that links learning with local culture will help students recognize the values of the surrounding culture, making the learning process more meaningful and interesting (Fatmi & Fauzan, 2022)

In the context of cultural heritage, this shows the importance of using a variety of learning sources and methods to support students' understanding, especially when learning concepts that are rich in cultural and historical value. The limitations of learning resources can affect students' ability to appreciate and understand complex cultural heritage. Thus, there needs to be an addition of relevant and realistic teaching materials to help students relate the material they are learning to a broader cultural context.

In addition, according to (Apriliani, Pawestri & Radia, Hoesein, 2020) learning also requires innovative and interactive learning media to support learning activities and can attract students' enthusiasm for learning. One of the learning media that presents text and images in 3D is the pop up book, where students can learn efficiently and effectively because the pop up book of cultural heritage is designed as attractive as possible and according to the development of the times (Ardhyantama et al., 2024) The observation results showed that all students learned at home with support from parents, siblings, or through tutoring. Thus, pop up book media about cultural heritage

can be an effective tool for teachers to explain the material and improve students' understanding of the topic.

The results of the needs analysis questionnaire showed that 88% of grade V students needed learning media, in accordance with the category of urgently needed (Salasiah et al., 2020) These findings emphasize the need for innovation in learning media that integrate technology to attract students' attention, equipped with text, 2D and 3D images, and interactive evaluations. The material in the media should also relate real examples to the local culture. Thus, learning media is expected to help teachers and students understand abstract cultural heritage materials to be more real, as well as support the achievement of learning goals.

Media Pop Up Book

Media, from the Latin "medius" means intermediary, is generally understood as a tool in learning. According to (Apriliani, Pawestri & Radia, Hoesein, 2020) defines media as a means of communication between the sender and receiver of the message. (Suhendar & Mustofa, 2017) added that media includes something that can channel messages and stimulate students' feelings, thoughts, and interests in the learning process.

Media in learning can be used in two ways: as teaching aids for teachers and student media. In accordance (Suhendar & Mustofa, 2017) learning is an intermediary conveying messages from sources to recipients with teaching objectives. Thus, learning media is a tool for teachers to convey material to students, as a result learning is more effective and efficient and the goal is achieved. So, learning media plays an important role in the means of conveying knowledge.

Pop up book is a graphic media that can be an alternative to attract reading interest, because the visualization of the story is more interesting. Setiyaningrum states that pop up books have 3-dimensional elements that move when the page is opened, thus providing interesting visuals and helping to increase students' understanding of the material. With a three-dimensional display, pop up books can increase students' interest in reading. Another uniqueness is the surprise contained on each page, which creates a sense of awe when the page is opened, making it different from ordinary picture storybooks (Sceisarriya & Detara Gandes Pawestri, 2023).

Pop up book is the art of paper forming a 3-dimensional structure when opened and 2-dimensional when closed. In addition to its attractive appearance, the movement element makes readers happy. The advantage lies in the unique experience provided, where learners can see, open, and interact directly, making it easier for them to remember the material (Jannah et al., 2023).

How Pop-up Book Works

Pop-up books work by closing, opening, and rotating mechanisms that produce movement when the pages are opened. Pop up artists design various folds so that pop up elements can appear, open, and unfold when the page is opened, but fold back when the book is closed. Thus, a pop up book is a 3-dimensional creation of paper cutouts and folds that appear when opened and fold when closed.

Advantages of Pop-up Book

The advantages of pop up book media according to (Putri et al., 2022) are:

1. Interesting story visualization with images that move when the page is opened.
2. The surprise on each page adds to the reader's curiosity.
3. Reinforces the message of the story.
4. The visual dimension makes the story feel more real.
5. This media makes learning effective, interactive and memorable.
6. Pop ups provide feedback in learning.
7. Helps students document and understand the environment.
8. Provides new experiences related to daily activities.
9. Entertaining and engaging students' attention.
10. Interactive parts such as games increase student participation

3.1. Conclusion

The problem in class V of the science lesson of Indonesian cultural heritage material is that some students do not know and are familiar with the Pop Up Book learning media. Students have difficulty understanding what forms of Indonesian cultural heritage are both tangible and intangible so that this problem causes students to dislike the use of media and find it difficult if they have to add questions in the Pop Up Book. Some students also don't like learning using interactive media. In learning, teachers do use a lot of LKS books and are in accordance with the characteristics of the pictures in the LKS. Conventional teaching methods, such as lectures and memorization, make students passive, unfocused, and often sleepy due to boredom listening to teachers. During the learning process, teachers rely on thematic books and whiteboards, causing students to feel lazy quickly. In addition, some students also showed low reading ability. Based on the needs analysis questionnaire, 88% of students really need learning media as a learning support. Learning media should integrate technology to attract students' attention, complemented by text, 2D and 3D images, and interactive evaluations.

Suggestions and inputs that can be given and taken into consideration are the development of digital-based learning media. The Cultural Heritage Pop up Book learning media, equipped with interactive evaluations that relate real examples to the local culture. The learning media is expected to help students understand cultural heritage materials and can be used independently without time limitations.

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