Pop-Up Book Media with Balinese Cultural Nuances as Picture Background to Increase Interest in Learning about Solar System Topics

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A B S T R A K

Permasalahan di lapangan adalah kurangnya inovasi guru dalam mengembangkan media. Hal tersebut berimplikasi pada media yang monoton berdampak pada rendahnya hasil belajar siswa. Penelitian ini bertujuan untuk mengembangkan media pop-up dengan budaya Bali dengan topik tata surya. Jenis penelitian ini merupakan pengembangan dari model ADDIE. Subjek penelitian ini adalah dua orang ahli media, dua orang guru, dan tiga orang siswa kelas VI SD. Metode pengumpulan data yang digunakan dalam penelitian ini adalah kuesioner. Teknik analisis data yang digunakan adalah analisis deskriptif kualitatif dan kuantitatif serta statistik inferensial. Hasil penelitian adalah penilaian ahli media yaitu 4,25 (sangat baik). Hasil respon guru dan siswa adalah 5,00 (sangat baik). Hasil uji hipotesis adalah 0,000 < 0,05, sehingga terdapat perbedaan hasil minat belajar siswa kelas VI SD setelah pembelajaran menggunakan media pop-up book. Disimpulkan bahwa media pop-up book bernuansa budaya Bali sebagai background image efektif meningkatkan minat belajar siswa pada mata pelajaran IPA kelas VI SD.

A B S T R A C T

The problem in the field is the lack of teacher innovation in developing media. It has implications for monotonous media to impact low student learning outcomes. This study aims to develop pop-up media with Balinese culture on the topic of the solar system. This type of research is the development of the ADDIE model. The research subjects were two media experts, two teachers, and three sixth-grade elementary school students. The data collection method used in this study is a questionnaire. The data analysis techniques are descriptive qualitative and quantitative analysis and inferential statistics. The study's results are the assessment of media experts, namely 4.25 (very good). The results of teacher and student responses are 5.00 (very good). The hypothesis test results are 0.000 < 0.05, so there are differences in the results of interest in learning for sixth-grade elementary school students after learning to use pop-up book media. It was concluded that the pop-up book media with Balinese cultural nuances as the background image effectively increased student interest in learning science subjects for sixth-grade elementary school students.

1. INTRODUCTION

Indonesian education must be carried out optimally to improve students' skills and to understand when they graduate. Superior quality will be able to compete in the global world so that the Indonesian nation will become advanced (Suandewi et al., 2019; Zamjani, 2019). It causes education to realize all human potential to create superior and highly competitive human beings (Setiawan & Wilujeng, 2016; Zulfa et al., 2017). Education can influence students to adapt to the environment and direct them to be better, especially in behavior. Currently, education is always changing depending on the progress of science and technology, so innovation in learning is needed (Arkorful et al., 2021; Citrohn & Svensson, 2020). This learning innovation is one of the brightest ways to improve students' abilities and overcome problems related to education (MacLachlan et al., 2018; Nordlöf et al., 2019). In creating effective learning activities, the teacher must first identify students' characteristics in the class (Angraini, 2017; Hanifah et al., 2019). Identifying early behavior in learning activities is very important so that teachers can recognize the abilities of each individual so that it can be used as a guide in developing and determining appropriate

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learning strategies (Fadilla & Purwaningrum, 2021; Riwu et al., 2018). It has also been expressed in Piaget's theory regarding cognitive development, which is an ongoing process that must be considered so that learning can run smoothly (Bujuri, 2018; Kaplan, 2018). In addition, a person's learning activities also have different cognitive characteristics. Moreover, elementary school children are included in the concrete operational stage, so they need concrete objects (Kenedi et al., 2019; Puspitarini & Hanif, 2019). It causes students to need the help of objects that can represent the purpose of learning.

However, the problem that often occurs is the inability of teachers to develop media. Previous research stated that the teacher is less innovative in developing a media following the characteristics of students and learning (Pramana & Suarjana, 2019; Surata et al., 2020). Other research findings also reveal that teachers still have difficulty developing media, especially digital-based, so they tend only to use existing media (Priyanti et al., 2017; Rahayuningsih, 2020). The results of observations at SD Negeri 2 Gobleg also show that teachers only use books containing science material which are still shallow, and their explanations are still lacking. In the explanation book, the material is not equipped with pictures and only a few sentences that cause students to feel bored when reading. It is the main reason why students feel less interested in learning science and are less active in learning. In addition, the science content on the solar system material is also incomplete and limited, so students' understanding is also lacking. Learning activities do not run optimally, resulting in low student interest in learning and affecting low learning outcomes. It can be seen from the score of students who have not met the Minimum Completeness Criteria of 54%. The average value obtained by students is still very small, showing students' lack of understanding in learning. Teachers can use these learning outcomes as a reference in creating or developing a media that can increase student interest. If student interest increases automatically, student learning outcomes also increase.

The solution to increasing student interest and learning outcomes is using media. Media that can be used for science learning, especially solar system material, is a pop-up book with a background image of Balinese culture. Using cultural nuances in the media can also teach students much about culture to create a sense of student love for culture (Sutrimo et al., 2019; Winangun, 2020). Good learning media will certainly increase students' motivation and enthusiasm for learning (Dewi et al., 2022; G. Prasetyo et al., 2020). Balinese culture can be used in the form of paintings or pictures that can be used as a measuring tool in preserving Balinese culture, which can be integrated with education. This pop-up book media can give a new impression to students so that students can be motivated again when participating in learning (Hidayah et al., 2020; Karisma et al., 2020). In addition, using media can also improve students' problem-solving skills, so paying attention is very important (Wardani et al., 2017; Yuliani et al., 2020). This Balinese culture will certainly attract students' attention because students will be taught values that can build students character for the better. In addition, students can also understand the values contained in Balinese culture to create harmony. It causes the pop-up book media with Balinese cultural nuances to be superior to other media.

Previous research findings also stated that media is needed to help students understand the material and make it easier for teachers to teach (Gever et al., 2021; Illahi et al., 2018; Syawaludin et al., 2019). Other research findings reveal that pop-up book media can increase student enthusiasm and learning outcomes (Masturah et al., 2018; Oktaviarini, 2018). It is what causes the media is one element of learning that is very important to use so that learning activities become more optimal. There is no study on pop-up book media with Balinese cultural nuances for elementary school students, especially on the topic of the solar system. The advantage of this media is that this media presents Balinese culture, which will help students to learn about the good values contained in Balinese culture so that students not only understand the learning material but can also improve students character for the better. The purpose of this research is to develop a pop-up media with Balinese culture on the topic of the solar system. It is hoped that the development of this media can help students learn so that they achieve high learning outcomes and learning objectives are achieved.

2. METHOD

This type of research is the development of the ADDIE model, which includes analysis, design, development, implementation, and evaluation (Nurcholif et al., 2021). The product trial at the implementation stage uses a pre-experimental design, one shoot case study. The research subjects are two media experts. The test subjects were two teachers and three sixth graders at SD Negeri 2 Gobleg. The method used to collect data is a questionnaire. The instrument used is a rating scale. The grid is presented in Table 1 and Table 2.

Table 1. Grid of Expert and Practitioner Validation Sheets

No	Aspect	Indicator
1	Cover	Media identity.
		Cover attraction.
		The harmony of colors, text, and images on the pop-up book media.
		Compatibility of use and font size.
2	Format	The suitability of the layout of the pop-up book media.
		The suitability of the material on the pop-up book media with indicators.
		Completeness of the material/information contained in the pop-up book media.
3	Content	The content of the material in the pop-up book arouses students' curiosity.
		Ease of understanding of the language used.
4	Language	The standard language used.
		The effectiveness of the sentences used.
5	Practical	Ease of use of pop-up book media.
6	Effective	Effective use of pop-up book media.

(Ulfa & Nasryah, 2020)

Table 2. Grid of Student Response Instrument Sheets

No	Aspect	Indicator
1	Cover	The cover of the pop-up book is very attractive.
2	Format	The pop-up book media's colors, text, and images are harmonious.
	Contents	The material in the pop-up book is easy to understand.
3		The content of the material in the pop-up book arouses students' curiosity.
4	Language	The language used is easy to understand.
5	Practical	Media pop-up book is easy to use.
6	Effective	Pop-up book media is effective in increasing enthusiasm for learning.

(Ulfa & Nasryah, 2020)

The data analysis techniques are descriptive qualitative and quantitative analysis and inferential statistics. Qualitative descriptive analysis processed suggestions from experts. Quantitative descriptive analysis is used to process score data on the Pop Up Book media given by experts. Inferential statistics are used to analyze the effectiveness of the media.

3. RESULT AND DISCUSSION

Result

This study developed a Pop-Up Book Media with Balinese Cultural Nuances in the Background Image with ADDIE. First, analysis. The results of the analysis are that the teacher only uses science content books which are still shallow, and the explanations are still lacking. In the explanation book, the material is not equipped with pictures and only a few sentences that cause students to feel bored when reading. It is the cause of students feeling less interested in learning science and less active in learning. In addition, the science content on the solar system material is also incomplete and limited, so students' understanding is also lacking. Learning activities do not run optimally, resulting in low student interest in learning and affecting low learning outcomes. It can be seen from the score of students who have not met the Minimum Completeness Criteria of 54%. The average value obtained by students is still very small, showing students' lack of understanding in learning. The results of the curriculum analysis are presented in Table 3.

Table 3. Basic Competencies and Competency Achievement Indicators

Basic competencies	Indicators of Competence Achievement
Describe the solar system and the characteristics of the members of the solar system.	3.5.1 Explaining the solar system
	3.5.2 Explaining the sun as the center of the solar system
	3.5.3 Describe the characteristics of the members of the solar system

Second, design. This stage is designing Pop Up Book media. The design made is adjusted to the results of the analysis obtained. The initial stage starts with transferring information into document form

as the basis for making Pop Up Book media. The material chosen is the solar system. Making begins with designing the product with Photoshop CS5 and printing it. This stage is very important to do to produce good and quality media. The design results are presented in Figure 1.
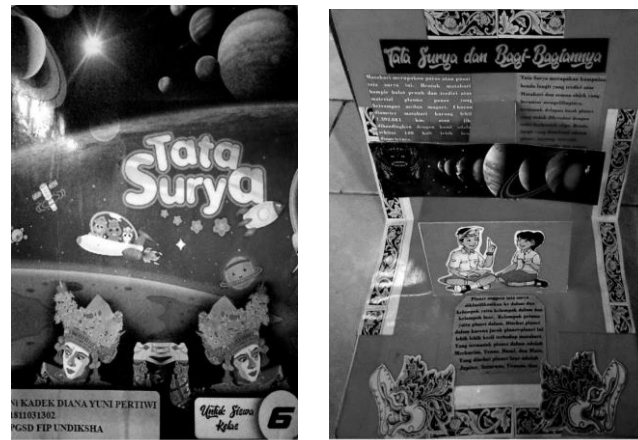

Figure 1. Pop-Up Book Media Design

Third, development. This stage develops Pop-Up Book Media with Balinese Cultural Nuance Pictures as Background. Media designs created at the design stage are then printed. Furthermore, the prints are folded manually. The developed pop-up book is 14.8 cm x 21.0 cm with 15 pages. Glossy paper and art paper are used as materials to manufacture this media. In the end, it contains practice questions arranged to know the students' abilities after using the help of a pop-up book. The media developed is adjusted to the cover, basic competencies, and indicators. The results of the development are presented in Figure 2.
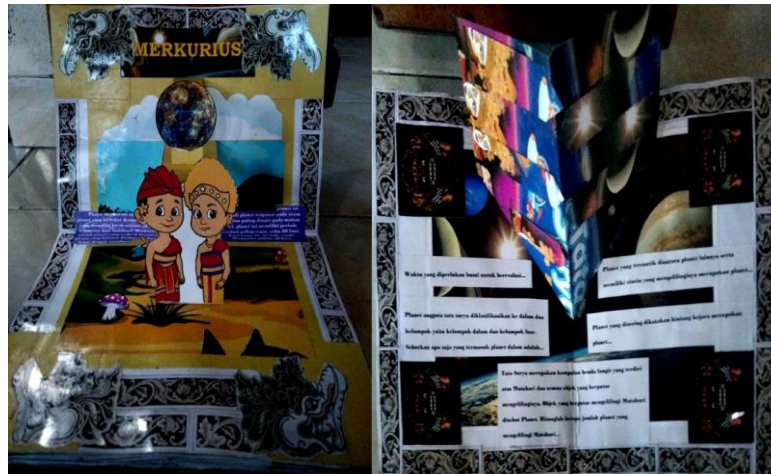

Figure 2. Pop-Up Book Media

Media Pop-Up Books with Balinese Cultural Nuances as experts, teachers, and students then assessed Background Images. Learning media experts assessed an average score of 4.25 with very good qualifications. The teacher's response results get an average of 5.00, which is very good. Student response results get an average of 5.00, which is very good. It is concluded that the Media Pop-Up Book media is feasible to use. Fourth is implementation. This stage tests the effectiveness of the product. The results of the normality test obtained the value of Sig. The result of interest in learning is 0.22 > 0.05, so it is normally distributed. The results of hypothesis testing are presented in Table 4.

In Table 4. the 2-way (2-tailed) significance value is 0.000 <0.05, so H0 is rejected, and H1 is accepted. It was concluded that there were differences in the learning outcomes of sixth-grade elementary school students after learning to use pop-up book media, so the pop-up book media with Balinese cultural nuances as the background image effectively increased student interest in science learning for sixth-grade elementary school students.

Tabel 4. Ringkasan Hasil Uji-T

Variable	Test Value = 37					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
students' interest in learning	58.008	36	0.000	55.18919	53.2597	57.1187

Discussion

The results of data analysis show that the Pop-Up Book Media with Balinese Cultural Nuances as Background Images is feasible to use due to the following factors. First, Media Pop-Up Books with cultural nuances can attract students' interest in learning. There is a background image of Balinese nuances in the media, which is made specifically for the topic of the solar system, so it is very interesting for students. This media is designed with interesting, bright, and appropriate color compositions according to the topic to stimulate students' attention (Hidayah et al., 2020; Yuliani et al., 2020). It is also following research findings that reveal that attractively designed media can increase students' interest in learning (Diartha et al., 2019; Nopriyanti & Sudira, 2015; Noverdika, 2021). In addition, the media has instructions for use so that it will be easier for students to use it (Dwiqi et al., 2020; Rofiq et al., 2019). The ease of using media certainly impacts student interest, which is increasing when learning so that it will impact student understanding (Mukmin & Primasatya, 2020; A. Prasetyo et al., 2021). In addition, each page has an image with a Balinese cultural background that will attract students when reading the material. The use of appropriate images will attract students' attention when learning. In addition, this pop-up media was also developed using glossy paper and art paper to be very interesting and unique. The Balinese nuances presented in the media are identical to pictures of temples, puppets, women and men wearing Balinese clothes, and people praying so that it will increase students' enthusiasm for learning.

Second, Media Pop-Up Books with cultural nuances can improve student learning outcomes. This pop-up media is one of the media teachers can use in distributing solar system material. It is following research that reveals that the media is a tool and a channel for messages so that messages can be conveyed to students well (Maharani et al., 2018; Ruqoyyah et al., 2020). It makes the media important in student learning because it can help students learn (Diyantari et al., 2020; Sentarik & Kusmariyatni, 2020). Students who are helped in learning will certainly impact increasing understanding so that student learning outcomes increase as well (Alviolita & Huda, 2019; Mustofa & Syafi'ah, 2018). It is what causes the position of the media to be very important, and its position is equivalent to the learning method. It is because the method that can be applied in learning activities must use media to make it easier for students to understand the material (Cintia et al., 2018; Rahmawati et al., 2021). The position of the media is very important and has an impact on the success of the learning process. Moreover, this pop-up book media presents image folds that can attract a three-dimensional impression that can be moved to make the reader better understand what is presented in the media. Good information packaging will impact student understanding quickly and can arouse students' imagination to increase their understanding of learning (Kanti et al., 2018; Nurkolis & Muhdi, 2020).

Other research findings also reveal that pop-up books are a three-dimensional form of media that can attract students' learning motivation (Diyantari et al., 2020; Mustofa & Syafi'ah, 2018). Other research findings also reveal that pop-up books can present an impression that focuses students' attention on learning so that it significantly raises students' enthusiasm for learning (Anggraini et al., 2019; Indrianto & Kurniawati, 2020). The use of pop-up books will also make students more focused on observing the material presented to positively impact students (Baiduri et al., 2019; Sobakhah & Afakhrul, 2019). The advantage of this media is that three-dimensional elements can be moved to provide a pleasant learning experience for students. This fun learning experience will certainly increase a pleasant learning atmosphere and increase learning motivation. It is what causes pop-up book media to increase student participation in learning. This research implies that the pop-up book that has been developed can increase students' seriousness in participating in learning activities. Also, this media can be used by students individually or in groups to make it easier for students to learn and improve student understanding.

4. CONCLUSION

The Pop-Up Book Media with Balinese Cultural Nuances as the Background Image has received very good qualifications, so it is worthy of use. The test results also show differences in the results of the

sixth-grade students' interest in learning after learning to use the media. It was concluded that the Pop-Up Book Media with Balinese Cultural Nuances as Background Pictures could increase students' interest in learning, especially on the topic of the Solar System. The three-dimensional elements that can be moved in this media provide a pleasant learning experience for students. This fun learning experience will certainly increase a pleasant learning atmosphere and increase learning motivation. It is what causes pop-up book media to increase student participation in learning. Pop-up books that have been developed can increase students' seriousness in participating in learning activities. Also, this media can be used by students individually or in groups to make it easier for students to learn and improve their understanding.

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