

## Review Empowerment 21st Century Skills in Elementary School Science Learning through Need for Flipbook based Digital Teaching Materials

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### ABSTRACT

Strengthening efforts power competitive especially in the field source power man demand mastered skills life 21st century. Based teaching materials technology be one \_ source necessary study \_ developed for expedite the learning process. For that teaching materials used the digital aspect is necessary optimized. One of them with using flipbooks. Expected with competency flipbook \_ student could developing, learning can fun and get studied anywhere student is at through internet network and gadgets. Study this aim for study need to development teaching materials with technology flipbook based for competency literacy read student could develop through science learning. Study done with use descriptive qualitative. Data collection techniques using questionnaire through google forms for study need flipbook -based teaching materials. Research results give information that the teacher still is use printed teaching materials available at the institution. The research results also show that the teacher has good commitment to opportunity development and utilization of flipbooks for means implementation digital teaching materials. Through results study this expected could motivating the teacher in choose development digital -based teaching materials through flipbooks for facilitate the learning process student

## **INTRODUCTION**

The development of science and technology (IPTEK) is very rapid, teachers must be able to adapt and be able to formulate appropriate learning methods and media (Dermatawan Hafera, 2020; Saurina, 2016 ; Sari, 2021 ). One of the learning activities that uses technology a lot is learning science. Science learning in elementary schools will be more interesting and fun if it is designed in the form of learning media ( Sari, 2021; Andriyani & Suniasih, 2021; & Ikhsan, 2016). Teachers must have skills in using technology to create learning media so that students are more active when participating in learning activities in class. A form of learning media that can have a major impact on students' understanding and skills is the availability and use of learning media (Indahini et al, 2018; Novianto et al., 2018). Independent learning media currently uses information and communication technology a lot in learning. and daily activities (Hudayati et al., 2021; Rivanila, 2014. Teachers must be able to strive for superior and active students in learning activities. Natural science has a lot to do with systematically finding out about nature, science does not only discuss abilities knowledge in the form of facts, principles of concepts only tatau is also a process of discovery (Andriyani & Suniasih, 2021; Sobron et al., 2019). Natural science is a group of sciences, which in essence has a special uniqueness, namely studying natural events that are factual, both in the form of reality or events and causal relationships (Imanah, 2012)

In fact, learning activities that are not interesting will make students feel bored and in the end students will not concentrate on participating in learning activities. Students have a high curiosity, but when the learning presented by the teacher is less interesting, the enthusiasm for learning students will decrease and they will even experience boredom. Learning that is considered boring, one of which is the material on human breathing in science learning, because students are only presented with text reading material in student books and makes the delivery less understandable by students (Nurmasu, 2017; Widiyana, 2016). Learning activities in Natural Sciences are often difficult to learn because they learn about nature, such as material on the respiratory system in humans which discusses human life. Based on observations made by researchers at SD Negeri Patokan I Bantaran, there are several problems they face. Among them, it can be found that students are less active when participating in learning activities in class. Students feel bored with the learning material because it is not presented attractively, so students lose their enthusiasm for learning. Students will be more interested and motivated to learn if the teacher uses media during learning. Students often experience boredom and boredom because the learning system is monotonous and without using media that is attractive to students. One effort to create attractive media in the future (Mulyadi 2016). So it is necessary to have learning media that can facilitate students' understanding in the communication process.

Learning media as a means of receiving the contents of learning material messages and more easily capture learning content with learning media (Hidayatullah and Rakmawati, 2016). Teaching materials that can be used to help facilitate the learning process, including books, sound recordings, or videos that

can be downloaded on the YouTube channel. This is what makes the world of education need to innovate in accordance with advances in science and technology without ignoring human values (Wibowo, 2018). There needs to be a variety of learning media that can attract students' attention, which is fun and of course can be used repeatedly. So this research is to develop learning media, namely Flipbook media.

Flipbook media is a book resembling an album in virtual form in which learning material is contained using sentences filled with colorful columns (Asrial et al., 2019; Hamid Alberida, 2021). This Flipbook media is designed to be as unique and attractive as possible using colorful, canting columns so that students are more interested, active and enthusiastic in participating in learning activities. Flipbooks are sheets of paper resembling albums or magazines measuring 21 x 28 cm. Flipbook is also defined as professional software for converting PDF, image, text and video files into a book-like form (Fonda & Sumargiyani, 2018; Haryanto, Asrial et al., 2019). Flipbooks also have the advantage of being able to present learning materials in the form of words, sentences and pictures, can be combined with colors so that they can attract student focus, easy to make, easy to carry anywhere, and can increase student learning activities (Haryanto, Asrial et al., 2019; Musafanah, 2017). Flipbooks can also increase students' ability to abstract things or events that cannot be presented in class. The purpose of this study was to develop Flipbook learning media material on the human respiratory system in science learning for fifth grade students of SD Negeri Patokan I Bantaran. The use of media in the process of learning activities must be valid and easy to use. Media can be said to be valid and practical if it has passed the testing stages carried out by media validators by filling out a questionnaire. So that in increasing Flipbook media validation a validity questionnaire is presented for material experts and media experts.

## **METHODOLOGY**

The variant of the method used in this research is the type of research and development or Research and Development (R&D). The development model used in this study ADDIE, according to Tengek, et al 2014: 17) states that the ADDIE model consists of five steps, namely: (1) analysis (analyze), (2) planning (design), (3) development (development.), (4) implementation (implementation), and (5) evaluation (evaluation). Media Flipbook goes through these stages and goes through product trial stages, namely expert trials or individual trials. The targets of this trial were content experts, instructional media experts, instructional design experts and three fifth grade students of SD Negeri Patokan I Bantaran with different achievement abilities for the trial. The data collection method used was a non-test in the form of a questionnaire which was given to validators and individual test subjects to determine the feasibility of flipbook media. The data analysis method used to manage data validation results from experts and questionnaire respondents from individual trials obtained through questionnaires in the form of descriptive percentages.

Table 1. Conversion of Achievement Levels with a Scale of 5

Achievement Rate %	Qualification	Information
90-100	Very good	No need to revise
75-89	Well	Slightly revised
65-79	Enough	Revised to taste
55-64	Not enough	Many things were revised
1-54	Very less	Repeatedly made products

## RESEARCH RESULT

The results of the research on the development of Flipbook learning media on the material of the human respiratory system obtained the design of media development and the results of the feasibility of developing Flipbook media. The design and development of Flipbook teaching media material on the human respiratory system in natural science content using the ADDIE (Analyze, Design, Development, Implementation, Evaluation) method. The first step is analysis. At this stage, needs and problems are carried out which includes an analysis of student characteristics, content, environment and facilities. Student characteristics were carried out to determine the condition of fifth grade students at SD Negeri Patokan I Bantaran. The results of interviews with teachers of class V SD Negeri Patokan I Bantaran, students tend to have obstacles in understanding science lessons, especially human breathing material, so they need interesting learning media such as Flipbooks so that students are motivated to learn. The second step is planning (design). At this step, the information obtained from the analysis stage is transferred in the form of a document that is used as a reference for development goals. Planning is carried out in accordance with the results of the previous needs analysis that has been done. Steps to identify software as well as tools and materials needed in the process of developing learning media products that will be developed. Instructional media are designed to be as attractive as possible so that they can attract students' attention, such as in Flipbook media designs that use fiber images to present material using letters and columns according to student characteristics. In addition, the use of color also needs to be considered carefully in the development of the Flipbook media.

Flipbook media contains elements of text and images to complement the material being conveyed. In designing a product, there are 6 principles of text and image design that must be considered by the developer. In accordance with the message design theory conveyed by Sudarma et al (2015: 17), namely there are 6 motivational principles in text and image design, namely the first is a positive impression of learning media that is designed according to student characteristics, the second is readability of text using language that is easy to understand, the third is the clarity of the image in the form of an illustration, the fourth is the layout that makes the reader enjoy learning, the fifth is the

attractiveness of the image that makes students motivated, and the sixth is to arouse students' interest in learning to use learning media. In designing this Flipbook media, the right color selection must also be considered, why the color is used and what the meaning of the color means. In this Flipbook media there are various colors that can be used such as yellow, orange, blue, green and other colors. At the design stage, what needs to be done is to make a design plan. As well as flipbook media components using flipbookpdf media and Microsoft Word 2010 and assisted by CorelDraw X7. The Flow Chart in Flipbook learning media includes Cover, materials, evaluation questions and closing exercises. After making a Flow Chart, the next step is to make a storyboard. Storyboard contains a collection of picture media shapes from Flipbook media.

The third step is the development stage. At this stage the products that have been planned are developed and arranged in accordance with the designs that have been made before as well as learning materials that have been prepared beforehand and have been agreed upon. At this stage, the Flipbook learning media product is made in such a way that it becomes the form of a flip book which contains colorful columns containing predetermined learning material. The fourth step is the implementation stage. This stage was carried out to determine student responses in terms of the attractiveness and feasibility of the Flipbook media. Previously the media had been validated by experts and product trials were carried out, the results of trials that had been made and tested by experts were then applied to class V learning activities to determine student responses to the learning media that had been developed. The final step or stage five is evaluation. This step is evaluated on the data that has been collected in the previous stage, namely the implementation stage to assess the learning videos that have been carried out at each stage to perfect or improve the results of the product being developed. Assessment only includes learning content experts, learning design experts, learning media experts and individual trials only.

Based on the above guidelines, it can be obtained the quality of Flipbook learning media on natural science content material for the human respiratory system for grade V elementary school semester I. The quality of Flipbook Media from the results of the assessment of media experts, design experts, and content experts can be seen in table 2.

Table 2. Results of the Validation Test by Experts and Individual Trials

No	Rating result	Validity Percentage	Qualitative Criteria
1.	Learning media expert test	93.5%	Eligible for use with revisions as per suggestions
2.	Test the learning media design expert	94%	Worth to use
3.	Test the content of learning media experts	98%	Worth to use
4.	Individual test	95%	Worth to use

Table 2 is the result of Flipbook media validation by media experts by learning media experts is 93.5%. The learning design test obtained 94%, the learning media content expert test obtained 98%, and the individual test received 95%, so that the flipbook media in the media expert validation was included in the category "Easy to use without revision". The comments from the individual test were: (1) flipbook display which is very dancing, (2) very clear and good, (3) Flipbook looks beautiful, learning becomes more enthusiastic and fun. The final results of developing Flipbook learning media can be seen in Figures 1 and 2.

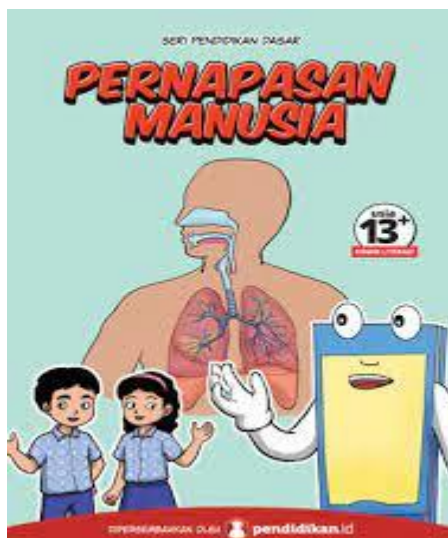


Figure 1. Flipbook Over-Media View

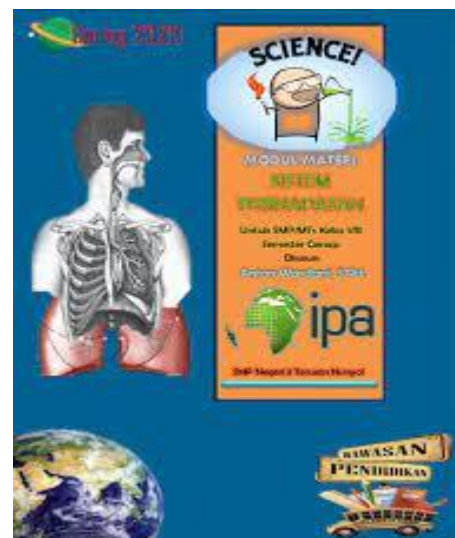


Figure 2. Display of Flipbook Media Contents

## DISCUSSION

Research Development of learning media to produce learning media products Flipbook material on the respiratory system in humans science content class V SD Negeri Patokan I Bantaran. Flipbook media was developed on the basis of observations and interviews conducted at the elementary school level using media. This is because at the school there is very little learning media owned. In achieving the success of learning activities, the classroom environment is a major factor. A comfortable and beautiful place to study makes it easier for students to concentrate on learning (Crismono, 2017). Flidbook learning media for class V aims to increase student learning interest in class when teaching and learning activities take place. Changes in the cognitive, affective and psychomotor domains are indicators of success in learning (Efendi et al., 2021; Nabila & Abadi, 2019). For this reason, it is necessary to have a habituation that allows students to develop themselves in aspects of developing the ability to assess or consider, manipulative abilities, psychomotor skills, solutive abilities in discussing controversial issues, by means of new forms and habits (Afifah et al., 2019). Utilization of learning media can help arouse students' curiosity in learning, and even have a psychological effect on students, such as Flipbook learning media.

Learning media in the form of digital books which contain colorful column pictures make students more active in participating in class learning activities. This statement is supported by comments on the questionnaire distributed to students in individual trials. The three respondents said that through the Flipbook learning media it can stimulate students' curiosity to immediately know the contents of the book that will be presented in learning material (Asrial et al., 2019; Fonda & Sumargiyani, 2018). The content section contains material that has its own characteristics so that it can be taken into consideration in selecting material. Presentation of material in learning media refers to the formulation of indicators and the order of indicators that are appropriate and complete so that students understand the learning concepts being studied (Hamid & Alberida, 2021).

In the aspect of media design it is feasible to continue without revision, if the learning design is poorly designed, the learning process and results will not be good, ineffective and inefficient. The use of images that are in accordance with the theme of blended learning with attractive colors will make students interested in learning and understanding it (Wibowo, 2018). Learning media is a tool for teachers to convey learning material so that it motivates students to pay more attention to the material presented by the teacher (Musafanah, 2017; Nafisah & Ghofur, 2020).

The findings of previous research Flipbook learning media can improve students' creative thinking skills (Fonda & Sumargiyani, 2018; Wibowo, 2018). After the Flipbook media has gone through the validation stage and is declared suitable for use in class V learning, especially in social studies content of the respiratory system in humans. This media trial was only carried out in one school, this Flipbook media was determined by a student response questionnaire. Based on student responses that learning using Flipbook media can motivate students to be more active and interested in learning. The results of other studies state that learning using Flipbook learning media is more effective using virgins in learning

with conventional models (Asrial et Al., 2019; Musafanah, 2017). So the development of Flipbook learning media on human respiratory system material in science content for fifth grade students at SD Negeri Patokan I Bantaran can help with learning problems.

## CONCLUSION

Flipbook learning media material for the human respiratory system in natural science content is suitable for use in learning based on validation tests carried out by experts from individual trials obtaining a good rating, so that it can help overcome learning problems. Suggestions from this research are that this research can be used as a reference as research that is relevant or can be developed further.

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