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## Development of a Digital Book on the Water Cycle for Integrated Science (IPAS) to Improve Fifth-Grade Students' Learning Motivation

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### ABSTRACT

Digital books are a form of book that can be opened electronically, digital books are publications consisting of text, images or sound and published in digital form that can be read on computers or other electronic devices. Because this digital book is one of the innovations that can be used to support the learning process so that it can increase student motivation in active learning. However, the use of digital books makes readers complain of sore eyes when reading for a long time because there is radiation on electronic media. Based on this, the problem in this study is how effective the use of digital books is in increasing the motivation of class V students to understand the water cycle material in the subject of science. The purpose of this study was to determine the effectiveness of the use of digital books in helping to increase the motivation of class V students to understand the water cycle material in the subject of science. The research method used is the R & D method. Data collection techniques in this study used interviews and questionnaires. The data analysis technique used descriptive, the results of the study showed that the digital book media on the water cycle material in the subject of science to increase learning motivation in class V students is valid and practical to be applied in the learning process and is able to increase motivation.

**Keywords:** *Digital Books, Water Cycle, Motivation*

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### 1. Introduction

Education is a conscious and well-planned effort to create a learning environment and learning process that enable students to actively develop their potential, including spiritual and religious strength, self-control, personality, intelligence, noble character, and the skills required for personal and societal life (Bp, Munandar, Fitriani, Karlina, & Yumriani, 2022). Each student has their own way of thinking in accordance with their personality. This diversity can lead to students feeling bored in the classroom when learning activities rely solely on listening to the teacher's explanations, resulting in an imbalanced learning

condition. In the field of education, rapid advancements in science and technology have encouraged the use of digital learning media, as such media allow students to access learning materials more easily and help reduce boredom during the learning process (Endah & Banun, 2023).

In the digital era, the use of technology-based learning media has become increasingly relevant for enhancing students' learning motivation. One appropriate medium needed today is digital books, which can support the learning process in both offline and online settings. Digital books offer numerous advantages in maximizing teaching quality and increasing students' learning motivation; therefore, digital book-based learning media can contribute to improved student learning outcomes (Rusdiana & Wulandari, 2022).

Digital books possess both advantages and disadvantages. The primary benefits of digital books include practicality, portability, environmental friendliness, durability, and the absence of physical damage risks. As long as individuals possess electronic devices such as smartphones, laptops, or tablets they can access and read the e-books stored within them (Nasrul, 2020). Furthermore, the implementation of digital books renders reading activities more efficient and effective, thereby enhancing learning motivation (Ruddamayanti, 2019). In addition to being space-efficient, digital books can be accessed from any location. The ease of acquisition is a significant factor; purchasing a digital book eliminates the need to visit a physical bookstore or library and avoids additional logistical costs. Consequently, users can save both time and expenses in obtaining the desired literature (Syawaludin, 2019). Moreover, digital books are not restricted by time or place, and their visual presentation can be optimized with interactive features that provide significant added value for the reader (Fransisca et al., 2022). Digital books extend beyond mere textual delivery by incorporating various multimedia elements, such as images, videos, interactive animations, and quizzes. These features are designed to capture students' attention and facilitate their comprehension of the concepts being taught (Kurnia et al., 2023). Within the contemporary educational landscape, students continue to encounter significant challenges in several subjects, particularly Natural Sciences (IPA), which is inherently dependent on instructional media (Julianne et al., 2023). These difficulties often result in suboptimal learning outcomes regarding science competencies and the failure to achieve specific performance indicators, which serve as objective components of the modules within the *Merdeka* Curriculum.

According to Kurnia et al. (2023), Natural Science (IPA) is one of the subjects taught starting from the elementary school level. Mastery of science concepts by students requires careful attention from teachers during the learning process, as science is closely related to problems encountered in everyday life (Hadiyanti, 2021). Therefore, it can be concluded that science is a fundamental subject that is closely connected to daily life events, making it essential for students to understand its underlying concepts.

In science learning, there are several topics that many students find difficult to understand, one of which is the water cycle, as it requires a clear sequence and detailed conceptual understanding (Rahmawati & Suryadi, 2019). Based on observations and interviews conducted with Mr. Abdul Ajiz, S.Pd.SD, the fifth-grade homeroom teacher at SDN 11 Lubuk Besar, it was found that many students experienced difficulties in understanding the water cycle material during the teaching and learning process. This was evidenced by students' learning outcomes,

which were mostly below a score of 60 and therefore did not meet the Minimum Mastery Criteria (KKM). The limited use of instructional media was primarily due to adjustments to the teaching material, with teachers more frequently employing conventional and varied methods to assist students' understanding of the water cycle, such as lecturing, writing material on the board, and providing sample questions and practice exercises. In addition, the researcher found that digital book media for the water cycle topic had not yet been implemented at SDN 11 Lubuk Besar. Mastery of science concepts by students requires serious attention from teachers during the learning process, as science is closely related to real-life problems (Hadiyanti, 2021). Therefore, it can be concluded that science is a fundamental subject that is strongly connected to everyday life, making it essential for students to understand its core concepts. The IPAS subject focuses on the study of natural phenomena in the surrounding environment and emphasizes the understanding of scientifically established knowledge.

Learning materials should be systematically organized so that all aspects including text, media, and information cover the relevant competencies, are mastered by students, and align with the intended learning objectives. In the learning process, teaching materials function as essential components that support effective instruction. Therefore, the teacher's role as a facilitator is to design and manage learning conditions that facilitate students' learning processes (Silalahi & Budiono, 2023). The water cycle topic in science learning is a subject that should be presented using illustrations or visual representations. As the water cycle involves processes and abstract concepts, oral explanations alone are insufficient. Thus, learning the water cycle requires appropriate instructional media to support students' understanding of the material (Julianne, Dede, & Nailul, 2023). Inadequate learning support may lead to a decline in students' learning motivation, as students tend to lose interest and become bored. Based on these issues, one effective alternative solution to enhance students' learning motivation is the use of technology-based instructional media, which can foster greater engagement and motivation in learning (Endah & Banun, 2023).

Motivation plays a crucial role in the learning process and is essential for students' academic engagement. Learning motivation is one of the internal factors that influence students' learning (Rusni et al., 2022). It serves as a driving force that encourages students to achieve success and actively participate in learning activities, depending on their effort and abilities (Annisa, 2019). Motivation is a key factor determining the effectiveness and success of learning, as students tend to learn more seriously when they possess higher levels of motivation. Thus, students are more likely to learn effectively when motivating factors are present, whether originating from internal or external sources (Fauziah, Safiah, & Habibah, 2019). Learning motivation is a fundamental prerequisite for learning and plays an important role in fostering enthusiasm and persistence in learning activities. It not only acts as a driver for achieving optimal learning outcomes but also involves sustained effort toward accomplishing learning objectives (Puspitasari, 2019). Motivation encompasses the desire that activates, directs, and regulates individuals' attitudes and behaviors. Therefore, motivation consistently determines the intensity of students' learning efforts, leading to improved learning outcomes. Students' learning achievement tends to be more optimal when supported by strong learning motivation, highlighting its critical role in academic success (Andriani & Rasto, 2019).

Therefore, this study conducts a trial of one instructional medium, namely a digital book. Through the use of this digital book, students are expected not only to gain a better understanding of the water cycle material but also to be motivated to engage in independent and active learning. Accordingly, the researcher intends to conduct a study entitled “Development of a Digital Book on the Water Cycle for Integrated Science (IPAS) to Improve Fifth-Grade Students’ Learning Motivation “.This digital book represents an instructional innovation that can be utilized to support the learning process and foster students’ motivation to participate actively in learning activities.

**2. Research Methods**

This study employs a Research and Development (R&D) approach using the ADDIE model. ADDIE is an acronym for Analyze, Design, Develop, Implement, and Evaluate. The ADDIE model represents a systematic framework for product development that is applied to create performance-based learning. The research design adopted in this study follows the Research and Development (R&D) method, which aims to produce a specific product and examine its effectiveness (Sugiyono, 2021, p. 752). The implementation of the ADDIE model is considered one of the most effective approaches for developing educational products and learning resources, making it highly suitable for instructional design and development (Branch, 2009, as cited in Kurnia et al., 2023).

Table 1  
Stage ADDIE

Stage	Description
Tahap 1 <i>Analysis</i>	The problem identification stage involves identifying learning-related issues through needs analysis and subject matter analysis.
Tahap 2 <i>Design</i>	This stage is utilized to design instructional media with precise and well-defined specifications.
Tahap3 <i>Development</i>	This stage is utilized to develop a prototype of the product under development..
Tahap 4 <i>Implementation</i>	This stage involves evaluating the validity and practicality of the digital-based instructional media.
Tahap 5 <i>Evaluation</i>	This evaluation stage involves refining and perfecting the product based on feedback and recommendations provided by expert validators.

Sumber: (Kurnia & dkk, 2023)

In this study, the researcher employs the ADDIE development model, which encompasses five systematic phases: Analysis, Design, Development, Implementation, and Evaluation. This model is designed to facilitate the systematic production or refinement of specific products, particularly in the development of digital book media. The Research and Development (R&D) procedures following the ADDIE framework consist of five distinct operational stages.

**2.1. Analyze**

The primary activities in the analysis phase involve investigating the background and necessity of developing instructional media, alongside evaluating

the feasibility and development requirements. Following the assessment of developmental necessity, the researcher evaluates the feasibility and criteria for media production. This analysis is conducted to determine the suitability of the instructional media for educational use (Mulyasari et al., 2023). Within this stage, the researcher performs several specific analyses, including curriculum, needs, and content analyses. The curriculum analysis aims to identify the required learning outcomes students must achieve, the needs analysis focuses on identifying student requirements regarding Natural and Social Science (IPAS) instruction at SDN 11 Lubuk Besar, and the content analysis serves to determine the specific subject matter appropriate for development.

## **2.2. Design**

This stage constitutes the design phase of the instructional media. It involves a systematic process starting from defining instructional objectives, designing learning materials or activities, and planning the assessment framework. This design serves as a conceptual foundation for the subsequent development process (Mulyasari et al., 2023). During this phase, the researcher designed a digital textbook for Natural and Social Science (IPAS), focusing on the 'Water Cycle' topic for fifth-grade elementary students. The researcher utilized expert validation to evaluate the prototype. The material expert validation was guided by indicators such as content alignment with learning outcomes, material accuracy, promotion of curiosity, and presentation techniques. Media expert validation focused on ease of use, simplicity, size, and aesthetic appeal, while linguistic expert validation assessed grammatical precision, developmental appropriateness for students, and adherence to language conventions. The designed electronic-based digital book features visually engaging content, including comprehensive material on the water cycle, embedded animated YouTube videos, and interactive educational games.

## **2.3. Development**

The development phase of the ADDIE model involves the realization of the product design. In this stage, the previously established designs are transformed into a functional product ready for implementation (Mulyasari et al., 2023). During this phase, the researcher conducts expert validation and subsequent revisions. The product is developed through a testing process to evaluate its validity and practicality. To assess the product quality, the researcher collaborated with a panel of experts consisting of two university lecturers and one teacher. Once the product is declared valid and practical, it is then deemed ready for the implementation phase.

## **2.4. Implementation**

Once the design and product are finalized and declared valid, they are implemented in a real classroom setting. This implementation yields an initial evaluation that provides essential feedback for the application of the instructional media (Mulyasari et al., 2023). During this phase, the researcher implemented the digital book as an instructional tool for the 'Water Cycle' topic, incorporating animated videos and interactive games. The development of this digital book was tested with fifth-grade students at SDN 11 Lubuk Besar. To measure the practicality of the product, questionnaires were administered to the students to gather their responses and assessments.

## **2.5. Evaluation**

The evaluation stage employs formative evaluation, a continuous assessment process conducted during instruction to identify student progress and enhance

learning outcomes. In this phase, student motivation is assessed by analyzing the effectiveness of the digital book media through the games' integrated quizzes and student responses to the questionnaire. To incentivize performance, students who answer correctly are rewarded. The evaluation results serve to provide feedback to the users of the instructional media (Mulyasari et al., 2023). This stage further involves a comprehensive review of the product to re-evaluate its feasibility, overall quality, and its status regarding validity, practicality, and effectiveness. Specifically, to measure the effectiveness of the digital book in enhancing learning motivation, the researcher utilized a structured questionnaire.

**3. Result**

The development data will be presented using the Research and Development (R&D) method, in accordance with the ADDIE development methodology. The ADDIE methodology comprises five research principles: Analysis, Design, Development, Implementation, and Evaluation.

This is the initial stage, conducted to describe the causes of the gap between the expected conditions and the reality on the ground. Before conducting the analysis, preliminary data must be collected to identify the problems faced and the needs of educators and students for learning media. The analysis phase involves three steps: curriculum analysis, needs analysis, and materials analysis.

During the curriculum analysis process at SD Negeri 11 Lubuk Besar, the school uses the Merdeka curriculum and uses textbooks provided by the school during classroom learning. The school also has a fairly good assessment system. However, the school has not yet adopted digital textbooks for more creative and innovative learning to increase motivation among fifth-grade students.

Table 2  
Teacher Needs Analysis

Aspects	Indicators
Learning Implementation	Curriculum Applied Instructional Methods Used Learner Characteristics Level of Student Participation Total Number of Students
Instructional Media	Sources of Learning Materials Types of Instructional Media Employed Weaknesses of the Utilized Learning Media Facilitating Factors in the Learning Process

Source: Akbar (2020), modified

Table 3  
Learner Needs Analysis

Aspects	Indicators
Students' Needs Analysis	Use of Learning Media
	Supplementary Learning Resources
	Students' Interest in Water Cycle Material
	Access to Digital Learning Materials on the Water Cycle

Based on the results of curriculum analysis, needs analysis, and material analysis, the instructional medium selected for development was a digital book on water cycle material in the IPAS subject, aimed at enhancing the learning motivation of fifth-grade elementary school students. At the design stage, the researcher began formulating the instructional media to be developed. The following aspects are outlined below

- a. Determining learning objectives based on curriculum analysis, namely enabling students to explain the process of the water cycle.
- b. Determining learning objectives based on needs analysis, namely developing a digital book that incorporates water cycle animations, interactive illustrations, and user-friendly language.
- c. Determining learning objectives based on material analysis, which include the definition of the water cycle, the stages of the water cycle, and the impact of the water cycle on life..

In conducting the material analysis, the researcher must align the content with the syllabus applied. The materials used to develop the digital book for the IPAS subject on the topic of the water cycle must be consistent with the syllabus for Grade V. The water cycle materials include the definition and concept of the water cycle, the stages of the water cycle, an overview of the water cycle process, types of water cycles (short cycle, medium cycle, and long cycle), as well as the benefits of water for living organisms. These benefits encompass the importance of water for humans, animals, and plants. Material analysis is conducted to ensure that the content developed in the digital book is aligned with curricular requirements and learning objectives.

The development stage aimed to produce Prototype II, which was revised based on feedback from three experts, consisting of two university lecturers and one elementary school teacher. Subsequently, field trials were conducted to obtain a digital book on water cycle material that was valid, practical, and effective.

These findings are consistent with the study conducted by Putri (2024), which reported a validity score of 95.6%, categorized as "very valid." The expert evaluation indicates that the developed digital book meets validity criteria and aligns with the research objectives for use as an instructional medium. This result is in accordance with the theory proposed by Kustandi and Darmawan (2022), which states that instructional media function as tools to facilitate the teaching and learning process by clarifying conveyed messages, thereby improving the achievement of learning objectives

This stage involved the implementation of the developed digital book. During the implementation stage, field trials were conducted to examine the practicality and effectiveness of the digital book. The trials were carried out through one-to-one, small group, and large group testing involving fifth-grade students at SDN 11 Lubuk Besar. In the one-to-one trial, two students participated, while fifteen students were involved in the small group trial to assess the practicality of the digital book. The trials began with students listening to an explanation of the water cycle material in the IPAS subject, followed by students being asked to explore and use the digital book. The digital book was designed to be visually appealing through the use of appropriate colors, font styles, illustrations, and background design. The complete design elements of the digital book are described as follows:

- a. The background color scheme employs shades of blue and white, complemented by visual elements such as clouds, birds, water, and rocks.
- b. The text on the front cover is enlarged and bolded to enhance clarity and visual appeal.
- c. The digital book allows navigation to previous and subsequent pages through digital slides equipped with navigation arrows positioned at the lower right and left corners.
- d. The digital book includes visual representations of the water cycle process.
- e. The digital book presents an explanation of the water cycle consisting of three types: the short cycle, medium cycle, and long cycle
- f. The digital book contains embedded links to YouTube videos for supplementary learning.
- g. The digital book incorporates interactive games designed to reinforce students' understanding of the water cycle material.
- h. The digital book consists of 34 pages, including a front cover and a back cover..
- i. The digital book includes a reference list.
- j. Author biographical information is presented on slide 32 of the digital book.

After the development of the digital book on the water cycle was completed, the next stage involved validation by three experts, consisting of two university lecturers and one elementary school teacher. The validators evaluated the media, content, and language aspects of the digital book that had been designed by the researcher. The experts involved in the validation process are presented as follows:

Statement	Assessment Score		
	Validator 1	Validator 2	Validator 3
Media	28	26	28
Content	20	21	23
Language	26	23	27
Total Score	74	70	78
Percentage Score (%)	92,5%	87,5%	97,5%

Overall Validity Score		92,5%	
Criteria		ighly Valid	

At the end of the learning session, students were instructed to complete a student response questionnaire regarding the digital book and a learning motivation questionnaire provided by the researcher. The large group trial involved all fifth-grade students, totaling 24 participants, and was conducted to determine the effectiveness of the digital book. During this stage, the researcher explained the features of the digital book, its usage procedures, and the water cycle material. The results of the one-to-one, small group, and large group trials are presented as follows:

a. Results of the One-to-One Trial

The one-to-one trial involved two fifth-grade students from SD Negeri 11 Lubuk Besar. The instrument used in this trial was a student response questionnaire toward the digital book.

Picture 1  
Questionnaire Completion Activities at the One-to-One Stage



Based on the results of the student response questionnaire in the one-to-one trial, it was found that the students provided positive responses toward the digital book. The percentage obtained from the average total score of the two students was 88.75%, indicating that students strongly agreed that the overall appearance of the developed digital book could enhance their learning motivation and interest. Based on the data analysis, the one-to-one trial was categorized as “very practical”.

b. Results of the Small Group Trial

The small group trial involved fifteen fifth-grade students from SD Negeri 11 Lubuk Besar. The instrument used in this trial was a student response questionnaire toward the digital book.

Picture 2  
Questionnaire Completion Activities at the Small Group Stage



The results of the student response questionnaire in the small group trial indicated that students provided positive responses toward the digital book. The percentage obtained from the average total score of the fifteen students was 89.5%, which, based on the practicality criteria, falls into the “very practical” category.

c. Large Group Trial

Picture 4  
Questionnaire Completion Activities at the Large Group Stage



The large group trial involved all fifth-grade students of SD Negeri 11 Lubuk Besar, totaling 24 students. This trial aimed to determine whether the developed digital book could enhance students’ learning motivation in IPAS learning for fifth-grade students. Based on the research data obtained from the development of the digital book on water cycle material, the total score of the students’ motivation questionnaire prior to percentage conversion was 2,178, and after being converted into percentages, the score reached **90%**, which falls into the high category.

The large group trial was conducted to identify the potential effect of the developed digital book after undergoing expert validation and one-to-one and small group trials. During this stage, the researcher explained the water cycle material, introduced the digital book, and provided guidance on how to use it. Subsequently, students were asked to complete a questionnaire consisting of ten items.

Based on the table presented above, the results of the motivation questionnaire completed by 24 students initially showed an average percentage of 39%, categorized as “ineffective.” However, further analysis demonstrated that the overall average percentage of students’ learning motivation reached **90%**, categorized as “very effective.” These findings indicate that the digital book is highly effective for supporting fifth-grade students’ learning of water cycle material using digital media. The results of this testing indicate that the use of digital book media for water cycle material received positive responses from students. This finding is evidenced by students’ correct responses to the questions embedded in the interactive games within the digital book, as well as the results of the questionnaires. After evaluation, students demonstrated high enthusiasm in answering the game-based questions, and all students were able to select the correct answers. In addition, a practicality evaluation was conducted through one-to-one, small group, and large group trials. The student response questionnaire results showed an average percentage of 89.5%, which falls into the “very practical” category for the use of digital book media on water cycle material in IPAS learning at the elementary school level.

Based on the research data obtained from the development of a digital book on water cycle material in the IPAS subject to enhance learning motivation among fifth-grade students at SD Negeri 11 Lubuk Besar, the results of the learning motivation questionnaire completed by 24 students yielded a total score of 2,178 prior to percentage conversion. After conversion, the score reached 90%, which falls into the high category.

The developed digital book as an instructional medium was evaluated through expert validation involving material, language, and media experts. The validation was conducted by three experts. The first validator, Trency Hera, S.Pd., M.Sn., obtained a total score of 74, equivalent to 92.5%. The second validator, Elsi Adelia Fitri, M.Pd., achieved a total score of 70, with a percentage of 87.5%. Meanwhile, the third validator, Abdul Azis, S.Pd.SD, obtained a total score of 78, corresponding to 97.5%. Based on these results, the average validation percentage was 92.5%, which falls into the “valid” category. These findings are consistent with the study conducted by Putri (2024), which reported a validity score of 95.6%, categorized as “very valid.” The expert evaluations indicate that the developed digital book meets the validity criteria and aligns with the research objectives for use as an instructional medium. This result is in accordance with the theory proposed by Kustandi and Darmawan (2022), which states that instructional media function as tools that facilitate the teaching and learning process by clarifying conveyed messages, thereby improving the achievement of learning objectives.

The practicality testing stage was conducted through a one-to-one trial using questionnaires administered to students. In this stage, two fifth-grade students participated in the one-to-one trial and obtained an average score of 88.75%, which falls into the “very practical” category, indicating that the digital book is feasible for use. In the subsequent trials, the researcher explained the water cycle material, introduced the digital book, and provided guidance on its use. Students were then asked to complete a questionnaire consisting of ten items. In the small group trial, fifteen fifth-grade students participated and achieved an average score of 89.5%, categorized as “very practical.” Furthermore, in the large group trial involving twenty-four fifth-grade students, the student response questionnaire yielded an average percentage of 89.5%, which also falls into the “very practical” category. Based on the results of the one-to-one, small group, and large group trials, it can be

concluded that the developed digital book is highly practical for use in IPAS learning at the elementary school level.

#### **4. Discussion**

The findings of this study are supported by the research conducted by Santi, Lubis, and Kesumawati (2023), which reported that students' responses to the developed digital flipbook-based water cycle instructional materials for fifth-grade elementary students were categorized as very practical. This was evidenced during the implementation stage, where 27 respondents achieved a practicality score of 83.25%, falling within the "very practical" category according to the 81%-100% criterion.

These results indicate that the developed digital book instructional media can be considered practical, which constitutes one of the strengths of this study. This finding is consistent with the theory proposed by Nasrul (2020), which states that the advantages of digital books include their practicality, portability, environmental friendliness, durability, and minimal risk of physical damage, allowing users to easily read and access e-books through electronic devices.

The developed digital book also offers several advantages, particularly in terms of accessibility and flexibility. The digital book can be accessed anytime and anywhere using devices such as tablets, laptops, or smartphones, enabling students to engage in learning not only at school but also at home or while traveling. In addition, the digital book is interactive and engaging, as it is enriched with multimedia elements such as animated images, videos, interactive simulations, and digital quizzes, which enhance students' interest and facilitate their understanding of water cycle concepts. This interactivity directly contributes to increased learning motivation and student engagement. Moreover, the digital book is lightweight and environmentally friendly, as it does not require physical printing, thereby reducing environmental impact and eliminating the burden of carrying heavy printed textbooks. All learning materials are stored digitally and can be accessed through a single device. The clear and well-structured content organization allows students to learn independently according to their own pace and learning styles, fostering self-confidence and autonomous learning. Furthermore, this instructional medium enables teachers to monitor students' learning progress more effectively and in real time.

The results of the testing indicate that the use of digital book media for water cycle material received positive responses from students. This was evidenced by students' correct answers to the questions embedded in the game features of the digital book, as well as the questionnaire results. After evaluation, students demonstrated high enthusiasm in responding to the game-based questions, and all students were able to select the correct answers. In addition, a practicality evaluation was conducted through one-to-one, small group, and large group trials. The student questionnaire results showed an average percentage of 89.5%, which falls into the "very practical" category for the use of digital book media in teaching water cycle material in IPAS subjects at the elementary school level.

Based on the research data obtained from the development of a digital book on water cycle material in the IPAS subject aimed at enhancing learning motivation among fifth-grade students at SD Negeri 11 Lubuk Besar, the results of the learning motivation questionnaire completed by 24 students yielded a total raw score of 2,178 prior to percentage conversion. After conversion, the score reached 90%,

which falls into the high category.

Another advantage of the digital book is its adaptability, as it can be updated or adjusted to align with the latest curriculum requirements or students' learning conditions without the need for reprinting. This flexibility makes the digital book a relevant and sustainable instructional medium. Furthermore, the use of digital books provides students with direct experience in utilizing information technology in accordance with contemporary developments, thereby contributing to the enhancement of students' digital literacy from an early stage. In conclusion, considering its various advantages, the digital book on "Water Cycle" material serves as a practical and innovative instructional medium that strongly supports the enhancement of learning motivation among fifth-grade elementary school students. This digital book not only delivers instructional content effectively but also fosters students' interest, curiosity, and sustained enthusiasm for learning.

## 5. Conclusion

This study aimed to develop a digital book instructional media on the Water Cycle topic for fifth-grade elementary school students and to examine its validity, practicality, and effectiveness. The validation results showed an average score of 92.5%, indicating that the developed digital book is highly valid based on expert evaluations in terms of content, language, and media design. The practicality test conducted through one-to-one, small group, and large group trials produced an average score of 88%, categorized as very practical, demonstrating that the digital book is easy to use and feasible for implementation in classroom learning.

Furthermore, the effectiveness test involving 24 students resulted in an average score of 90%, indicating that the digital book is very effective in supporting the learning process. These findings suggest that the developed digital book serves as an innovative instructional medium that can enhance students' learning motivation and engagement in understanding the Water Cycle concept.

In addition, the digital book provides flexible and accessible learning opportunities through interactive multimedia features that allow students to learn anytime and anywhere. Therefore, the integration of digital book media in elementary science learning can support more engaging and technology-integrated instruction. Future research is recommended to examine the long-term impact of digital book usage on students' learning outcomes and digital literacy development.

## References

- Annisa, A. N. (2019). Pengaruh motivasi belajar terhadap prestasi siswa di sekolah. *Jurnal Bimbingan Konseling Islam*, 2
- Bp, A. R., Munandar, S. A., Fitriani, A., Karlina, Y., & Yumriani. (2022). Pengertian pendidikan, ilmu pendidikan dan unsur-unsur pendidikan. *Al-Urwatul Wutsqa*. <https://journal.unismuh.ac.id/index.php/alurwatul>
- Endah, M. T., & Banun, K. H. (2023). Pengaruh penggunaan media pembelajaran berbasis teknologi dalam pembelajaran terhadap motivasi belajar siswa sekolah dasar. *Jurnal Ilmu Pendidikan*, 2395–2405.
- Fauziah, Safiah, I., & Habibah, S. (2019). Upaya meningkatkan motivasi belajar siswa melalui lesson study di kelas V SD Negeri Lampagen Aceh Besar. *Jurnal Ilmiah Pendidikan Guru Sekolah Dasar*, 31.
- Fransisca, et al. (2022). Pengembangan buku digital Budimas untuk pembelajaran PAI pada siswa sekolah dasar. *Jurnal Basicedu*, 5269.

- Julianne, U. H., Dede, I. I., & Nailul, A. M. (2023). Pengembangan media komik digital pada mata pelajaran IPA materi siklus air kelas V sekolah dasar. <https://jurnal.unimed.ac.id>
- Kurnia, L. A., et al. (2023). Pengembangan media pembelajaran siklus air berbasis digital siswa kelas V sekolah dasar. *Jurnal Elementaria Edukasia*, 352.
- Kustandi, C., & Darmawan, D. (2022). *Pengembangan media pembelajaran*. Kencana.
- Nasrul, M. (2020). Penggunaan e-book pada era digital. *Al-Maktabah*, 19, 80–85.
- Putri, B. A. (2024). Pengembangan permainan engklek pintar (Engpin) sebagai media pembelajaran matematika untuk siswa kelas IV sekolah dasar. <https://univpgri-palembang.ac.id>
- Ruddamayanti. (2019). Pemanfaatan buku digital dalam meningkatkan minat baca. Dalam *Prosiding Seminar Nasional Pendidikan Program Pascasarjana Universitas PGRI Palembang*.
- Rusdiana, M., & Wulandari, A. (2022). E-book interaktif materi siklus air pada pembelajaran IPA untuk meningkatkan hasil belajar siswa kelas V sekolah dasar. *Mimbar PGSD Undiksha*, 10(1).
- Santi, L., Lubis, P. H., & Kesumawati, N. (2023). Pengembangan Bahan Ajar Siklus Air Berbasis Flipbook Digital pada Kelas V Sekolah Dasar. *Jurnal Ilmiah Pendidikan Dasar*, 6474.
- Silalahi, R. B., & Budiono, H. (2023). Pengembangan Bahan Ajar Flipbook berbasis Web pada Muatan IPA di Sekolah Dasar. *Journal of Education Research*, 1341–1342.
- Syawaludin, M. (2019). Implementasi Buku Digital dalam Mengoptimalkan Penggunaan Literasi untuk Menyongsong Revolusi Industri 4.0 di dalam Sekolah. <https://jurnal.univpgri-palembang.ac.id>