
TRANSFORMING MATHEMATICS LEARNING THROUGH DIGITAL BOOKS: NEEDS ANALYSIS AT SDN 26 SOUTHEAST PONTIANAK

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Abstract

The purpose of this study is to analyze the need for the development of digital books for mathematics learning at SDN 26 Southeast Pontianak. This study is a research and development (R&D) study using Thiagarajan's 4-D model. This study focuses on the define stage, which includes: Initial Analysis, Student Analysis, Task Analysis, Concept Analysis, and Goal Formulation Analysis. Data collection uses interview techniques with interview sheets as instruments. Data analysis used the technique according to Miles & Huberman (1992), which consists of three activity flows, namely: data reduction, data presentation, and conclusion drawing/verification. The define stage includes five activity steps. Data were collected through interviews with the Grade VB homeroom teacher and observations of learning conditions involving 24 Grade V students at SDN 26 Southeast Pontianak. The findings indicate that mathematics learning at SDN 26 Southeast Pontianak is still dominated by lectures and printed textbooks, while students experience persistent difficulties in multiplication concepts and demonstrate higher engagement when learning with interactive media. The study identifies the need for a digital book integrating visual explanations, audiovisual content, structured practice activities, and curriculum-aligned learning objectives as the primary design requirements. This needs analysis provides a systematic empirical foundation for the development of context-specific digital mathematics books, representing the novelty of the study beyond merely recommending digital media development.

Keywords: Need Analysis, Digital Books, Mathematics Learning

Abstrak

Tujuan dari penelitian ini adalah untuk menganalisis kebutuhan terhadap pengembangan buku digital untuk pembelajaran matematika di SDN 26 Southeast Pontianak. Penelitian ini merupakan penelitian pengembangan atau Research and Development (R&D) menggunakan model 4-D oleh Thiagarajan. Penelitian ini berfokus pada tahap define yang meliputi: Analisis awal, Analisis peserta didik, Analisis Tugas, Analisis Konsep, serta Analisis Perumusan Tujuan. Pengumpulan data menggunakan teknik wawancara dengan instrumen lembar wawancara. Analisis data menggunakan teknik Menurut Miles & Huberman (1992) yang terdiri dari tiga alur kegiatan yaitu: reduksi data, penyajian data, penarikan kesimpulan/verifikasi. Tahap define meliputi lima langkah kegiatan. Data dikumpulkan melalui wawancara dengan guru wali kelas VB dan pengamatan terhadap kondisi pembelajaran yang melibatkan 24 siswa Kelas V di SDN 26 Pontianak Tenggara. Hasil penelitian menunjukkan bahwa pembelajaran matematika masih didominasi metode ceramah dan penggunaan buku cetak, sementara peserta didik mengalami kesulitan pada konsep dasar perkalian dan menunjukkan motivasi belajar yang lebih tinggi ketika menggunakan media pembelajaran. Penelitian ini mengidentifikasi kebutuhan buku digital yang memuat visualisasi materi, konten audiovisual, latihan interaktif, serta disusun berdasarkan capaian pembelajaran dan karakteristik peserta didik. Kebaruan penelitian ini terletak pada penyusunan kebutuhan pengembangan buku digital secara sistematis melalui tahapan define sebagai dasar empiris pengembangan media yang kontekstual sesuai kebutuhan sekolah.

Kata Kunci: Analisis Kebutuhan, Buku Digital, Pembelajaran Matematika

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INTRODUCTION

The rapid development of information and communication technology has had a major impact on various aspects of human life, including education. The world of education is now required to adapt to the developments of the digital era, which demands more innovative, efficient, and relevant learning processes. Digital transformation in education does not only focus on the use of technological devices, but also involves a paradigm shift in managing the teaching and learning process to be more student-centered and facilitate meaningful learning experiences.

Learning mathematics at the elementary school level is an important foundation for developing logical, analytical, and numerical thinking skills. Unfortunately, in many elementary schools, including those in Indonesia, mathematics learning often faces obstacles such as low student interest, difficulty in understanding abstract concepts, and limited variety of media used by teachers. These limitations in media and methods can make the learning process monotonous and unable to cater to different learning styles. This is reinforced by findings that the use of digital media such as e-books, digital numeracy applications, and interactive teaching materials shows an increase in students' motivation and understanding of mathematics. For example, research by Rahma & Nurlaelah (2024) on meta-analysis in Indonesia found that digital technology has a moderate positive effect on the mathematics achievement of secondary school students.

Several more specific studies at the elementary school level also show that digital media and digital stories are effective in increasing motivation to learn mathematics. For example, the study "Digital Storytelling in Increasing Elementary School Students' Mathematics Learning Motivation" conducted at an elementary school in Pekanbaru concluded that digital storytelling has been proven to increase students' motivation to learn mathematics (Amita, 2023). Another study on "Development of Digital Teaching Material Based on Numeracy for 4th Class Primary School" indicates that the use of digital teaching materials tailored to numeracy and local contexts can be an effective tool in improving the numeracy literacy of fourth-grade elementary school students (Nabela & Agustine, 2024).

Although previous studies have demonstrated the effectiveness of digital books, digital storytelling, and digital teaching materials in improving students' motivation and mathematics learning outcomes, most of these studies focused on developing and evaluating instructional products. Limited attention has been given to systematically identifying development needs

through the define stage of the 4-D model before the design process begins. Consequently, empirical evidence regarding teachers' instructional needs, students' learning characteristics, content organization, task requirements, and learning objectives as the foundation for digital book development remains limited. Therefore, this study addresses this gap by conducting a comprehensive needs analysis through the define stage to establish evidence-based design requirements for developing mathematics digital books that are appropriate to the context of Grade V students at SDN 26 Southeast Pontianak.

On the one hand, the urgency of digital books in mathematics learning is becoming increasingly clear. Digital books are books in the form of text and images in digital format that can be accessed using computers, smartphones, and other digital devices. Digital books come in several formats, including digital textbooks, apps, audiobooks, and others (Haslinda et al., 2022). Digital books are one of the technological innovations in the teaching and learning process that can be used as a medium to help students avoid feeling lazy and bored, and to obtain the necessary learning materials accurately and easily (Ginting & Simamora, 2022). This statement is in line with the explanation by Hendra et al (2023), who stated that digital books have also become a very popular form of literacy, as their use can increase students' motivation to learn due to their format, which makes it easy for readers to read anytime and anywhere using digital devices.

Digital books enable the presentation of material in a visual, interactive, and flexible manner. Students can access them anytime and anywhere, review material as needed, and view animations, videos, and interactive elements that clarify abstract mathematical concepts. In addition, digital books can support different learning speeds and styles among students. These advantages make digital books a potential solution to several problems in the field.

However, the reality on the ground shows that not all schools are adequately prepared. Some of the challenges include: Limited facilities/infrastructure, such as hardware (tablets, computers, or mobile devices) and stable internet connections (Darmawan et al., 2025); Teacher readiness, both in terms of technical competence (operating digital media) and pedagogical competence (designing effective digital materials) (Amelia, 2023); The specific needs of students, including their prior knowledge, learning styles, interests, and barriers to understanding mathematics; The local context of the school, including its culture, resources, and socioeconomic characteristics (Almujab, 2023).

At SDN 26 Southeast Pontianak, based on initial observations, teachers still rely on printed books and simple teaching aids. Low interactivity, lack of variety in learning media, and minimal contextualization of material result in suboptimal student motivation and a lack of in-depth understanding of certain mathematical concepts. This condition indicates a gap between the potential of digital media technology and its application in schools.

Therefore, conducting a needs analysis for the development of digital books for mathematics learning at SDN 26 Southeast Pontianak is very important. This analysis aims to obtain a comprehensive overview of: teacher and facility readiness; the need for appropriate interactive content; and existing supporting and inhibiting factors at the school. The results are expected to provide a solid foundation for the development of effective, relevant digital books that are appropriate for the local context at SDN 26 Southeast Pontianak.

METHODS

The research was conducted in June 2025. This research is a research and development (R&D) study. There are several types of models in the R&D method. The model used in this study is the 4-D model by Thiagarajan (1974), namely: Define, Design, Develop, and Disseminate. This research focuses on the define stage, which includes: Initial Analysis, Student Analysis, Task Analysis, Concept Analysis, and Goal Formulation Analysis. This study intentionally focuses only on the define stage because its primary objective is to identify empirical needs that will serve as the foundation for the subsequent design and development of digital mathematics books. In the 4-D model, the define stage plays a crucial role in identifying instructional problems, learner characteristics, curriculum requirements, learning tasks, and instructional objectives before product design begins. Therefore, completing this stage comprehensively is essential to ensure that the digital book developed in future research is relevant to users' needs and the learning context. Accordingly, the outputs of this study are not instructional products but empirical design requirements that will guide the subsequent design stage.

The participants consisted of the Grade VB homeroom teacher as the primary informant and Grade VB students as the target users of the developed product. The students were in the age range appropriate for Grade V elementary school and represented diverse academic abilities based on the teacher's assessment. Student characteristics identified during the preliminary analysis indicated that many students experienced difficulties in multiplication concepts and

demonstrated greater engagement when learning with instructional media. These characteristics served as the basis for the needs analysis conducted during the define stage. Data collection was conducted using interview techniques with interview sheets as instruments. Data analysis used the technique according to Miles & Huberman (1992), which consists of three stages: data reduction, data presentation, and conclusion drawing/verification.

RESULTS AND DISCUSSION

The results of this study are compiled based on the stages of Digital Book development. The development of this media refers to the 4-D model proposed by Sivasailam Thiagarajan, Dorothy S. Semmel, and Melvyn I. Semmel in 1974, which focuses on the define stage. The definition stage is the first step in the digital book development process. The purpose of this stage is to analyze the needs in developing digital book media by exploring various sources of information in the learning process, especially in mathematics at SDN 26 Southeast Pontianak, as a basis for designing digital book products that suit those needs.

To ensure a systematic interpretation of the interview data, the findings were analyzed using thematic analysis following the data reduction, data display, and conclusion drawing procedures proposed by Miles and Huberman (1992). Interview responses were first coded, then grouped into themes and indicators that represent the main findings of the needs analysis. Representative quotations are presented to strengthen the credibility of each identified theme. The thematic analysis for each stage of the define process is summarized in the following table 1.

Table 1. Thematic Analysis of Interview Results at the Define Stage

Theme	Indicator	Representative Quote	Interpretation
Curriculum implementation	Implementation of Merdeka Curriculum	"...the school has implemented the Merdeka Curriculum..."	The curriculum provides the basis for developing curriculum-aligned digital books.
Teaching methods	Dominance of lectures and assignments	"...mathematics is often taught through lectures and assignments..."	Mathematics learning remains teacher-centered.
Learning media	Limited use of digital media	"...digital books have never been used..."	Digital learning resources have not yet been integrated into classroom instruction.

Student learning needs	Difficulty in multiplication concepts	in "...their multiplication skills are still weak..."	Students require more interactive learning resources to strengthen conceptual understanding.
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The thematic analysis presented in Table 1 indicates that the preliminary analysis identified three major issues related to mathematics learning, namely curriculum implementation, instructional strategies, and the use of learning media. Each theme is explained in greater detail below, supported by representative quotations from the interview with the Grade VB homeroom teacher.

Preliminary Analysis

The first stage of this digital book media development research involved preliminary analysis aimed at gathering information related to teacher planning in learning, starting from curriculum implementation, lesson planning based on the implemented curriculum, and the use of methods and media in the teaching and learning process in mathematics. During this stage of information gathering, the researcher conducted an interview at SDN 26 Southeast Pontianak on February 17, 2025, with the informant being Mrs. Hana Syarifah Utami, S.Pd, the homeroom teacher for class VB. The questions asked by the researcher at the initial stage were: first, "What curriculum is currently being implemented in this school?" This question was the starting point for the researcher and received the following answer:

"Overall, this school has implemented an independent learning curriculum."

The implementation of the curriculum at SDN 26 Southeast Pontianak in the 2024/2025 academic year from grades 1 to 6 has used the independent learning curriculum as explained by the informant. This implementation is in line with the policy of the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek). After that, the researcher also asked, "Are there any obstacles in implementing learning planning in the implementation of the independent learning curriculum?" Mrs. Hana replied:

"In this independent learning curriculum, the learning planning process no longer uses lesson plans but teaching modules. So far, there have been no difficulties because it is more or less the same as lesson plans, and there are many references from supervisors, PMM, the internet, and even TikTok, so it is easy to adapt to creating teaching modules. However, during classroom implementation, the planning flow of teaching modules often undergoes many changes, requiring me to re-adapt them to suit students' abilities or if I have sudden activities, resulting in incomplete or unfinished material. Therefore, I prepare small notes for these changes."

The researcher then asked, "What methods are often used in the learning process?" Ms. Hana replied:

"Most often PBL because it encourages students to think critically to solve learning problems. Sometimes we also use role-playing methods."

She also added regarding this method:

"The method takes a long time, and the one that is often used is the group work method, which actually takes time and makes the class noisy because we have to arrange the seating positions, so I rarely use it, only occasionally, 2 to 3 times a month at most. I use ice more often."

The researcher then asked, "Is the PBL method used for all subjects or only certain ones?" Ms. Hana replied:

"Actually, it can be used for all subjects, but I most often use it for IPAS (Science, Technology, Engineering, and Mathematics) and Pancasila (Indonesian National Ideology), which have a lot of theory. For Indonesian language, I often use role-playing. I have never used it for mathematics because mathematics is a subject that is often taught using lectures and assignments."

Next, the researcher asked, "What media are often used in the learning process?" Mrs. Hana replied:

"During the learning process, we often rely on books, sometimes also using media at most once or twice a month because the creation of media involves students for P5 project grades, and that takes one to two weeks. However, if it is sudden, I usually use PowerPoint, videos, or images. Other digital media, such as digital books, have never been used."

The researcher asked, "What media have been created with the involvement of students?" Ms. Hana said:

"The media that have been created include visual media such as models of the earth, the human skeleton, and the digestive system, mostly for science lessons. For mathematics, there are visuals of blocks and cubes. Other subjects involve more practical activities, such as practicing regional dances and songs."

The next question was, "Are there any media that are difficult to implement?" Ms. Hana replied:

"So far, there aren't any because before creating the media, we conduct a survey first. The use of media is also effective because students become more active during the learning process. However, there may be difficulties in terms of technical constraints related to time. I actually finish creating the media at school, but due to time constraints and not yet having the classroom ready, the creation process becomes semi-homework. And if that is the case, I don't know whether it is their own work or the help of the students' parents. That's why I don't use media too often because I'm afraid that the results are not their own, considering that as a teacher, I certainly know the abilities of my own students."

The role of media is to make it easier for students to understand the material and provide feedback where students play an active role in the learning process. However, the selection of media still requires consideration of all existing technical constraints. Based on the results of the interviews during the initial analysis phase, it can be concluded that the implementation of learning in class V of SDN 26 Southeast Pontianak has been carried out in accordance with the Merdeka Belajar Curriculum framework using teaching modules. However, in mathematics lessons, the methods and media used are not very varied. Digital books have never been used, so exploration of this medium could be developed to improve students' abilities and understanding.

Student Analysis

The next stage was for the researcher to analyze the participants in order to identify the characteristics of the fifth grade B students who were the subjects of the digital book development research by interviewing the fifth grade B homeroom teacher. The questions consisted of: first, "How are the math skills of the fifth grade B students?" Mrs. Hana replied,

"Their abilities vary. Many students are quick to understand when taught. However, the problem is that they often make mistakes in their calculations because their arithmetic skills, especially multiplication, are not yet fluent, so I implement a system of memorizing multiplication tables from 6 to 10 before starting the lesson."

Ms. Hana also said:

"Yes, as we know, many students dislike mathematics, which results in their basic skills being lacking because they are lazy to memorize and often make mistakes in their answers because they are not careful. In mathematics lessons, I only rely on ice breaking."

Second question: "Is the mathematics material in grade VB considered too difficult for students?"

"Actually, the material in grade V is not too difficult because the curriculum change means that some material is repeated. But again, the main problem lies in the lack of a strong foundation in basic concepts. As a result, students often make mistakes when doing the problems."

Ms. Hana also added:

"They are actually much more enthusiastic about mathematics when using media. If it's just a regular lecture, the class becomes passive. I always include ice breakers or educational videos to refresh the atmosphere and keep them actively participating. As mentioned earlier, other media are quite time-consuming to produce."

Variations in basic math skills, especially low multiplication, cause students to lose interest and enthusiasm for math. This is due to a more conventional teaching approach, even though students are more enthusiastic about using media in math lessons. As a result, they become passive during learning.

The third question was, "What is the dominant learning style in this class?" The teacher replied:

"The majority prefer the audiovisual method, but there are some quiet children who are more comfortable with visuals alone."

According to the homeroom teacher's observations, most students showed greater engagement when learning activities involved audiovisual media, while several students appeared more comfortable with visual materials. This shows that there are differences in learning preferences.

Concept Analysis

The next stage is concept analysis, which is conducted to identify the concepts to be taught and arrange them in a systematic order. The researcher conducted interviews similar to the previous stage to find out how teachers analyze teaching materials. The question was, "What steps do you take in compiling learning material concepts?" Ms. Hana replied:

"When compiling concepts for learning materials, I first analyze the materials in the curriculum, then I group them according to the material, and then I can create sub-sections for each material title in accordance with the learning objectives."

The following are the steps taken by researchers in developing digital book media based on the results of interviews with fifth-grade homeroom teachers. The first step was to analyze the learning outcomes of fifth-grade mathematics in the area of numbers, specifically the competency of performing multiplication operations with fractions and real numbers. After that, the researchers developed material on multiplication operations with fractions. The following is the sequence of concepts to be compiled in the digital book media:

- a. Introduction to fractions, types of fractions, and simplifying fractions.
- b. Understanding fraction multiplication and its formula.
- c. Sub-types of fraction multiplication consisting of:
 - 1) Multiplication of two common fractions.
 - 2) Multiplication of common fractions by whole numbers.
 - 3) Multiplication of mixed fractions by whole numbers.

- 4) Multiplication of mixed fractions by common fractions.
- 5) Multiplication of two mixed fractions.

Task Analysis

The task analysis stage is carried out to identify the tasks that must be mastered by students based on the material to be studied. In this task analysis, the researcher conducted interviews with the homeroom teacher of class VB to find out how teachers analyze the tasks to be given to students. The question was, "How do you analyze the tasks to be given to students in class VB?" Ms. Hana replied:

"Just like in concept analysis, I first conduct a CP analysis to map the basic competencies that students must achieve. These basic competencies are in the learning objectives in the CP. Then I break down the tasks, for example, in mathematics, students can mention the meaning of the material and can work on story problems."

Based on the results of the interview with the homeroom teacher of class VB, it shows that the task analysis carried out by educators is very systematic and well-planned. Mapping competencies, identifying main tasks, and designing learning activities are key steps that support the achievement of student competencies.

The following are the steps taken by researchers in conducting the digital book media development procedure at the task analysis stage based on the results of interviews with VB homeroom teachers. The first step was to map competencies based on the learning outcomes of fifth grade mathematics, specifically the element of multiplication of fractions with real numbers. After that, the researcher identified the tasks to be broken down into tasks that must be mastered by students in order to achieve competency in assessment. The research tasks given to students in this development study were tests analyzed based on the learning objectives listed in the digital book media with material on multiplication of fractions.

Formulation of Learning Objectives

The formulation stage of learning is transformed based on the analysis of material concepts and task analysis into competencies that are achieved in the form of direct behavior. The researcher conducted interviews with the homeroom teacher of class VB regarding the process of formulating learning objectives. The question was, "How did you initially formulate the learning objectives in class VB?" Ms. Hana replied:

"Of course, I refer to the CP, then I analyze the competencies according to the needs of the students so that the objectives of the competencies are achieved."

Based on the interview results, the VB homeroom teacher prioritized alignment with the curriculum and adjustment to the characteristics of the students.

The steps taken by the researcher in developing digital book media for the learning objective formulation stage based on the interview results with the homeroom teacher of class VB were to formulate learning objectives in accordance with the competencies based on the learning outcomes of the fifth-grade mathematics subject, specifically the element of multiplication of fractions with real numbers. The details of the learning objectives for the digital book media on the subject of multiplication of fractions are as follows:

- a. Students are able to understand the concept of multiplication of fractions.
- b. Students are able to calculate multiplication of fractions correctly.
- c. Students are able to integrate multiplication of fractions into their daily lives.

The define stage is the first stage, which is divided into five steps to identify and explore various sources of information related to the learning process and an overview of the problems encountered in mathematics learning at SDN 26 Southeast Pontianak. This is in line with the statement by Nurhayati et al (2023), who said that the define stage is carried out with the aim of identifying problems and finding solutions by conducting a needs analysis.

In the initial analysis of the define stage, the data collected by the researcher was through interviews with the source, Mrs. Hana Syarifah Utami, S.Pd, as the homeroom teacher of class VB at SDN 26 Southeast Pontianak. The results of the interviews in the initial analysis explained that the teaching methods often applied in mathematics lessons were lectures and assignments, which tended to result in one-way communication from the educator to the students without much interaction. The lessons rarely used media and only focused on printed books as a medium. The process of creating media takes a long time because it is used as a P5 project, which requires the involvement of students. This trigger's learning fatigue and low enthusiasm among students, so that the learning process does not run optimally.

Monotonous teaching and learning methods that rarely vary have negative impacts, including a lack of student interest in the subject, difficulty in understanding concepts, and failure to achieve the expected learning outcomes (Susanti et al., 2024). Therefore, efforts are needed to ensure that the teaching and learning process is varied. One of the efforts that can be made is to use learning media that can attract the attention of students. One form of learning media that can encourage students to actively participate in the learning process is interactive media.

This interactive media is a digital medium that allows students to explore, discover, and build learning structures according to their interests (Putra & Salsabila, 2021). Digital books are an example of interactive media that can display information in the form of text, images, audio, video, and even multimedia that involves two-way interaction (Maula & Antara, 2024). In line with the interview results stating that digital books have never been implemented in VB classes, the urgency and relevance of developing digital book media products becomes an innovation in learning.

Next, data analysis of students was also obtained through interviews with VB homeroom teachers. The interview results explained that VB students had low interest and enthusiasm for mathematics. This was because students considered mathematics to be a difficult and boring subject. This is in line with research by Kamasyani & Ain (2024), which states that some students experience problems with interest when learning mathematics. This can be seen from classroom activities where students tend to pay less attention to the teacher's explanations during lessons.

Difficulties in arithmetic operations, especially multiplication, are also caused by a lack of accuracy and understanding of basic concepts among students. According to Badriwarman (2021), students also lack understanding of the concept of fraction multiplication. This is due to a lack of approach and minimal use of media that can build students' knowledge. This makes it difficult for students to understand the concept and reduces their interest in participating in the learning process.

Interview findings indicated that the homeroom teacher perceived students to be more engaged when audiovisual media were incorporated into mathematics lessons. This finding suggests that future digital books should integrate visual and audiovisual elements to enhance student engagement rather than implying that students possess fixed audiovisual learning styles. Therefore, without media, students will become passive, and teachers can overcome this by using ice breaking. According to Serungke et al. (2023), audiovisual media presents learning material with a more dynamic approach and creates a more in-depth learning experience. Therefore, by strengthening the need for digital books that are rich in audio and visual media, the media design integrates text, images, videos, and interactive activities that emphasize flexibility and adaptation to suit various learning styles of students.

The third step, the concept analysis stage, focuses on determining and organizing learning materials. Based on the interview results, educators apply material preparation based on

learning outcomes and student characteristics. Therefore, the researcher applied this concept analysis approach with the initial activity of analyzing the learning outcomes of fifth-grade mathematics in the element of numbers, specifically in the competency of performing multiplication operations with fractions and whole numbers. After that, the researcher arranged the concepts to be compiled in the digital book. The sequence of material compilation began with an introduction to the initial concept of fractions, consisting of definitions, types of fractions, and how to simplify them. After that, it moved on to the core material, namely multiplication of fractions, consisting of the definition of multiplication of fractions, formulas, and sub-multiplication of fractions.

The next step is task analysis, which aims to identify the tasks that must be completed by students based on the material studied. Based on the interview results, educators map competencies based on learning outcomes and then identify tasks based on the expected competencies. Therefore, in the development of this digital book media, the tasks given to students are in the form of multiple-choice tests that are analyzed based on the mapping of learning outcomes and learning objectives.

Finally, there is the learning formulation activity, whose formulation analysis is transformed based on the analysis of material concepts and task analysis into competencies to be achieved. This is in line with the research by Widiyasari et al (2020), which states that learning formulation analysis is carried out by formulating task analysis and material concept analysis into indicators of learning achievement.

The procedure carried out by researchers when formulating learning objectives in digital book media is adjusted to the learning outcomes of fifth grade mathematics in the subject of fraction multiplication. Thus, the digital book media product developed is not only intended to attract students' interest in mathematics but also to serve as an indicator of student learning outcomes in accordance with the learning objectives in digital book media.

CONCLUSIONS AND SUGGESTIONS

Conclusions

The define stage consists of five steps. At this stage, interviews were conducted with the homeroom teacher of class VB at SDN 26 Southeast Pontianak. The initial analysis showed that the learning methods were dominated by lectures and assignments. In addition, digital books had never been used. The analysis of the students showed that they preferred to learn

using media. Students also had difficulty with basic mathematical concepts, especially multiplication. The researcher's concept analysis analyzed the material in accordance with the learning outcomes, and the material structure was also arranged systematically to ensure mastery of the material. The task analysis activity involved students completing tasks to measure their competency levels. Finally, the formulation of learning objectives based on learning outcomes became a guide for the development of digital books. It can be concluded that there is a need to develop digital books for mathematics at SDN 26 Southeast Pontianak. Since digital books have never been used, the development of this media has the potential to provide a new learning experience that is more interesting and in line with the characteristics of today's students who are familiar with digital technology.

Suggestions

Based on these findings, the development of digital books for mathematics is recommended as an alternative learning medium for students at SDN 26 Southeast Pontianak. The use of digital books is expected to provide a more engaging learning experience and support students' understanding of basic mathematical concepts, particularly multiplication, while also aligning with students' familiarity with digital technology.

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