Design Of Early Reading Learning Media With Digital-Based Steinberg Methods In Elementary Schools

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Abstract
This study aims to design and validate the Beginning Reading Learning Tool using the digital-based Steinberg method that meets the validity. This research is research and development research using the 4D Model. The research was conducted at Kendari State Elementary School, Indonesia. The research subjects were two media and content experts. Data collection uses observation and validation assessment sheets. The data were analyzed using descriptive statistics to determine the validity of the experimental device. The results showed that the design validation was 3.61 or was in the very valid category, and content validation was 3.76 or was in the very valid category. Thus, the learning tools for early reading learning application media using the iSpring Suite PowerPoint integration meet the validity to be used in broader school trials.

Keywords: Learning Media, Reading Beginnings, Steinberg Method, Digital Learning

Introduction
The Covid-19 pandemic has brought about many changes in various sectors, one of which is education. The Covid-19 pandemic period is a condition that causes different learning lags or learning losses in the achievement of student competencies, including students' initial reading competence. To restore learning caused by the pandemic (Ardington et al., 2021; Lerkkanen et al., 2022; Schult et al., 2022a, 2022b). The Ministry of Education, Culture, Research, and Technology (Kemendikburistek) issued a policy to develop the Independent Curriculum. This curriculum is given to education units as an option for learning recovery during 2022-2024 (Barlian & Solekah, 2022; Hilmin et al., 2022).

In this independent curriculum, teachers must always be innovative in learning. Teachers must be able to develop teaching tools that meet the curriculum's demands, without exception in learning to read the beginning of Indonesian language subjects in elementary schools (Aljawarneh, 2020; Sarmadi & Yuen, 2021). Language is critical to learn and is the key to knowledge. In other words, language is like a communication channel connecting how one's ideas, feelings, and goals can be conveyed to others, resulting in agreement, understanding, belief, and the common good. (Finkler & León-Anguiano, 2019; Varadarajan et al., 2022). Therefore, Indonesian is one of the subjects that must be studied in school. Indonesian language learning includes listening, speaking, reading, and writing skills. One of the four skills that students in elementary school must have is reading.

Overview of Education Data for 2018-2019 issued by the Ministry of Education and Culture, Indonesia, shows that the number of students who repeat or do not move up the grade is most experienced by low-grade I-III students. Students who repeated or did not move up in 2015 elementary school reached 422,082. Students repeat in the highest grade I, which is 194,967 people. In class II, the

number was 89,561 people. In class III, the figure is 65,493 people. From these data, it can be concluded that the low ability to read is the beginning of students in elementary school (SD) in Indonesia.

The development of initial reading learning tools is more targeted in their use in an independent curriculum, and these learning tools can achieve the expected goals, so the initial reading learning tools are developed using the proper methods, which can optimize students' initial reading ability and accelerate teachers and students to face the digital era (Kasmawati, Juwairiyah, et al., 2021.; Kasmawati, Sisi, et al., 2022.), then there is a need for the development of teaching devices using new digital-based methods that teachers can use in early reading learning as well as considered to have a positive effect on the growth and development of student's initial reading ability, namely by implementing an independent curriculum in the development of initial reading learning tools using the digital-based Steinberg method (Fracaro et al., 2021; Golan et al., 2022; Wiflihani et al., 2019)

Based on this, this research focuses on implementing an independent learning curriculum in designing learning tools (digital teaching modules) for early reading using the digital-based Steinberg method. Using the digital-based Steinberg method, the learning tools are packaged into beginner reading learning devices.

This study aims to design and validate an early reading learning device using the digital-based Steinberg method. The results of this study produce useful learning tools to be used by teachers and students as learning media. Furthermore, the results of this study provide a scientific reference for reading learning activities in Indonesia, especially to meet the needs of teachers and students in schools in realizing the quality and meaningful learning activities according to the characteristics of students.

Independent Curriculum

Independent curriculum is a curriculum term that applies in Indonesia. An independent curriculum with diverse extracurricular learning where content will be optimized so that students have enough time to explore concepts and strengthen competencies. Teachers have the flexibility to choose various teaching tools so that learning can be adapted to the learning needs and interests of students (Kemdikbudristek, 2021). The concept of an independent learning curriculum is the formation of independence in thinking. In this case, independent thinking is determined by the teacher, where the teacher becomes the main milestone in supporting success in education. The curriculum concept requires students to be independent in acquiring knowledge in formal and non-formal education (Manalu et al. 2022). In addition, teachers are indeed required to always be innovative in learning. Teachers must be able to develop learning tools appropriate to the level of student development.

Digital Learning Media

Developing digital learning tools that can be adapted to the needs and follow the dynamics of changing learning systems needs to be done today, especially in the 21st-century learning (Nadzirin et al., 2011). Teachers' essential digital and technology-related teaching skills are more important than digital technology resources (Skare & Riberio Soriano, 2021). Using the right technology will make teachers more productive, and students will quickly understand the learning provided (Al-Dababneh & Al-Zboon, 2022). The integration of technology with learning methods and combining with various media, video, images, audio, and animation has provided good benefits in the understanding of writing and reading of elementary school students (Wen & Walters, 2022) so that the presence of digital media can have high potential to support the learning process (Degner et al., 2022). Therefore, digital learning tools are essential to be developed further.

Starter Reading

At the beginning of the reading, the main focus of learning is that students can be literate. That is, the student must be able to

recognize letters, identify and classify letters, and string letters into syllables, words, and sentences (Yuliana, 2017). Reading this beginning begins with the introduction of vowel letters and consonant letters. After students recognize vowels and consonant letters, students are introduced to stringing the letters into a syllable. Furthermore, the introduced syllables are assembled into a simple word and sentence (Nurani et al., 2021).

Steinberg Method

The Steinberg method teaches students early reading by displaying a word and its meaning (image or direct object), understanding words without images, reading phrases/ sentences, and reading short readings/discourses (Horowitz-Kraus & Hutton, 2015). The Steinberg method can condition the level of needs of students in elementary school, whose stage procedure flow can be modified and combined with several other reading learning methods that suit the needs of students in elementary school. Five basic principles can optimize reading results in children. The five principles are reading material that involves meaningful words, phrases, and sentences, reading depends on the comprehension of the lesson, reading does not depend on teaching new concepts or languages, and learning to read should be fun (Ramadhani, 2022). According to Steinberg, there are four stages in teaching early reading, namely: (1) introduction of words and their meanings/objects, (2) understanding words (reading words without pictures), (3) reading phrases or sentences, (4) reading short discourses (Steinberg, 1982, Thiagarajan, 1974)

Methods

Research Design

The type of research used is the Four D (4D) Research and Development model consisting of defining, designing, Developing, and Disseminating (Sivasailam Thiagarajan, Dorothy S. Semmel, 1976). According to the purpose of the study to validate learning tools, the stages only come to the stage of development design validated by experts. The stages of designing and validating learning tools in this study have the following stages of research:
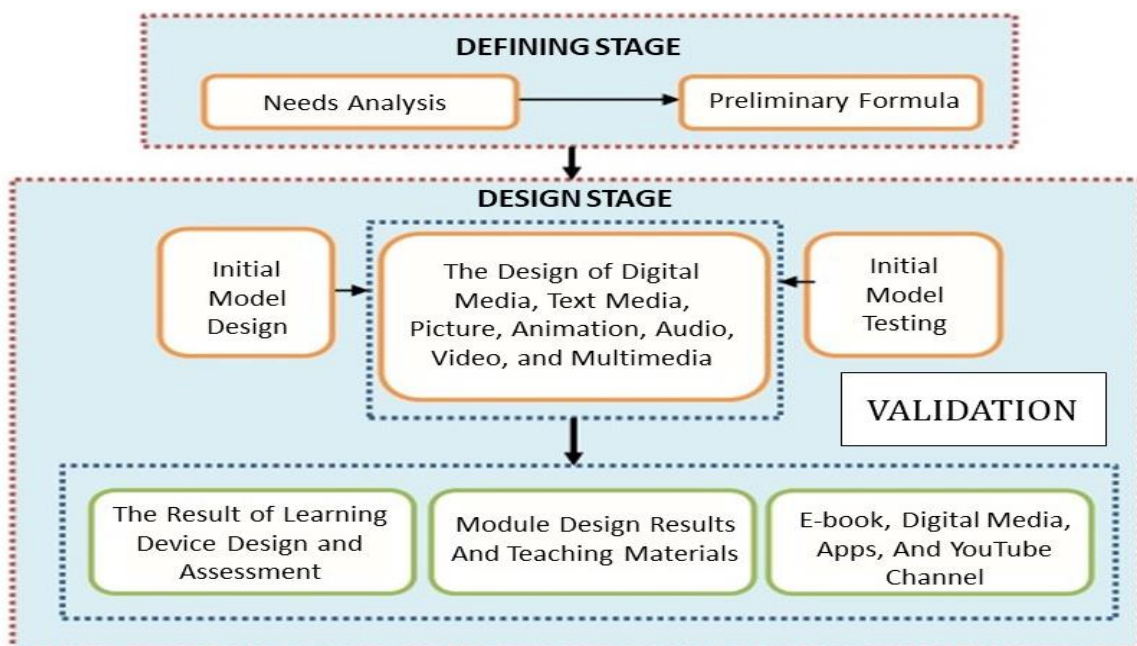

Figure 1. Stages of research on the design and validation of learning media

Location and Subject of Research

The study was conducted at the Kendari State Elementary School, Southeast Sulawesi, Indonesia. The study subjects were two experts from the field of expertise in Indonesian language and learning media.

The data sources in this study are students and teachers for the defined stage data and validity assessment scores provided by validators for the design/validation stage data.

3.3 Instruments and procedurals

The validation sheet instrument consists of a media validation assessment sheet/learning device design and a learning device content validation sheet. The media validation sheet/learning device design has several assessment indicators, such as the suitability of the presentation of the image, the color of the display, the accuracy of size, type, and selection of letters, then the quality of images and videos and background colors. As for the content validation sheet, the learning tool has several assessment indicators, such as clarity of learning objectives, use of images and audio, depth of material, clarity of media in delivering the material, suitability of quizzes, and the language used. The scoring score using the four-point Likert scale strongly agrees=4, agrees=3, disagrees=2, strongly disagrees=1.

3.4 Analysis data

The data were analyzed statistically descriptively, namely by determining the score value of the validity of the learning tools of each instrument. Statistical analysis using the Microsoft Excel program.

Results & Discussion

Define Stage

At this stage of defining, a formulation of (1) the initial conditions of planning and learning early reading in Grade I Elementary School and (2) learning tools needed by teachers and students in early reading learning in Grade I Elementary School are produced.

Curriculum Analysis: The results of preliminary observations in the field related to the planning and learning process of reading the beginning obtained information on the implementation of Learning class I Basic from the beginning to the completion of learning hours are seen: (1) The learning process in the classroom, not by the syllabus and lesson plan (RPP) compiled by the teacher; (2) The application of early reading learning uses a monotonous, less pleasant way, and the teacher does not activate the student; and (3) The student has not been trained to communicate his learning outcomes.

In terms of the textbooks used in learning to read the beginning, it is not in accordance with the reading ability and characteristics of Class I elementary school students. Where textbooks are used as references in schools, the material is not packaged according to reading abilities and the developmental needs of students, where the textbooks used begin with a reasonably long discourse and the textbooks used have not been compiled based on the correct beginning reading method.

Student Analysis: Students already know the letters but cannot yet read. In addition, they have different backgrounds, environments, and cultures. Elementary school students have diverse reading abilities. The results of observations and data on reading learning outcomes that were carried out showed that Class I elementary school students were in the category of already reading fluently 11 people, able to read sentences of 12 people, able to read 6 words, who only knew 3 letters.

The student's response to learning to read, as stated in the initial analysis, is less fun; students are not active and even tend to be lazy to learn to read. Students have not been trained to communicate their learning outcomes. Class I students tend to have high mobility. Only sure students are able to sit for a long time and pay attention during the lesson. Other students tend to move to other activities in the classroom immediately. When the teacher checked the students' work, other students who did not get a turn did other activities in the class, such as running and talking with other friends. Thus, students tend to like activities that require movement, are fun, and are enjoyable. These characteristics are taken into consideration in developing learning tools for beginning reading. Another consideration when viewed from the level of cognitive development, according to Piaget, Grade I Elementary

School students are in the concrete operational stage because their average age is six years. Children no longer think intuitively but think logically but only in concrete situations. At this stage, abstract problems are challenging for children to accept. Referring to Piaget's theory, early reading learning in Grade I Elementary School must start from the concrete to the abstract, from the simple to the complex.

Based on the series of defined stages carried out previously, it can be concluded that; the curriculum, syllabus, learning implementation plans, learning processes, and teaching materials implemented have not been able to accommodate differences in reading ability and characteristics of Grade I elementary school students. This results in students' reading abilities being unable to develop optimally. Therefore, it is necessary to develop learning tools with the following characteristics:

1. It is combining an independent learning curriculum that aims to lead students to achieve initial reading goals/competencies.
2. Reflects the learning process that awakens the schemata and readiness of children in learning, by the stages of early reading learning and the stages of child development, namely the concrete operational stage: reading the beginning in Grade I Elementary School must start from concrete to abstract things, from simple to complex things. Then, involve students in learning activities so that the child is not notified but finds out that he is actively fostering his knowledge. Early reading learning is designed into activities and games so that learning is fun,

impacting students not only learning to read but also wanting to read.
3. Combined application in the design of early reading textbooks can accommodate differences in reading ability and student characteristics. The stages are initial reading stages, which are easy to learn, organized, systematic, interesting, challenging, stimulating, and supporting student activities and creativity.

After knowing the description of the initial reading learning tools used today and the learning tools needed, the next stage is designing a preliminary reading learning tool based on the Steinberg method.

Design Stage

At the stage of designing the Media Learning Application, reading started using the iSpring Suite powerpoint integration. iSpring is a software that integrates with PowerPoint. The reason for choosing this application is that it allows teachers to create more exciting and easy learning media so that teachers do not need complicated skills. The learning media generated by iSpring will be a kind of application that can run on Android-based smartphones so that this learning media can be used when students are at home or when learning distances. The main menus of the initial reading application are; (1) let's sing, (2) let's learn, (3) let's play, (4) let's do it, (5) let's recite, (6) let's practice, and (6) let's read. More specifically, the design results of this medium are presented in the following figure:

Figure 2. App start view

Figure 3. The main menus of the application

Figure 4. Menu, let's read

Learning Device Validation Results

The data from the expert validator test on the learning development product and validated by the validators of two experts from the scientific field of Indonesian language content and learning media/design.

Media/design validation results on learning devices: Information about the data on the level of validity of learning devices based on tests by expert validators can be seen in the following table.

Table 11. Design Validation Test Result Data on learning devices

No	Assessed Aspects	Experts Opinion & Rating Scale	Average	Category
1.	Interesting color combinations	3	3,0	Valid
2.	The suitability of the presentation of the image with the material discussed	4	4,0	Very Valid
3.	Image design gives a positive impression so that it can attract interest in learning	3	3,0	Valid
4.	Suitability of display and background colors	4	4,0	Very Valid
5.	accuracy of letter size	3	3,0	Valid
6.	Accuracy of font selection	4	4,0	Very Valid

7.	Image and video quality is already good	4	4,0	Very Valid
8.	The selection of images in learning media is appropriate	4	4,0	Very Valid
9.	Interesting color combinations	3	3,0	Valid
10.	Selection of the appropriate image position	3	3,0	Valid
11.	Selection of the appropriate text position	4	4,0	Very Valid
12.	Background color matches text and image color	4	4,0	Very Valid
13.	The background display is already attractive	4	4,0	Very Valid
	Total	47	47,0	
	Total average	3,61	3,61	Very Valid

Table 1 shows the results of the design expert test/learning media containing learning tools consisting of modules and initial reading application media, generally stated to be very valid. It can be seen from the thirteen (13) items that are in the very valid and valid category. So that it can be concluded that the level of validity of learning tools consisting of teaching modules and initial learning application media developed reaches a score of 47, if converted into the criteria of validity, reaches an average score of 3.61 or is in the very valid category.

Content validation results on learning media: Information about the data on the level of validity of learning devices based on tests by expert validators can be seen in Table 2 below.

Table 22. Content Validation Test Result Data on learning devices

No	Assessed Aspects	Experts Opinion & Rating Scale	Average	Category
1.	Clarity of formulation of Learning Objectives	4	4,0	Very Valid
2.	Learning Materials in accordance with learning objectives	3	3,0	Valid
3.	The use of images and audio in learning materials is appropriate	3	3,0	Valid
4.	Into the material on the learning media	4	4,0	Very Valid
5.	Learning materials in accordance with the development of students	4	4,0	Very Valid

6.	Clarity of media in delivering learning materials	4	4,0	Very Valid
7.	Compatibility of quizzes with learning objectives	4	4,0	Very Valid
8.	Compatibility of the quiz with the characteristics of the participants	4	4,0	Very Valid
9.	quiz includes all the material	3	3,0	Valid
10.	The language used corresponds to enhanced spelling (EYD)	4	4,0	Very Valid
11.	The language used is easy to understand	4	4,0	Very Valid
12.	The sentences used in learning media are clear	4	4,0	Very Valid
13.	The language used in the delivery of questions is in accordance with the level of thinking of students.	4	4,0	Very Valid
	Total	49	49,0	
	Total average	3,76	3,76	Very Valid

Table 2 shows the content expert's test data on the validity of which a ran defender device consisting of a module and a preliminary reading application medium is generally stated to be very valid. It can be seen that thirteen (13) items meet the category of very valid and valid. It can be concluded that the level of validity of learning tools consisting of teaching modules and initial learning application media developed reaches a score of 49, if converted into the criterion of validity reaches an average score of 3.76 or is in the very valid category.

Conclusion & Recommendations

The design process for early reading learning devices using the Steinberg method uses a two-stage Four-D model development procedure, namely, define and design. The results of the validation assessment by two validators showed that the design of learning devices made met the validity with the average score of the validity of the design/media learning device being in the very valid category, and the average score of the validation of the learning device content being in the very valid category. Thus, the learning device, namely the initial reading learning application media using the iSpring Suite PowerPoint integration, has been declared valid for use and can be tested on teachers and elementary school students.

The media for early reading learning applications using the PowerPoint integration iSpring Suite can be used as a model for further researchers who are interested in continuing and conducting research on the development of digital learning tools in other subjects in elementary schools to the development and dissemination stages.

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