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Development of Linktree-Based Learning Media through the Discovery Learning Approach to Improve the Reading Comprehension Ability of Students in Grade V of SD KKM 1 Makassar City

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ABSTRACT

This study aims to examine the prototype, validity, practicality, and effectiveness of developing a Linktree-based learning media through a discovery learning approach to enhance reading comprehension skills of fifth-grade elementary school students. The research was conducted in KKM I, Makassar City, with Trial I implemented at MI At Taqwa and Trial II at MI Yaa Bunayya. The method employed was Research and Development (R&D) using the Four-D development model. The results indicate that the Linktree-based media prototype presents content not only in textual form but also through instructional videos and historical videos relevant to the subject matter, supplemented by interactive quizzes to foster engaging and interactive learning. The media and content validation results fall into category D with a reliability value of 1 based on Gregory's test. Media practicality is demonstrated by observation scores averaging 1.00, teacher response questionnaires averaging 0.93, and student response questionnaires averaging 0.99, with an overall practicality average of 0.97%. The media's effectiveness is reflected in the improved reading comprehension scores: in Trial I, from 56–65 to 78, and in Trial II, from 69 80 to 80–96. These results confirm that the Linktree-based learning media through a discovery learning approach is more effective than conventional textbook-based learning.

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INTRODUCTION

Education is a conscious and planned effort to grow and develop the physical and spiritual abilities of students as a whole so that they can face life's challenges and contribute to nation building. Education not only serves as a tool for self-development, but also as the main foundation in producing superior human resources. In this process, learning in schools has a central role in shaping creativity, critical thinking skills, and 21st century skills needed in the global era. The quality of human resources is highly determined by the ability to access, understand, and develop science. In the context of Indonesian language learning, the ability to

read and comprehend is a key competency that must be mastered from the basic education level. This skill includes the ability to understand the meaning of the text, draw conclusions, and respond critically to the content of the reading.

However, various studies and experiences in the field show that many elementary school students have difficulty in understanding reading, answering questions, and summarizing the content of the text. (Talk, 2024) Along with the development of global technology, the world of education has undergone a significant transformation. Learning is no longer limited to face-to-face interaction and the use of printed books alone, but has shifted to the use of digital media that is interactive and flexible (Lytridis 2019. In this context, digital literacy is an important skill that students must have. However, the reality is that there are still many teachers who have not made optimal use of digital learning media, so learning tends to be passive and less interesting for students. (Listiqowati 2021). The increasing complexity of digital in the world of education provides both challenges and opportunities for educators.

One relevant solution is to create an adaptive and interactive virtual learning environment, such as the use of digital platforms that support independent and collaborative learning. Unfortunately, many teachers still use conventional lecture methods and media that are not in accordance with the characteristics of current students. This shows the urgent need to reform media and learning models. One potential medium is Linktree, a digital platform that was originally used to bring together various links on a single page. Through design adjustments, Linktree can be used as a learning medium that accommodates various materials in the form of texts, videos, and quizzes. The ease of access and flexibility in its use make this media relevant to the needs of elementary school students who demand learning that is easy to understand, engaging, and can be accessed at any time. (Chumsukon, 2021).

The results of initial observations showed that students had difficulty in understanding the reading text, answering questions, and concluding the content of the reading. In addition, the teacher said that reading learning in the classroom is still conventional and does not involve interactive media. Thematic books are the only source of learning, so students are less motivated to read actively. This fact shows that learning to read requires a more innovative approach and in accordance with technological developments. The gap between current learning practices and the use of digital media such as Linktree combined with the discovery learning model is the main basis for this research. Previous research has focused on the effectiveness of discovery learning and digital media separately. However, there are not many who integrate the two to improve reading comprehension skills, especially at the elementary school level. This gap is the gap in this research, as well as showing the potential novelty of the approach offered. This research takes a position as a reinforcement as well as a complement to the previous research. On the one hand, this research supports the effectiveness of discovery learning in encouraging students to think critically and be active in learning.

On the other hand, this research offers a new innovation in the form of the integration of the Linktree platform as a supporting medium in reading learning. This combination is expected to be an interactive, flexible, and effective alternative learning model in improving students' reading comprehension. Based on this description, the purpose of this study is to develop Linktree-based learning media that is integrated with the discovery learning approach to improve the reading comprehension ability of grade V elementary school students. This research is titled: "Development of Linktree-Based Learning Media Through the Discovery Learning Approach to Improve the Reading Comprehension Ability of Grade V Students of SD KKM I Makassar City."

METODE

This research uses a Research and Development (R&D) approach by adopting the Four-D (4D) development model developed by Sivasailam Thiagarajan, which consists of four main stages: Define, Design, Develop, and Disseminate. This model was chosen because it has systematic, structured, and appropriate characteristics for developing learning media, especially Linktree-based media with a discovery learning approach to improve the reading comprehension ability of grade V elementary school students at KKM I Makassar City.

Development Procedure

The implementation of the 4D model in this study was carried out through the following stages:

1. Defining Stage

   This stage aims to identify the learning needs and main problems faced by students related to reading comprehension skills. The analysis is carried out through preliminary studies, analysis of student characteristics, analysis of assignments and concepts of teaching materials, and determination of learning objectives. In addition, at this stage, research instruments such as validation questionnaires, student and teacher response questionnaires, as well as pre-test and post-test questions were also prepared.
2. Design Stage

   At this stage, the researcher prepared an initial design of Linktree-based learning media. The design includes the selection of media and the format of presenting the material, organizing the content, and making the initial design of the media. The design is then revised based on input from the supervisor before entering the initial production stage and expert validation.
3. Development Stage

   This stage includes a validation process by media experts and subject matter experts, as well as limited trials and large-scale trials. Validation is carried out to assess the feasibility and quality of learning media. The revision is carried out based on input from experts. The limited trial involved students and teachers to determine the initial response and effectiveness of the media, while the large-scale trial was used to assess the effectiveness of the media in improving students' reading comprehension skills more broadly.
4. Disseminate Stage

   This phase is the final stage that aims to disseminate the Linktree-based learning media products that have been developed. The dissemination is carried out by providing media access to teachers and target schools and publishing research results in scientific journals so that they can be used by other educators.

Product Trials

1. Trial Design

   The trial is carried out through two main stages: validation by experts and implementation to students. A feasibility test is carried out before the media is applied in learning, followed by an effectiveness test through tests and questionnaires.
2. Trial Subject

   The subjects of this study consisted of two groups: (1) material experts and media experts who were in charge of media validation, and (2) class V students from MI At-Taqwa

and MI Yaa Bunayya at KKM I Makassar City who became media users during the trial process. Teachers play the role of facilitators in the use of these media.

Types of Data and Collection Instruments

1. Qualitative Data

   This data was obtained from the results of expert validation as well as the responses of students and teachers to learning media. Data in the form of comments, criticisms, and suggestions are used as material for media improvement.

2. Quantitative Data

   The quantitative data in this study consists of three main components. First, the score of the learning media validation results provided by material experts and media experts, which is assessed using a Likert scale of 1 to 5 based on the feasibility aspects of content, display, and presentation. Second, pre-test and post-test scores are used to measure the improvement of students' reading comprehension skills before and after using Linktree-based media in the learning process. Third, quantitative data was also obtained from the questionnaire scores of students' responses to the use of learning media, which reflected the level of involvement, ease of use, and students' perception of the effectiveness of the media.

3. Research Instruments

   To support data collection in this study, several types of instruments were used that were systematically designed. The first instrument is an expert validation sheet, which is used to assess the feasibility of media in terms of content and design by media experts and subject matter experts. The second instrument is a pre-test and post-test reading comprehension questions, which aim to measure the extent of the influence of media use on improving students' reading skills. The third instrument is a student and teacher response questionnaire, which is compiled using an assessment scale to determine the level of acceptance, practicality, and effectiveness of Linktree-based learning media in the context of classroom learning.

RESULTS AND DISCUSSION

This research aims to develop and test Linktree-based learning media that is integrated with the Discovery Learning approach to improve the reading comprehension ability of grade V elementary school students. The development process uses a 4D model (Define, Design, Develop, Disseminate). The results of the research are discussed in a structured manner based on the aspects of prototype, validity, practicality, effectiveness, and final product specifications.

1. Linktree-Based Learning Media Prototype

   The development of the prototype began with a needs analysis that showed the low reading comprehension ability of students and the limitations of the media used in the classroom. Based on these results, learning media was developed using the Linktree platform, which integrates various learning resources, such as text, videos, and interactive quizzes in one link. This media is structured with a Discovery Learning approach, where students are directed to explore and understand the material independently. This media consists of several main menus: Creation Instructions, Usage Instructions, Narrative Text Materials, History Videos, Quizzes, History Story Texts, and Developer Profiles. These features are designed to create learning that is interactive, engaging, and appropriate to the characteristics of elementary school students. The diversity of content and interactivity of this media strengthens its function in supporting reading comprehension.

2. Validity of Learning Media

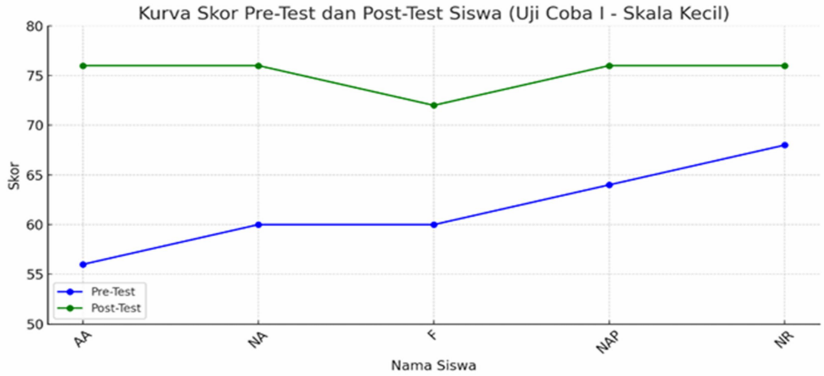
Media validation is carried out by media experts and material experts. The validation results showed that the media was in the "suitable to use" category with a high reliability score (category D). The design aspects, technical functions, and accuracy of the material have been declared to meet basic learning standards. This validation proves that the developed media can be used in the learning process to improve students' reading comprehension.

Table 1. Media Validation Results by Two Experts

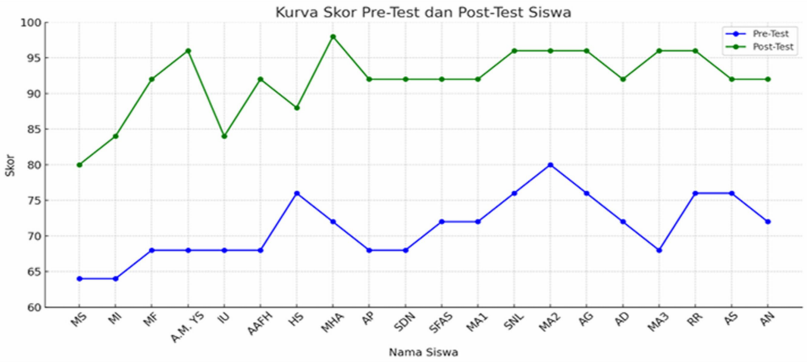
No	Assessment Aspects	Validator I	Validator II	V	Category
1.	Image and text display balance	4	4	4	D
2.	Suitability of the selection of the backround with the characteristics of the students	3	4	3,5	D
3.	Compatibility of the proportions of backround, text and image warrants	4	4	4	D
4.	Suitability of typeface selection	4	3	3,5	D
5.	Suitability of font size selection	4	3	3,5	D
6.	Suitability of letter color selection	4	4	4	D
7.	Image size suitability	4	4	4	D
8.	Image resolution	4	4	4	D
9.	Image and word placement appropriate	3	4	3,5	D
10.	The presentation of material in the media is clear and easy to understand	3	4	3,5	D
11.	There is an easy-to-understand media usage manual	3	4	3,5	D
12.	The use of images, videos, or other media in the linktree helps clarify the learning material	3	4	3,5	D
13.	Instructions or explanations in the linktree are clearly presented without confusing students	3	4	3,5	D
14.	Media facilitates the learning process	4	4	4	D
15.	Media makes it clear and easy to convey messages	4	4	4	D
16.	The media can provide clarity to the material	4	4	4	D
17.	Using language that is in accordance with the rules of the Indonesian language that is correct	4	4	4	D
18.	The communicative nature of the language used is in accordance with the rules of good and correct Indonesian language	4	4	4	D
19.	Use simple, easy-to-understand language	4	4	4	D
	TOTAL CATEGORY D 19				

These results are in line with previous research (Andika & Yudiana, 2022; Muttaqiin & Sopandi, 2021; Hatiningsih & Hanik, 2023) which states that Linktree-based digital media and the Discovery Learning approach significantly contribute to increasing literacy and student involvement in the learning process. 3. Practicality of Learning Media The practical aspect was evaluated through observation of the implementation of learning and the responses of students and teachers to the media.

a. Trial I (Small Scale): Involving 5 students, with an average observation result of 0.75 (observers) and 0.60 (teachers), which is included in the "implemented" category. The students' response showed an average score of 0.83, indicating a fairly high enthusiasm, although there were some initial obstacles in the use of the media.



b. Trial II (Large-Scale): Involving 20 students. The implementation of learning increased significantly, with an average of 1.00 (observers) and 0.93 (teachers). The average student response also increased to 0.99. Interactive media features such as videos, quizzes, and hyperlinks are considered very helpful in understanding the material.



This data shows that Linktree media is practically used by both teachers and students, and has succeeded in increasing engagement in the learning process. 4. Effectiveness of Learning Media The effectiveness of the media was measured through a comparison of students' pre-test and post-test results. a. Trial I: Pre-test scores range from 56–68, increasing to 76–80 on post-test. b. Trial II: Pre-test scores range from 64–80, increasing to 80–96 on post-test. All students showed an increase in scores after using the media, which indicates that Linktree-based learning media is effective in improving students' reading comprehension skills. These results are reinforced by the studies of Anggaraini & Rozi (2022) and Prastiya et al. (2023) who found that Linktree media is very effective and practical for basic learning. This research reinforces previous findings by presenting innovations in the form of Linktree media integration and Discovery Learning approaches that focus on active student engagement. The media not only presents the material in the form of visuals and text, but also inserts reflective quizzes to ensure understanding. This approach makes a new contribution to optimizing the use of Linktree for literacy learning in elementary schools.

CONCLUSION

Based on the results of the research, it can be concluded that the development of Linktree-based learning media with the Discovery Learning approach to improve the reading comprehension ability of grade V elementary school students is carried out systematically starting from analyzing field needs, determining learning objectives, selecting materials, to designing media. This media is designed to be interactive by presenting material in the form of texts, learning videos, and historical videos, and is equipped with reflective quizzes to test students' understanding. The results of the validation test showed that this medium was very valid with a Gregory reliability value of 1, indicating a perfect agreement between the validators. From the practical aspect, the media was declared easy to use by teachers and students with an increase in implementation from 0.73 in the first trial to 0.97 in the second trial. In terms of effectiveness, this media has been proven to be able to significantly improve students' reading comprehension skills, as shown by the increase in pre test and post-test results in both small-scale (from 56 to 76) and large-scale (from 64 to 96) trials. Thus, Linktree-based learning media through the Discovery Learning approach has been proven to be valid, practical, and effective in improving the reading comprehension skills of elementary school students.

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