

DEVELOPMENT OF DIGITAL LITERACY GAME MEDIA FOR GRADE IV ELEMENTARY SCHOOL STUDENTS

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Abstract

Low interest in reading affects the quality of education so that tools in the form of learning media are needed to increase students' reading interest which is relatively low due to the impact of the rise of online entertainment and games. The purpose of this research is to develop digital game media in increasing the reading interest of grade 4 elementary school students. From these problems, researchers developed a digital literacy game media in the form of developing a word guessing game application equipped with energy-saving themed reading materials to increase students' reading interest. The development of this game media not only focuses on students' reading interests but also insight into energy-saving knowledge around. This research uses the type of Research and Development (R&D) research according to Borg and Gall. Data analysis techniques carried out include preliminary studies, product development, validity tests and conclusions. From the results of the material expert validity test, it showed a score of 88% in the very high category and the validation results by media experts obtained a score of 85.6% in the very high category. So that the results show that digital literacy game media is qualified and suitable for use.

Keywords: digital literacy; game media; reading interest

Abstrak

Rendahnya minat baca mempengaruhi mutu pendidikan sehingga diperlukan alat bantu berupa media pembelajaran untuk meningkatkan minat baca siswa yang tergolong rendah akibat dampak dari maraknya jenis hiburan dan game online. Tujuan dilakukan penelitian ini yakni untuk mengembangkan media permainan digital dalam meningkatkan minat baca siswa kelas 4 Sekolah dasar. Dari permasalahan tersebut peneliti mengembangkan sebuah media permainan literasi digital berupa pengembangan aplikasi permainan tebak kata yang dilengkapi bahan bacaan bertema hemat energi untuk meningkatkan minat baca siswa. Pengembangan media permainan ini bukan hanya fokus pada minat baca siswa tetapi juga wawasan terhadap pengetahuan hemat energi disekitar. Penelitian ini menggunakan jenis penelitian *Research and Development* (R&D) menurut Borg and Gall. Teknik analisis data yang dilakukan meliputi studi pendahuluan, pengembangan produk, uji validitas dan penarikan kesimpulan. Dari hasil uji validitas ahli materi menunjukkan skor 88% dalam kategori sangat tinggi dan hasil validasi oleh ahli media diperoleh skor 85,6% dalam kategori sangat tinggi. Sehingga dari hasil tersebut menunjukkan bahwa media permainan literasi digital memenuhi syarat dan layak untuk digunakan.

Kata Kunci: Media Permainan; Literasi digital; Minat baca.

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Introduction

The rise of online entertainment and games greatly affects students' reading interest in the current era of digitalization. Interest in reading affects the form and identity of a person in determining his goals in the future, it becomes part of the process of self-development that must always be honed because interest in reading is not obtained from birth. Low interest in reading will affect the quality of education, therefore interesting tools are needed to foster students' interest in reading (Sari et al., 2017). As well as digital literacy game media intended

for elementary school students with an attractive design (Abidin, 2022). This media was developed to increase students' low reading interest due to the rise of online game entertainment. Digital literacy game media is designed as much as possible with several interesting features such as word guessing games, learning videos, reading materials and evaluations as a measure of how understanding children understand the material delivered in the application. This is used as a form of increasing students' low literacy and reading interest (Safitri et al., 2019).

According to UNESCO data, the literacy rate in Indonesia is quite low, this is evidenced in research entitled *World's Most Literate Nations Ranked* done by Central Connecticut state University in March 2006, Indonesia was declared to be ranked 60th out of 61 countries on reading interest (Nahdi & Jatisunda, 2020). Meanwhile, the United Nations Educational, Scientific and Cultural Organization stated that the presentation of students' reading interest in Indonesia only reached 0.01%, so it can be said that out of 10,000 children in Indonesia, only one student has an interest in reading (Amri & Rochmah, 2021).

The low literacy in Indonesia, especially when viewed from the reading culture of elementary school students, can be said to be still very weak. This is due to several factors such as the low quality of education, inadequate facilities and lack of learning innovations carried out by teachers (Prasrihamni et al., 2022). Therefore, the Ministry of Education and Culture through Ministerial Regulation No. 23 of 2013 implements the School Literacy Movement (GLS) as a participatory effort involving all school residents to implement it (Tapiyah, 2022). In its implementation, the Ministry of Learning and Culture formed a working group of the National Literacy Movement (GLN) as a coordinator of literacy activities that have been managed by the work unit which aims to foster student motivation and reading habits as well as student character through book reading activities (Perdana & Suswandari, 2021).

Literacy activities are very important for the advancement of education, especially in the implementation of the Independent Curriculum in schools where student literacy and numeracy are emphasized more in the learning process. The Merdeka Curriculum offers a simple and flexible curriculum structure, focusing more on essential materials, and character development in the form of a project to strengthen the profile of Pancasila students (Rahayu et al., 2022). The independent curriculum is present as a solution to the intense competition for human resources globally in the era of society 5.0, where humans and technology experience development side by side (Jumanto & Mustofa, 2023). In the application of the Independent Curriculum, students are expected to be able to think critically, communicate, collaborate and have high creativity (Taufina & Chandra, 2017). So that learning at this time is required to use knowledge and technology in the development of students to form a creative, innovative and competitive generation.

At this time the development of information and communication technology is very rapid in various sectors including the education sector. However, it turns out that there are still many teachers who have not utilized technology optimally in the learning process (Ngaka & Masagazi, 2015). One of the popular reasons is because of the limited media facilities as support. Even though technology can be used to attract interest in learning and make it easier for teachers to deliver material so that it is easy for students to understand (Maritsa et al., 2021). In addition, technology-based media is designed to be accessible at any time so that students can repeat material outside of learning hours, because technology in its use is effective and efficient.

One strategy that teachers can do in learning is to choose technology-based learning media (Sutinah & Ristiana, 2023). Technology-based learning media can maximize all students' senses when learning in the hope that learning will be more meaningful (Widianto, 2021). Using technology-based learning media such as digital can be a key to increasing interest in reading, especially elementary school students. In addition, learning media packaged in the form of games makes its own attraction for students to increase students' reading interest.

Increasing students' reading interest through the application of game media can affect students' imagination and critical thinking (Naryatmojo, 2019). Especially when the game is packaged in the form of an M-Learning application which is not new for students. The rapid development of M-Learning has become part of the educative process (Criollo-C et al., 2021). However, due to the limited ability to maximize smartphones as M-Learning media, this type of learning has not been widely used. Even though if you look at statistical data about smartphone usage, M-Learning is very ready to be applied. (Apriadi et al., 2021) In accordance with data from the Ministry of Ministry of Ministry of Information that the number of smartphone users in Indonesia has reached 167 million people or 89% of the total population of Indonesia.

One of the efforts that can be made to overcome the low interest in reading in students is to develop a digital literacy game media product in the form of an application tailored to student needs. Based on the results of interviews with grade IV teachers of SD 4 Getas Pejaten, information was obtained that grade IV students have not been maximized in learning activities, especially in subjects that have a lot of reading, namely Indonesian and Science. Therefore, the low interest in reading in students makes the learning process less effective and efficient (Puspitasari & Rahmawati, 2021).

The development of game media in the form of applications has previously been carried out by several researchers, including the development of cultural map games by (Megawaty et al., 2021) the final result of this research is in the form of a map recognition and Sumatran culture game application that can be run via an android-based smartphone. This application has been tested on elementary school students with an average score of 94% students in the excellent category. Meanwhile, the development of application-assisted educational science media games is also carried out by (Indra & Fitria, 2021). From the results of research that has been done shows that the application products that have been produced are declared suitable for use. In addition, from the effectiveness test obtained an average value of 85.

Looking at the results of previous research and problems in the field, researchers are encouraged to develop digital literacy learning media. The novelty of digital educational game media with previous research is in terms of the material raised. The material raised in this study is material with the theme of saving energy which is packaged in the form of an educational word guessing game. In addition, there is an addition of learning video features in the application to attract students' learning interest.

The purpose of this study is to produce digital literacy game media development products that are designed as attractive as possible with simple language styles, grammar, and vocabulary in elementary school-age students so that they are easy to understand. This digital literacy game media can be used by teachers as a bridge in delivering material about energy-saving materials around with the hope that students are interested and able to increase students' reading interest. In addition, it also adds insight into the benefits of energy around them. Therefore, in order to solve the above problems, a product will be developed in the form

of a guessing digital literacy application with energy-themed materials and reading materials for grade IV elementary school students. For this reason, the purpose of this research is to produce digital literacy game media products with energy-efficient materials that are tested feasible by media experts and material experts to be used in grade IV elementary school students.

Research Methods

The type of research used is Research and Development (R & D) with a percentage qualitative descriptive analysis approach. Research and Development is a method used in a study to produce a product and test the effectiveness of a product. According to (Nurmalasari & Erdiantoro, 2020) R&D is the process of developing a new product, as well as products that have previously been used and the products developed can be accounted for. In this study, the product that will be produced is a digital literacy game media in the form of an application to increase the reading interest of grade IV elementary school students with energy-saving themed materials.

This research uses the theory of Borg and Gall which includes 3 steps out of 10 existing steps, namely to the stage of validity testing by media and material experts. The first stage is to conduct a preliminary study. At this stage researchers conduct case studies by collecting information and problems that occur in literacy through interviews, observation of relevant money library sources. From the results of preliminary studies that have been carried out, then researchers design and design the initial product draft to be developed. The second stage is development, at this stage after making the initial product draft of digital literacy media, researchers create material, create game designs with attractive images, and complete it with several features such as the word guessing game menu, literacy menu, learning video menu and evaluation menu. Meanwhile, in the last stage, namely conducting validity tests by material expert lecturers and media expert lecturers to test the feasibility of learning media using assessment instruments that have been prepared

The data analysis technique used in the development of this game media uses descriptive qualitative percentages. The instrument collects the data used, namely questionnaire sheets of material experts and media experts with measurements using a Likert scale of 1 to 5. The data obtained comes from the results of media and material expert validation tests, then the score is in percentage using the following formula:

$$AP = \frac{\text{Skor Aktual}}{\text{Skor Ideal}} \times 100\%$$

Information:

- AP : Percentage Number
 Actual Score : The score provided by expert validators
 Ideal Score : Max score

After the percentage is carried out using the formula above and producing the AP score (percentage number), the next step is to group it into categories as follows:

Table 1. Categories of percentage number results

Interval	Category
81-100 %	Very High
61-80 %	Tall
41-60 %	Enough

21-40 %	Low
0-20 %	Very Low

Based on the categories from the table above, the results of the media validation test and digital literacy game media materials can be said to be feasible if the minimum percentage reaches the high category, namely > 61%.

Results and Discussion

The preliminary study was carried out by conducting student observations and interviews with grade IV teachers of SD 4 Getaspejaten Kudus to find out the need for learning media. Based on the results of interviews with grade IV teachers, it was found that one of the obstacles to learning difficulties in grade IV students was caused by the lack of interest in reading students and the lack of learning media that suits the characteristics of students in the digital era. Agreeing with this (Agustina et al., 2022) in their research said that the reading interest of grade IV students is still low so interactive learning media is needed to increase students' reading interest. One of the media that is suitable for use is digital application media. (Simbolon, 2022) in his research said that there is an influence of digital literacy on students' reading interest, so the use of digital application game media is suitable for increasing students' reading interest independently through interesting features (Firdaus et al., 2022).

Based on the study of existing problems, researchers decided to develop digital literacy game media in the form of applications to increase students' reading interest. Digital literacy game media carries energy-saving material on all theme features in the application. The features in the digital literacy game media are the main menu, game menu, literacy menu, hint menu, evaluation menu and exit menu. Here is a look at the energy-saving digital literacy game media.



Figure 1. Main menu display

In the main menu display there is a phrase " Welcome " which is a form of warm welcome to application users. In the main menu there are 5 main buttons that can be selected including, the start playing button to enter the word guessing game, the literacy button which contains student reading materials equipped with learning videos, the instruction button contains instructions for using game media, the evaluation button contains evaluation questions that can be done by students and the last exit button to make it easier for students to exit the application.

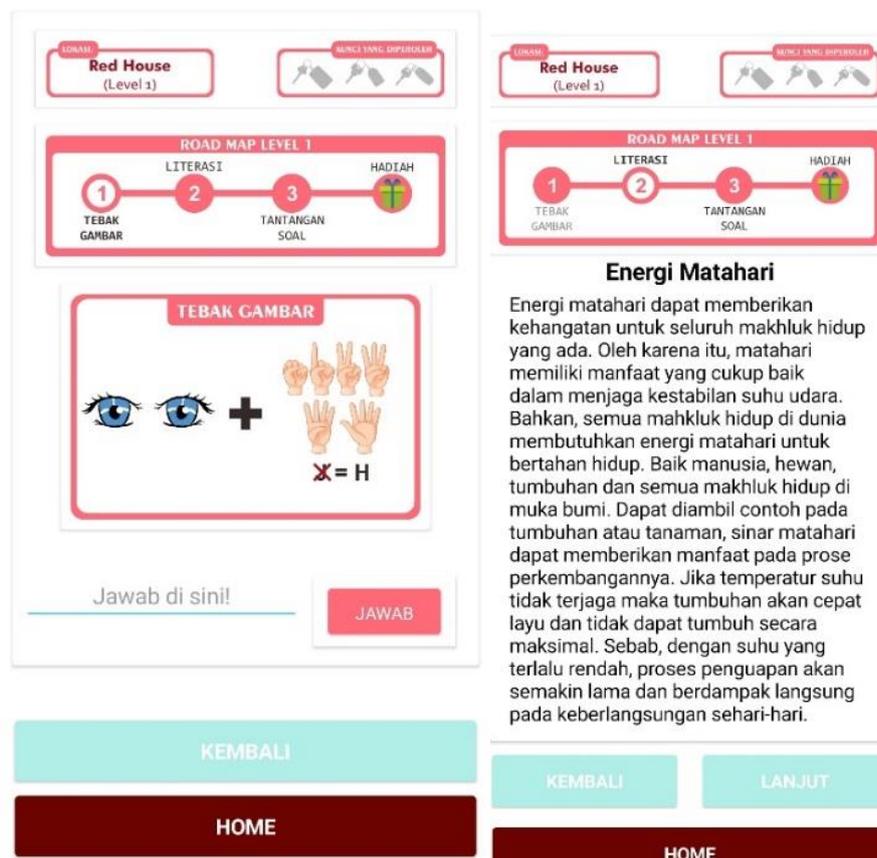


Figure 2. Word Guessing Game Display

For the display on the game menu, there are 4 stages of the game that must be completed by students to reach the finish. The game displayed is a word guessing game, and when students answer correctly will pop up the correct answer and the user will enter the next display which is reading material from the answer to the previous question.



Figure 3. Display of literacy menu and learning video

In the literacy menu display, 5 literacy menus are provided that can be used as student reading material. In addition, every reading material below is provided learning videos that can be watched by students. So that not only reading materials can be read, but also videos as learning insights.

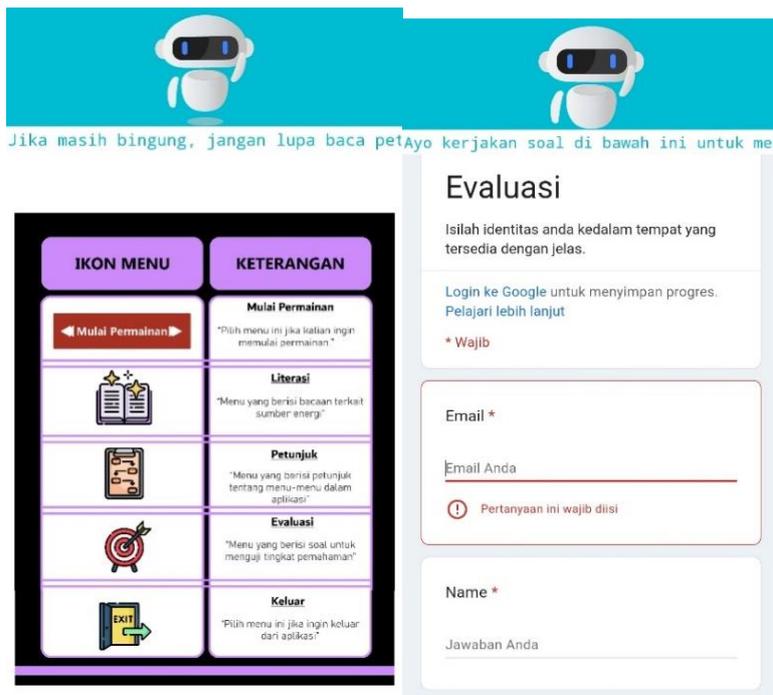


Figure 4. Display of the game hint and evaluation menu

In the display of the instruction menu, there are descriptions of the use of buttons in the application so that it makes it easier for students to use. In addition, in the evaluation menu, there are questions about energy materials that students need to do as evaluation material after using digital literacy game media.

After product development, the next step is to conduct product tests conducted by material experts and media experts to measure how feasible the development media is used by students. At the test stage of the product this is the last stage of the study. There are 3 aspects validated by media expert lecturers. The aspects that need to be assessed are aspects of appearance, content and completeness of the product. While in the aspect of material expert assessment, there are 3 assessments, namely the language aspect, the presentation aspect and the content or material aspect. Every aspect of media and material assessment has various indicators. The results of the validation stage of media experts and material experts are as follows:

Table 2. Media expert validation results

Aspects	Validation score
Display	25
Fill	56
Product completeness	26
Total	107
Result	85,6%

Table 3. Material expert validation results

Aspects	Validation score
Language	21
Serving	35
Content and Materials	31
Total	88
Result	88%

After calculations were carried out on the results of the questionnaire that had been filled out by material and media experts, the results were obtained namely from the validity sheet of media experts getting a score of 85.6% with the category "Very Valid" while the material experts got a score of 88% with the category "Very Valid". However, in terms of display, the reading size needs to be improved according to suggestions by media experts so that revisions and improvements can be made.

This application can be downloaded for free via google drive with the following link https://drive.google.com/file/d/1l_uEuSJZ3Oyfe34_rdRtog_uYHm8yuPi/view?usp=share_link.

After downloading the application link, users can install on their smartphones and try the features that have been provided. Digital literacy game application files can also be shared via bluetooth or other file delivery applications that support so that users can run game applications after installing on android devices. The limitation in this study is only up to the product test stage conducted by material experts and media experts to measure the feasibility of the product. The follow-up plan that can be done in the future, both researchers and readers, is expected that this digital literacy game media can be implemented in classroom learning to find out how effective game media is in increasing students' reading interest.

Conclusion

Based on preliminary studies, research results and discussions that have been described, it can be concluded that the development of digital educational game media that has been carried out by researchers has been tested worthy of media experts and material experts to be used as a learning companion for grade IV elementary school students. The suggestion for further research is that this research can be a reference material and can be developed towards a limited trial stage, so that there is a difference when using media and when not using media. In addition, researchers can also conduct research to the limited and extensive trial stage to several elementary schools using experimental and control classes so as to obtain good and accurate results.

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