

Development of Interactive Media Assistance of Beginning Reading Teaching Materials in Class I Dyslexia Students in Elementary School, Medan Deli District

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Abstract. This research is motivated by the problem of reading disabilities in dyslexic students in elementary schools. This study aims to develop teaching materials for beginning reading with the help of interactive media. This research is a development research with a 4D model. The research subjects were 10 dyslexic students. The results of the feasibility study from material experts 93%, media experts 95%, and design experts 93%. The results of effectiveness based on the results of students' initial reading comprehension were determined from the results of the pretest 40% and the results of the posttest 87% then the results of the teacher's response were 91% and the results of the student's responses were 92%. Based on these results it can be concluded that the teaching materials for beginning reading assisted by interactive media are appropriate and effective for dyslexic students in class I SD Negeri Medan Deli District.

Keywords: Dyslexia, Beginning Reading, Interactive Media

1. Introduction

Education is a very important thing in life. Education is not only needed by students who are in regular elementary schools, but also very much needed by students with special needs. The development of science, technology, and art is currently very fast and rapid so the logical consequence of this condition is the ability to access and accommodate professionally. If this condition is not anticipated, it is likely that you will face a difficult dilemma to overcome. To meet these demands, various basic skills are needed, including the ability to read. The ability to read is very important to capture information. Reading skills must be continuously updated and developed through learning. All information today is very easy to obtain, because there are almost no boundaries of space, time, and place that affect it. With this condition, everyone must improve their senses to be able to see, hear, and read the rapidly changing circumstances. The development of basic reading skills at an early age is very important, especially those that are oriented to everyday life.

Learning to read is found in every class, it's just that learning to read is divided into low and high grades. In the lower grades, the reading learning given is preliminary reading, where preliminary reading is in the first and second grades of elementary school. Learning to read early in the lower grades, namely grade I SD plays an important role as the initial foundation in

reading. Reading to elementary school students needs to be taught because not a few students in elementary school have difficulties in learning to read. In everyday life, there are still many students who have difficulty in learning, this is because there is a failure in following the learning process so that it has an impact on mastery of learning material through listening, thinking, remembering, and expressing these difficulties known as specific learning difficulties or specific learning difficulties. specific learning barriers. Learning difficulties are one of the learning problems experienced by students in elementary schools. Learning difficulties (dyslexia) are language barriers that originate from a central nervous system disorder in the brain, resulting in difficulties in reading, writing, and perceiving the words and sentences they receive [1]¹.

In general, the difficulties experienced by students are difficulties in basic academic abilities (reading, writing, and arithmetic). One of the learning difficulties in children who have difficulty learning to read (dyslexia) in public schools is reading difficulties. Elementary schools that accept students with special needs, especially students with learning difficulties to read (dyslexia) are schools that have started to organize inclusive education. Inclusive education means that schools must accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions. This includes children with disabilities/disability and gifted children. Inclusive education is also strengthened by the Law of the Republic of Indonesia Number 20 of 2003, concerning the National Education System in Chapter IV part one article 5 paragraph 1 which states "that every citizen has the same right to obtain quality education", then in the fourth part of the article 11 paragraph 1 states "that the central government and local governments are obliged to provide services and facilities, as well as guarantee the implementation of quality education for every citizen without discrimination".

Before conducting the research, the researcher conducted interviews with the teacher regarding any obstacles when teaching students to read. According to the first grade teacher at SD Negeri 067250 Medan, the obstacles or difficulties experienced in teaching grade I students. Students are very difficult to concentrate so it is difficult to remember the lessons given by the teacher, especially there are six students who find it very difficult to follow the lesson even though the seating position strategy has been arranged in the classroom. front and close to the teacher. But still students find it difficult to concentrate so that only a few consonants are remembered by students. In addition to teachers from SD Negeri 067250, the researchers also interviewed class I teachers at SD Negeri 067953 Medan. Constraints experienced when teaching students to read students are easily distracted by what attracts their attention. Then the visual perception with several consonants often makes mistakes, this happens to four students who have difficulty in mentioning some consonants. Therefore, the teacher conducts non-formal identification of students to find out temporary problems that occur in students.

So it is necessary to develop pre-reading teaching materials in accordance with the criteria for preparing teaching materials to improve the reading ability of students with learning difficulties (dyslexia). Of the several types of media that have been used in reading activities in the process of learning to read. Interactive learning media has never been tried to be given to students with

¹ Rumapea.dkk.2021. Meningkatkan Kemampuan Membaca Permulaan Melalui Multimedia Interaktif Rupa Bagi Anak Disleksia Kelas III di SDN 153068 Pinangsori 1. *Jurnal Pendidikan Kebutuhan Khusus*. Vol.9, No.2 hlm. 77-85

learning difficulties in State Elementary Schools in Medan Deli District, namely SD Negeri 067250 Medan and SD Negeri 067953 Medan. Interactive media is a delivery media system that presents recorded video material with computer control to viewers (students) who not only hear and see video and sound, but also provide an active response and that response determines the speed and sequence [2]². presentation. Interactive media has audiovisual elements (including animation) and is called interactive because this media is designed to involve the user's response actively. The development of teaching materials is carried out by considering the abilities and needs of students.

Based on the problems above, suggest an idea to develop teaching materials with the help of interactive media for dyslexic students in grade I elementary school. The study refers to previous research, namely Mulyati (2019:10) this study aims to (1) develop varied flash card teaching materials in early reading learning (2) describe the validity of varied flash card teaching materials in early reading learning (3) describe the effectiveness of teaching materials Variative flash cards in early reading learning (4) describe the practicality of varied flash card teaching materials in early reading learning. The development model used is Research and Development and the data analysis used is qualitative descriptive analysis technique. Previous researchers, then Rumapea (2021: 77), this study aims to improve early reading skills (reading nouns with CV-CV patterns) through interactive media language rubrics (fox). This research is an experimental quantitative research with a single subject research approach using the A-B-A design and using graphic visual analysis techniques. Based on the explanation above, the researcher intends to conduct a study with the title "Development of Beginning Reading Teaching Materials Assisted by Interactive Media in Class I Dyslexia Students in Elementary Schools, Medan Deli District."

2.Theory

2.1 Teaching Materials

Teaching materials are a part that is needed in the course of the learning process. Because teaching materials are a set of materials that have been systematically arranged so that they can be used during the learning process. Teaching materials used in the learning process can facilitate teachers in carrying out teaching and learning activities. Teaching materials are something used by teachers or students to facilitate the learning process. The form can be in the form of reading books, workbooks (LKS), or broadcasts[3]³. Through teaching materials the teacher will find it easier to apply learning in the classroom, making it easier for students to learn. Therefore the function of teaching materials is very influential for educators and students. Summed up the three functions of teaching materials as follows, (1) Guidelines for teachers who will direct all their activities in the learning process, as well as a substance of competence that should be taught to students, (2) Guidelines for students who will direct all their activities in the learning process, as well as a substance of competence that must be learned and mastered, (3) Evaluation tool for achievement or mastery of learning outcomes[4]⁴. The preparation of

² Arsyad, Azhar. 2011. *Media Pembelajaran*. Jakarta:PT. Raja.Grafindoo Persada

³ Kosasih. 2021. *Pengembangan Bahan Ajar*. Jakarta: Bumi Aksara

⁴ Aulia.Weni,dkk. 2020. Ewektifitas Pengembangan Bahan Ajar Bahasa Indonesia Berbasis Circ Siswa Sekolah Dasar Simangambat. *Jurnal Education and Development*. Vol.8, No.4. hlm 455-458.

teaching materials must pay attention to the principles in the selection of learning materials including the principles of relevance, consistency, and adequacy. The principles that need to be considered in preparing teaching materials are (1) The principle of relevance, in which in this principle the learning material should be relevant and related to the attainment of core competencies and basic competencies, (2) The principle of consistency, in this principle there is constancy between learning materials and basic competencies that students must master, (3) The principle of adequacy, where in this principle the material to be taught should be adequate and assist students in mastering basic competencies[5]⁵.

2.2 Reading

Suggests that reading is an activity of understanding composed letters that are meaningful and includes the sense of sight carefully to observe and follow the flow of graphic symbolic speech and turn it into meaningful speech which requires the reader to interpret written symbols actively and critically for tools related to himself and or someone in order to get the meaning of writing and get information on internal and external factors[6]⁶. by reading someone will get various benefits, including (1) Gaining a lot of life experience, (2) Gain general knowledge and certain information that is very useful for life. (3) Knowing the various major events in the civilization and culture of a nation, (4) Can follow the latest developments in science and technology in the world. Beginning reading is the level of the reading learning process to master the writing system as a visual representation of language[7]⁷.

2.3 Learning Media

Learning media includes tools that are physically used to convey the content of learning material. Learning media is a component of learning resources that contain instructional material in the student environment that motivates students to learn [8]⁸. The benefits of using teaching media in the teaching and learning process are as follows: 1) Teaching media can clarify the presentation of messages and information so that it can expedite and improve learning processes and results, 2) Teaching media can increase and direct children's attention so that it can lead to learning motivation, interactive more directly between students and their environment, and the possibility of students to study independently according to their abilities and interests, 3) Teaching media can overcome the limitations of the senses, space and time[9]⁹.

2.4 Children with Learning Difficulties

Children with learning disabilities are a condition in which someone is unable to attend school (academic) lessons such as an inability to read, write, and count due to neurological dysfunction and other factors that require special services[10]¹⁰. Learning difficulties consist of two groups, namely general learning difficulties and specific learning difficulties. In general learning difficulties students have difficulty following the teaching and learning process at school which is influenced by internal factors and external factors. Internal factors include interest, attention,

⁵ Nana.2020. *Pengembangan Bahan Ajar*. Klaten: Lakeisha

⁶ Rustinarsih.2021. *Make A Match Cara Menyenangkan Belajar Membaca Wacana Aksara Jawa*. Karang Anyer: Yayasan Lembaga Gumun Indonesia

⁷ Muhsyanur. 2014. *Membaca (suatu keterampilan berbahasa reseptif)*. Yogyakarta : buginese art.

⁸ Widharyanto.B. dkk. 2018. *Pembelajaran Bahasa Indonesia Untuk SD (Pendekatan dan Teknis)*. Bekasi: Media Maxima.

⁹ Wati, Ega Rima. 2020. *Ragam Media Pembelajaran*. Yogyakarta: Kata Pena.

¹⁰ Zulmiyetri.dkk.2020. *Penulisan Karya Ilmiah*. Jakarta: Kencana

motivation and study habits while external factors include the school environment, available facilities, learning methods, learning media and learning resources[11]¹¹.

2.5 Dyslexia

Dyslexia is a specific learning disability characterized by problems in expressing or receiving in oral or written work, which may appear in reading, speaking, listening and writing[12]¹². There are two general subtypes of dyslexia namely auditory dyslexia and visual dyslexia. Children with visual dyslexia appear to have difficulty in visual discrimination, visual memory, moving left and right and recognizing words quickly. Meanwhile, children with dyslexia have auditory type and continuous memory and phonological awareness[13]¹³. Based on the explanation above, it can be concluded that difficulties in learning the components of words and sentences make it difficult for dyslexic children to carry out reading and writing activities.

3. Methods

This research is a development research (Development Research). Research and Development (Research and Development) is a research method used in order to produce certain products. In the method development there are several types of models. The development model used is the 4D model development approach (Four-D model) developed by Thiagarajan which has the aim of developing and validating products Sugiyono[14]¹⁴. The development model used is the 4D model development approach (Four-D model) developed by Thiagarajan. The development of this model consists of 4 stages of development, namely defining, designing, developing, and disseminating.

Through this research and development, researchers are trying to modify teaching materials for early reading assisted by interactive media that are appropriate and effective to use to improve early reading skills. The product that was developed in this study was the initial reading teaching material which was modified with the help of interactive media so that it could train students in initial reading skills. In this study, researchers used three types of data collection techniques. The following is a description of the data collection used by researchers.

1) Observation

Observations were made in this study to obtain data on students' reading skills before using the initial teaching materials assisted by interactive media and after using the initial teaching materials assisted by interactive media. As for obtaining data on students' reading ability, that is by using a preliminary reading observation sheet.

2) Interview

In this study, interviews were conducted with principals, teachers, students. They are called key informants or key informants, i.e. they have special knowledge, status, or communication skills.

¹¹ Hasanah.dkk.2018.*Belajar dan Pembelajaran*. Malang:UMM Press

¹² Irdamurni,dkk.2018. Meningkatkan Kemampuan Guru pada Pembelajaran Membaca Anak Disleksia.*Jurnal Pendidikan Khusus*. Vol.2, No.2

¹³ Widyorini.Endang.dkk. 2017. *Disleksia*. Jakarta: Prenada

¹⁴ Sugiyono. 2018. *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabet

3) Questionnaire

Questionnaire (Asker) is an instrument in indirect communication techniques. With this instrument the data collected is informative and without explanation or interpretation in the form of opinions, thoughts, judgments, expressions of feelings, and others. The questionnaire filled in by the respondents is an instrument that can be used in research[15]¹⁵.

The questionnaire used to collect data in this study are as follows:

1) Validation Assessment Sheet

The validation sheet is used to obtain data from the validator's development about the product being read out, namely media-assisted learning materials. The details of this questionnaire consist of validation sheets from material experts, media experts and design experts.

2) Teacher Response Questionnaire and Student Response

Teacher questionnaires are used to obtain reading data from teachers and students about the product being developed, namely original learning materials assisted by interactive media.

Then the instruments used in this study are as follows: (1) Observation sheet to see students' reading ability. (2) Validation sheet on the feasibility aspect of the material obtained from the material expert. (3) Validation sheets on media aspects were obtained from media experts. (4) Validation sheet on the feasibility aspect of the design of pre-reading teaching materials obtained from design experts (5) Questionnaire responses by classroom teachers to determine the effectiveness of early-reading teaching aided by interactive media (6) Student response questionnaires to determine the effectiveness of assisted-starting reading materials interactive media (7) the results of the assessment (pretest) and the results of the intervention (posttest) to see the effectiveness of early reading teaching materials assisted by interactive media on the early reading ability of students with learning difficulties.

After data from all respondents or data sources have been collected, the next step is to conduct data analysis. The data analysis techniques are as follows:

1. Feasibility Data Analysis of teaching materials for beginning reading with the help of interactive media Expert Validation

The technique used to analyze the validation results is to look at the feasibility assessment given by material experts and media experts. The expert team will answer questions that contain statements by putting a check mark (v) on the items that have been arranged with a score on a scale of 1-4. These criteria are converted into values with a scale of four using the Likert scale as follows[16]¹⁶.

Tabel 1. Criteria for Instrument Item Answers with a Likert Scale

No	Answer	Score
1	Very good/ very suitable/ very attractive	4
2	Good/ Appropriate/ Attractive	3
3	Not good/ not suitable/ not interesting	2
4	Not good/ not suitable/ not interesting	1

¹⁵ Rumengan.Jeremy.2013 Metodologi Penelitian. Bandung : Citapustaka Media Penulis

¹⁶ Andriani.Durri.dkk.2011. *Metode penelitian*.Jakarta: Universitas Terbuka

The data obtained were analyzed descriptively qualitatively by calculating the percentage of each category for each indicator in the developed pre-reading teaching materials[17]¹⁷.

$$\text{Score (\%)} = \frac{\text{Total Score Obtained}}{\text{Total Maximum Score}} \times 100\% \quad (1)$$

The percentage that has been obtained is then confirmed, as follows:

Table 2. Eligibility Criteria for Teaching Materials for Beginning Reading Assisted by Interactive Media

Percent value intervals	Criteria
85%-100%	Very Good
70%-84%	Good
60%-69%	Pretty Good
50%-59%	Not Good

2. Analysis of the effectiveness of teaching materials for beginning reading with the help of interactive media

a. Data Analysis of Teacher Responses to Teaching Materials for Beginning Reading Assisted by Interactive Media

In order to determine the criteria for the effectiveness of the teacher's response to the teaching materials for beginning reading assisted by interactive media, the teacher's response data was analyzed descriptively quantitatively in the form of percentages and grouped for each indicator. The teacher's response is said to be positive if the average percentage obtained is more than 80% which is in the category of happy, easy to get, feasible and interesting. The teacher's response is said to be effective if the teacher's response is positive towards the interactive media-assisted early reading teaching materials

b) Data Analysis of Student Responses to Teaching Materials for Beginning Reading Assisted by Interactive Media

To determine the criteria for the effectiveness of student responses to interactive media-assisted beginning reading teaching materials, student response data were analyzed descriptively quantitatively in the form of percentages and grouped for each indicator. The student response is said to be positive if the average percentage obtained is more than 80% which is in the happy, interesting and interested category. Student responses are said to be effective if student responses are positive towards the teaching materials for beginning reading assisted by interactive media.

4. Results and Discussion

In this study, the initial reading teaching materials assisted by interactive media started with a process that was in accordance with the 4D development procedure, namely, starting from the definition stage which was carried out by analyzing the initial strengths and weaknesses of the teaching materials in schools. Then carry out the analysis stage of students in the knowing stage

¹⁷ Arikunto, Suharsimi, 2010. *Evaluasi Program Pendidikan*. Jakarta : Bumi Aksara.

in order to find out the needs of student learning materials. Next is the task and concept analysis which at this stage identifies the concepts in the initial reading material. The second stage is the planning stage and this stage begins to develop validation instruments, designing the initial learning materials assisted by interactive media. Then the third stage is the development stage, which is validated by the validator to test the initial reading teaching material product assisted by interactive media and the last stage is the dissemination of the initial teaching material product that has been developed.

Then the original reading lesson materials are assisted by interactive media which are assessed by material, media, and design experts, as well as expert and student assessments. Based on the results of the validation of starting teaching materials assisted by interactive media, it was obtained that the average score given by material experts on early reading teaching materials aided by interactive media was 93% with the category "Very Valid" and media experts on initial learning products assisted with interactive media 95% with the category "Very Valid" then the design expert on the product of starting reading teaching materials assisted by interactive media is 93% with the "Very Valid" category with the level of validity from material experts, media experts, and design experts, it can be said that reading teaching materials as long as the interactive-assisted media are suitable to be used so that students can play and improve students' initial reading skills.

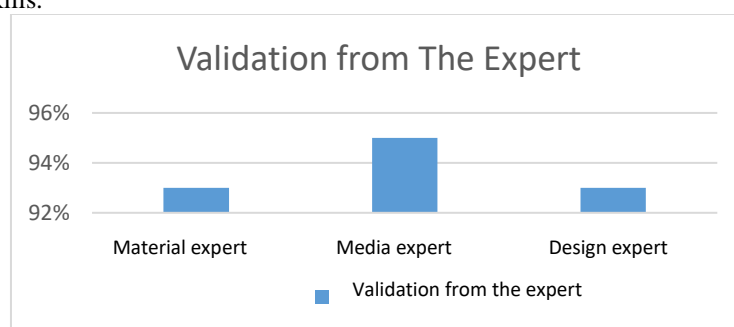


Fig. 1. Expert validation

Furthermore, based on the results of data collection through the results of assessments and interventions, it can be seen that there are changes and developments in early reading skills with interactive assistance. This can be seen after looking at the results of the initial assessment (pretest) with an overall score of 40% and the results of the intervention (posttest) with an overall score of 87% so that early reading teaching materials assisted by interactive media are effective to use.

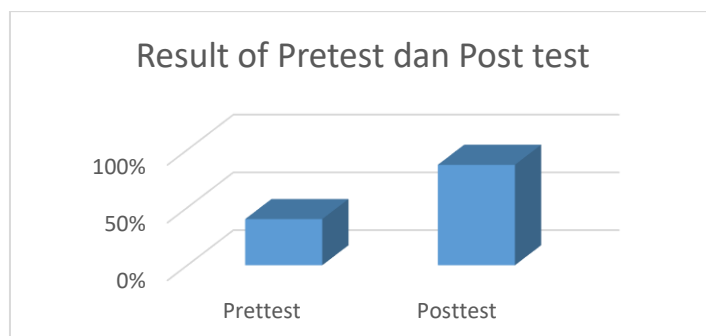


Fig 2. pretest and posttest results

Based on the results of data collection regarding student responses to learning activities using pre-reading teaching materials assisted by interactive media, it shows that all indicators of the effectiveness of student responses are above 90%. Thus it can be said that all aspects received a positive response from students. This means, if viewed from the student's response, the implementation of learning activities using pre-reading teaching materials assisted by interactive media is effective. The positive response given by students to learning activities using pre-reading teaching materials assisted by interactive media in this study illustrates that learning activities using pre-reading teaching materials assisted by interactive media are fun for students because they are interesting and make it easier for students to learn to read. The results of collecting data on teacher responses to learning activities using pre-reading teaching materials assisted by interactive media indicate that all indicators of the effectiveness of teacher responses are above 91%. Thus, it can be said that all aspects received a positive response from the teacher. This means that when viewed from the teacher's response, the implementation of learning activities using early reading teaching materials assisted by interactive media is effective.

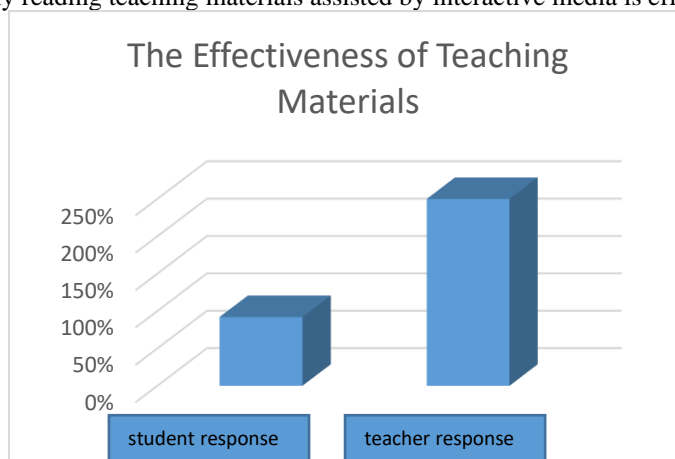


Fig.3. the effectiveness of teaching materials

The positive response given by the teacher to learning to read in this study illustrates that learning activities using early reading teaching materials assisted by interactive media are fun and make it easier for teachers to teach early reading to students with reading difficulties (dyslexia).

5 Conclusions

Conclusions that can be drawn based on the results of research and discussion in the previous chapter are:

1) The development of early reading teaching materials assisted by interactive media begins with a process that is in accordance with the 4D development procedure, namely, starting from the definition stage, which is carried out by analyzing early on what weaknesses and strengths exist in teaching materials in schools. Then carry out the student analysis stage, the identification stage is carried out in order to find out the needs of student teaching materials. Furthermore, the task and concept analysis at this stage identifies the concepts that exist in the beginning reading teaching materials. The second stage, namely the planning stage at this stage, begins to develop validation instruments, designs the initial reading materials assisted by interactive media. Furthermore, the third stage is the development stage by validating the validator to conduct a trial of the initial reading teaching material product assisted by interactive media and the final stage of dissemination by distributing the initial reading teaching material product that has been developed.

2) The results of the feasibility of teaching materials for pre-reading materials assisted by interactive media. This product is feasible and valid to be used in learning to improve early reading achievement in students with learning difficulties to read (dyslexia) through assessment, revision and validation from several experts. This conclusion is drawn based on the results of the validators consisting of material expert validators with an average value of 93% meaning very valid, with media expert validators getting an average value of 95% and design expert validators getting a value of 93% which means very valid and feasible used.

3) Results The effectiveness of early reading teaching materials assisted by interactive media used can be seen from the results of the initial assessment (pretest) with an overall score of 40% and the results of the intervention (posttest) with an overall score of 87%. Furthermore, apart from the results of the initial assessment and intervention, the effectiveness of early reading teaching materials assisted by interactive media is also seen from the responses of students who get an average of 92% and teacher responses get an average of 91%. . Based on this explanation, it can be said that early reading teaching materials are said to be effective to use.

Based on the conclusions and implications of the research results, the researchers provide several suggestions, among others, as follows:

1) For school principals, in order to support every teacher to use and apply early reading teaching materials assisted by interactive media in this study so as to increase the achievement of reading abilities of students with learning difficulties to read (dyslexia).

2) For teachers, this interactive media-assisted pre-reading teaching material can be used as an alternative that can be used to improve the reading ability of students with learning difficulties with dyslexia.

3) For other researchers, further research can be carried out related to the use of teaching materials for early reading assisted by interactive media with other variations.

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