Development of card catalog media for early reading ability of students with mild intellectual disability

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(Received: 21-09-2021; Reviewed: 27-06-2022; Accepted: 29-06-2022; Published: 30-06-2022)

Abstract: This study aims to (1) describe the need for media, (2) describe the prototype of the card catalog media, (3) investigate the validity and practicality of the card catalog media used to increase early reading ability of students with mild intellectual disability. This study used research and development method with the research stages developed by Borg & Gall. The data of this study were collected through interviews, questionnaires, and validation instruments. The analysis was performed using the descriptive quantitative analysis with the percentage technique. Results showed that (1) the card catalog media was much needed by teachers and students with mild intellectual disability to improve early reading ability in students at SLBN (State Special Education School) Lutang Majene; (2) the prototype of the media that had been developed consisted of cards, equipped with drawers to store the cards; each card was in various colors and contained pictures, letters, syllables, and words; and (3) through restricted testing, the card catalog media was considered very valid, practical and feasible to be used in early reading activities for students with mild intellectual disability.

Keywords: Learning media, card catalog, early reading, mild intellectually disability

Abstrak: Penelitian ini bertujuan untuk mengetahui (1) gambaran analisis kebutuhan media. (2) protipe media katalog kartu. (3) kevalidan dan kepraktisan media katalog kartu untuk meningkatkan kemampuan membaca permulaan murid tunagrahita ringan. Metode penelitian yang digunakan adalah penelitian dan pengembangan (Research and development) dengan menggunakan tahapan penelitian dari Borg & Gall. Penelitian ini menggunakan teknik pengumpulan data wawancara, angket, dan intrumen uji validasi. Teknik analisis data yang digunakan adalah analisis deskriptif kuantitatif dengan teknik persentase Hasil penelitian menunjukkan bahwa (1) gambaran kebutuhan media pembelajaran katalog kartu sangat dibutuhkan untuk guru dan murid tunagrahita ringan untuk meningkatkan kemampuan membaca permulaan di SLB Negeri Lutang Majene. (2) Prototipe media pembelajaran katalog kartu yang dikembangkan berbentuk kartu yang memiliki laci sebagai tempat kartunya, memiliki berbagai macam warna setiap kartu, terdapat gambar, huruf, suku kata dan kata dalam satu kartu. (3) kevalidan dan kepraktisan media pembelajaran katalog kartu melalui uji coba terbatas, berdasarkan hasil uji coba tersebut telah dinyatakan sangat valid dan sangat praktis dan layak untuk digunakan dalam aktivitas pembelajaran membaca permulaan pada murid tunagrahita ringan.

Kata Kunci: Media pembelajaran, katalog kartu, membaca permulaan, tunagrahita ringan

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INTRODUCTION

The results of interviews with teachers at SLBN Lutang Majene on 13 August 13 2020 showed that there were some students with mild intellectual disability in the third grade who had poor early reading ability. It is shown by difficulty in connecting letters and reading them. When the researchers instructed the students to read syllables, such as b-a, l-a, b-u, k-u, they did it poorly. In addition, they also have difficulty distinguishing letters. Some students often mispronounce the letters (phonemes), such as the letters n and m. For example, the word masak (cook) was read nasak or nasi (rice) was read masi. However, they can communicate fluently and can be understood when studying and interacting with people around them. Therefore, students need to be given reading practice using a method or media that is effective to address the problem.

Research by Widalismana (2017) on the development of catalog-based learning media found that by using a catalog as a learning media to deliver lessons, children’s success in learning increased and the lessons became easier to understand.

The catalog used in the current study is a card catalog, which had been a book-shaped catalog before being developed. This catalog was designed in an attractive way and adapted to the needs of students with mild intellectual disability so that they can learn to read more easily.

The catalog currently developed is a card-shaped catalog. Catalogs are generally used as a means of promoting a particular product. However, apart from being used as a promotional tool, catalogs have also been widely developed by researchers as a learning media. Catalogs as a learning media are book-like media that contain information and pictures which are designed to cater to the indicators of concept understanding and created using attractive design and layout.(Noorbella 2018).

In addition to counting and writing, reading is also the most basic skill in the academic field that needs to be possessed and mastered by everyone, including children with mild intellectual disability. Most of the information or knowledge is provided in written form and can only be understood through reading. Therefore, it is a necessity that everyone is able to read (Friantary, 2019). The stages of early reading ability include: (1) introduction to various forms of letters, (2) introduction to various linguistic elements, (3) introduction to the relationship between the correspondence of sound patterns and spelling, and (4) reading speed at a slow rate (Nuraini, Tanzimah & Hera, 2022). Reading is a part of written communication. In written communication, the sound of the language is symbolized into letters or words. It is understandable that it is the early reading level at which this transformation process is primarily nurtured and mastered. The definition of transformation in this regard includes the introduction to letters as sound symbols (Artini, Magta & Ujianti, 2019)

Reading is defined as an activity of receiving both explicit and implicit messages from reading texts with literal, inferential, evaluative, and creative reading comprehension by incorporating the reader’s experience. (Janawati, 2020)

A conducive learning environment can be created if teachers are very creative and innovative in designing teaching and learning activities. Teachers play a vital role in determining the learning media that is adjusted to characteristics of the material in order to stimulate students to be more active in giving responses. Therefore, a media that can be used to deliver materials or lessons is highly necessary. The devices used in interactions between teachers and students as well as the materials being learned are called learning media (Widalismana dkk 2017); (Karlina 2020)

Media are humans or materials that in this regard can facilitate students to acquire attitudes, skills, and knowledge. By this definition, learning media include school environment, textbooks, and teachers (Rosyid, Sa’diyah & Septiana, 2021). Additionally, media function as a component of a learning system and learning media. According to (Sudarti, 2019), the use of media for learning can motivate and stimulate students in learning activities as well as foster student interest and other psychological impacts.

The word “catalog” is derived from the Latin word “catalogos”, which means a list of objects arranged for a specific purpose. Catalogs usually contain information needed by the public. One example is the publisher’s catalog which contains a list of library materials covering titles of library materials and the year of publication. Catalogs are media that can help students understand information easily and increase student motivation to learn because the appearance and pictures are colorful and made attractively. The purpose of using colorful pictures is expected to make it easier for students
to understand the material and avoid misconceptions (Nofiyanti and Nurtjahayani 2017).

Catalogs are library materials or a list of newspapers, non-books, books, magazines, slides, microfilms, and others. Learning difficulties due to the nature of still pictures can be overcome by using card catalog media (Suhendar Yaya 2016).

The advantages of card catalog media are (1) more practical in presentation, (2) more durable because it is made of manila cardboard and stored in the drawers, (3) easy for students to read, (4) helpful on vocabulary expansion because each card contains pictures, letters, syllables, and words, and (5) more interesting and concrete as it involves the sense of sight (visual). However, the card catalog media has some weaknesses: (1) it only displays the perception of the sense of sight and (2) the size is limited so that it can only be visible by a small group of students (Azhima, Meilanie, and Purwanto 2021).

Children with intellectual disability are not able to make adjustments to their behavior during the development process because their intelligence is not normal like people in general; this abnormality is at a lower level than average. When learning, intellectually disabled children are hampered in understanding academic materials and hence the syllabus should be modified or specifically adapted to their needs (Sari et al., 2017).

Due to below-average intelligence, they often face obstacles in daily life and do not communicate, socialize, and receive academic lessons like their peers. Bratanata (Effendi, 2008: 88) stated that individuals with below-average intelligence level will need special aid, including in the field of education. This disorder is categorized into mental subnormality or mild intellectual disability.

An individual with mild intellectual disability (capable of learning) is an individual with an IQ score (50-75 or 70) who is capable of being educated or can be taught to read, write, and count. Meanwhile, an individual with moderate intellectual disability is an individual who does not have the ability in the field of education, but can be trained to take care of themselves. In contrast, an individual with severe intellectual disability is an individual who requires strict supervision because this type of individual needs constant care (Widiastuti & Winaya, 2019).

An individual with mild intellectual disability exhibits the following characteristics: (a) socially impaired and unable to take care of themselves since birth, (b) having below-average intelligence, (c) delayed intellectual development, (d) delayed maturation, (e) intellectual disability caused by heredity or disease, and (f) incurable (Macmillan, Siperstein, and Gresham 2016).

Therefore, the catalog media is presented attractively by incorporating pictures, letters, and syllables in each card catalog. The pictures in the card catalog media serve to translate abstract things into real forms and provide more concrete learning experience to intellectually disabled children.

The card catalog media can facilitate students with mild intellectual disability to learn early reading skill with an aim to improve students’ understanding of concepts or description of letters and syllables that are clarified with pictures that can be observed and interacted with.

The 2013 curriculum is implemented in special education schools by incorporating thematic learning. Learning is carried out by all children with special needs, such as blindness, deaf, intellectual disability, physical handicap, and autism. Children with intellectual disability are those who have below-average IQ. According to (Dermawan 2018), children with special needs require special forms of learning that are tailored to their abilities and potentials. Basically, every child has the likelihood of experiencing problems in learning even though they are minor. Thus, they need to get attention and help from others.

METHOD

This study was conducted using Research and Development (R&D) method. The card catalog was designed as a learning media by referring to the R&D method in order to improve early reading ability in students with mild intellectual disability. Following Borg and Gall, the stages of developing the learning media included collecting data, planning, developing the product, and expert validation.

The product testing in this study was performed restrictedly on students with mild intellectual disability to determine the extent to which the product developed could achieve the established goals and objectives. This stage is a very important stage in R&D. This stage is carried out with the aim of examining and discovering the feasibility of a product before it is used. In addition, product testing is also aimed at determining the extent to which the product developed can achieve the established goals and objectives.
This study was conducted at SLBN Lutang Majene. The subjects of this study were comprised of 3 third-grade students with mild intellectual disability, 3 special education teachers, and 2 validators. The data of the study were collected through interviews, questionnaires on media needs analysis, and validation instruments.

Analyses of expert validation results and of practicality were conducted using the formula for calculating the average percentage of each item in the questionnaire on teacher and student responses.

RESULTS AND DISCUSSION

The result of this research and development was the card catalog as a media for learning early reading skill that satisfied the validity and practicality criteria. The results of the media needs analysis, the prototype of the learning media, and the validity and practicality of the card catalog learning media are discussed as follows.

Based on the needs analysis conducted at the SLBN Lutang Majene through interviews and questionnaires on the needs of learning media, data were obtained about the teachers’ views on students and poor early reading skill exhibited by some intellectually disabled students.

The lack of use of various media is also one of the causes of students’ monotonous learning. Therefore, it is important for the researchers to develop a card catalog learning media to improve the early reading ability in students with mild intellectual disability. Another reason that students and teachers were in need of a card catalog learning media is based on the results of the questionnaires. Some of the teachers who filled out the questionnaires felt that teachers and students at SLBN Lutang Majene needed the learning media currently developed.

The planning stage was carried out by designing a learning media in the form of cards. The results of expert validation showed that all of the content in the prototype of the card catalog learning media received good judgment from the experts even though some suggestions or inputs were provided for the improvement of the media before conducting product testing. According to (Rahayu, 2020), in designing a learning media, convenience must be taken into account, meaning that the media must be easy to understand and easy to use in learning.

The card catalog as a learning media for early reading skill consisted of cards and drawers for card storage. Each card contains conceptual pictures, letters, syllables, simple words and sentences. Colors were incorporated in the pictures to specifically attract student interest in reading.

The card catalog was made of 10x8cm manila paper, laminated for quality and durability. The drawers were made of wood, which was light and easy to carry. The catalog had two drawers with a different color for each drawer. The pictures can be seen in detail on Appendix 1.2 of the media user manual and in the card catalog learning media that had been developed.

Table 1. Results of Research Instrument Validation

<table>
<thead>
<tr>
<th>No</th>
<th>Aspects</th>
<th>Assessment Results</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Expert questionnaire instrument</td>
<td>86%</td>
<td>Very valid</td>
</tr>
<tr>
<td>2</td>
<td>Practicality questionnaire instrument</td>
<td>90%</td>
<td>Very valid</td>
</tr>
</tbody>
</table>
Table 1 shows that the components of the expert questionnaire instrument and the practicality questionnaire instrument to assess the aspects of instructions, questionnaire component scope, and language were rated in the range of 81 and 100, which fit into the very valid category. Based on the scale of validator’s assessment, the average rating of assessment of expert questionnaire instrument was 86% while the practicality questionnaire instrument 90%, given by two experts. These results showed that the questionnaires could be used as the instruments of this study to collect data.

The card catalog learning media to improve early reading skill was validated by material experts with the aim of determining whether the material was suitable for use in learning. The results of the validation are described as follows.

Table 2. Results of Expert Validation by Material Experts

<table>
<thead>
<tr>
<th>No</th>
<th>Items</th>
<th>Validator’s Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The suitability of the materials with basic competencies and learning objectives</td>
<td>V1: 4 V2: 5</td>
</tr>
<tr>
<td>2</td>
<td>Facilitating the understanding of materials.</td>
<td>V1: 4 V2: 5</td>
</tr>
<tr>
<td>3</td>
<td>The suitability of the materials with students’ competence levels</td>
<td>V1: 4 V2: 5</td>
</tr>
<tr>
<td>4</td>
<td>The clarity in providing information</td>
<td>V1: 4 V2: 4</td>
</tr>
<tr>
<td>5</td>
<td>Using sentences that are easy to understand</td>
<td>V1: 4 V2: 5</td>
</tr>
<tr>
<td>6</td>
<td>The use of good and correct Indonesian</td>
<td>V1: 5 V2: 4</td>
</tr>
<tr>
<td>7</td>
<td>The presence of pictures, letters, and words that makes it clear for early reading</td>
<td>V1: 5 V2: 4</td>
</tr>
<tr>
<td>8</td>
<td>The convenience in using the card catalog media</td>
<td>V1: 4 V2: 5</td>
</tr>
<tr>
<td>9</td>
<td>The support of the media to students’ independent learning</td>
<td>V1: 4 V2: 4</td>
</tr>
<tr>
<td>10</td>
<td>The ability of the media to improve student motivation in learning</td>
<td>V1: 5 V2: 5</td>
</tr>
<tr>
<td>11</td>
<td>The ability of the media to increase knowledge</td>
<td>V1: 4 V2: 5</td>
</tr>
<tr>
<td></td>
<td><strong>Total Score</strong></td>
<td><strong>4.2</strong> <strong>4.6</strong></td>
</tr>
</tbody>
</table>

Table 2 shows that the average score given by two experts was 4.4 or 88% if converted into percentage. As the rating was in the range between 81 and 100, the material fell into the very valid category. These results indicate that the media is feasible for use in learning.

The card catalog learning media to improve early reading skill was validated by media experts with the aim of determining whether the media was feasible for use in learning. The results of the validation are described as follows.

Table 3. Results of Expert Validation by Media Experts

<table>
<thead>
<tr>
<th>No</th>
<th>Items</th>
<th>Validator’s Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The suitability of the language with the thinking ability of students with mild intellectual disability</td>
<td>I: 4 II: 5</td>
</tr>
<tr>
<td>2</td>
<td>The clarity of the instructions for use</td>
<td>I: 4 II: 4</td>
</tr>
<tr>
<td>3</td>
<td>The suitability of the language with students’ thinking ability</td>
<td>I: 4 II: 4</td>
</tr>
<tr>
<td>4</td>
<td>The use of good and correct Indonesian</td>
<td>I: 4 II: 5</td>
</tr>
<tr>
<td>5</td>
<td>The selected font size</td>
<td>I: 4 II: 4</td>
</tr>
<tr>
<td>6</td>
<td>The selected font type</td>
<td>I: 4 II: 5</td>
</tr>
</tbody>
</table>
7 The selected card catalog drawers 4 4
8 The convenience in using the card catalog media 5 5
9 The selected font type and size make the media more interesting 4 5
10 The appropriateness of the layout of the pictures 5 5
11 Interesting color composition 5 5
12 The presence of the card catalog drawers 5 5
13 The convenience in reading the letters, syllables and words 5 5
14 The card catalog is practical and easy to learn 5 5

Total Score 4.4 4.7
f (Average Score) 4.5

Table 3 shows that the average score given by two media experts was 4.5 or 90% if converted into percentage. As the rating was in the range between 81 and 100, the media fit into the very valid category. These results indicate that the media is feasible for use in learning. A product is considered valid if it has measurement results that are compatible with the purpose of conducting a measurement. In this case, the validation of the card catalog learning media for early reading ability has provided appropriate measurement results based on the results of the assessments by the two experts, suggesting that the media is very valid and hence feasible for testing.

The practicality testing was conducted using a teacher response questionnaire after they used the card catalog learning media for early reading. The teacher response questionnaire was used to assess the aspects of learning, language, presentation, and display of pictures. A learning media is considered practical according to (Abdullah, 2017) if it meets the following criteria: (1) the media can overcome the lack of experience of the user; (2) the media can stimulate new desires and interests; and (3) and the media can increase motivation and stimulate students to learn. The teacher response questionnaire was administered to the classroom teachers at SLBN Lutang Majene. The administration of the questionnaire was aimed at collecting data about how teachers responded to the card catalog as a learning media for early reading. The results can be seen as follows.

Table 2. Results of Analysis of the Practicality of the Card Catalog Media

<table>
<thead>
<tr>
<th>Results</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>88%</td>
<td>Very practical</td>
</tr>
</tbody>
</table>

The results of the teacher response questionnaire were used to measure the practicality of the card catalog learning media. Table 2 above shows that the media was rated 88% by the teachers of the third-grade students with mild intellectual disability. As the rating is in the range between 81-100%, the learning media fit into the very practical category, indicating that the learning media is practical to be implemented in promoting early reading in students with mild intellectual disability.

Based on the results of the questionnaires used to collect responses to the learning media, students and teachers were in need of the card catalog learning media. Some of the teachers who filled out the questionnaires felt that teachers and students at SLBN Lutang Majene needed the learning media. Catalogs are print media in the form of books and non-books that can be assessed from the aspects of material criteria and the contents that are appropriate to be used as learning media (Deddy, dkk 2020).

A product is considered practical if (1) it can be applied in the field after being developed; (2) respondents are interested in using it in learning; and (3) respondents find it easy to understand the learning material. To analyze the data, several steps were taken as follows: (1) calculating the respondents’ assessment results and the total percentage; (2) calculating the percentage of respondents who stated that the product was practical and gave a minimum response of 61% (Fitria, Mustami, and Taufiq 2017). Based on a research conducted by Widalismana (2017), the catalog-based learning media can effectively improve learning outcomes as evidenced by the students’ achievement of learning outcomes.
CONCLUSION AND SUGGESTIONS

Based on the results of the study, it can be concluded that (1) teachers and students were in need of the card catalog as a learning media for early reading ability for students with mild intellectual disability; (2) the prototype of the learning media was developed starting from the planning stage; and (3) the card catalog learning media that had been developed satisfied the criteria of validity and practicality.

Suggestions are given for teachers and future researchers. For teachers, it is expected that teachers can develop the learning media to be more interesting and varied to prevent boredom and promote active participation among students with intellectual disability. For further researchers, it is hoped that they will continue to further develop the catalog learning media to improve the quality of learning and to implement the learning media on students in both regular and special education schools. It is also hoped that future research can be implemented on a larger scale.

REFERENCES


