The Multisensory Book Design: A Learning Medium for Dyslexic Children Reading the Qur'an Through Reflection on Concrete Objects

Cela Petty Susanti 1*, Rosendah Dwi Maulaya 2, Maisya Himatuz Zakiyya Siswanto 3, Safira Naurin Qolbi 4
1234 Universitas Darussalam Gontor, Indonesia.

Abstract: A dyslexic child experiences a common obstacle in the learning process due to having difficulty reading and recognizing letters (corrective and remedial readers). If left unchecked, the potential of dyslexic children will be hampered because reading is a basic human ability. Therefore, in this study, researchers designed a learning media design that makes it easier for dyslexic children to recognize hijaiyah letters. The research method used is R&D using the ADDIE development model. The study that the researchers conducted was limited to the development of design, so the purpose of this study was to provide an overview of the design of multisensory mirror book media. The design is developed with a printed book-based that will maximize the function of the senses of sight and touch. Dyslexic children will be invited to learn while playing by reflecting hijaiyah letters on concrete objects found in everyday life. In their learning, they were also invited to play by attaching glitter to hijaiyah stickers and then touching them. His motor function was tested by rewriting hijaiyah letters and then checking the correctness of the writing using a mirror. In the future, the design developed by researchers can continue to be refined to help dyslexic children learn hijaiyah letters to make it easier and more fun.

Introduction

The way to gain insight and knowledge is to learn. The most common learning activity is reading. Reading is believed to be the ultimate gateway to knowledge (Romadhon, 2020). Reading is also a bridge for a person to develop his language skills (Maghfiroh and Bahrodin 2022). How important reading is, so everyone should have this important skill.

As for people with dyslexia, there are barriers to learning to read. Dyslexia in Greek means difficulty reading. Other terms for reading difficulty are: corrective reader and Remedial Reader. Dyslexia is a neurobiological disorder that affects a person's ability to read, spell, and understand written text (Utami &; Irawati, 2017).

According to the Chairman of the Association, dyslexia sufferers in Indonesia account for 10-15% of school children worldwide. Thus, out of a total of 50 million school-age children, 5 million of them have dyslexia. Anyone, whether from children,
adolescents, or adults, can suffer from dyslexia. Many people with poor reading skills, with a percentage of 70-80%, are dyslexic (Khatib A Latief et al., 2020).

Children with special needs type dyslexia, which is a specific learning disability characterized by problems expressing or accepting oral or written work that may arise in reading, speaking, listening, and writing difficulties. Disorders in people with dyslexia are not a form of physical disability, such as disorders of vision problems, but cause brain function that complicates the process and processing of information being read (Oktamarina et al., 2022).

In normal children, the ability to read usually appears at the age of six or seven, but not so for dyslexic children; Until the age of 12, they usually do not read fluently and even still have difficulty distinguishing letters. Although dyslexics have normal, even above-average IQs, dyslexic people have very unsatisfactory reading skills (Muawwanah and Supena 2021).

Dyslexia is not a mental disorder that causes sufferers to lose consciousness and identity (Haifa, Mulyadiprana, & Respati, 2020). Person with dyslexia that has solved the problem like a normal human being. Therefore, a dyslexic Muslim is still a dyslexic Muslim Believe (charged). Commandments to worship are also imposed on people with dyslexia, such as prayer, zakat, fasting, and reading (Rofiah, 2015).

A Muslim Believe Must be able to read the Qur'an because it has several interests: First, the Qur'an is the main source of Islamic teachings. For Muslims, the Qur'an is a life guide that covers several aspects. Second the obligation to worship. Reading the Qur'an is one of Islam's recommended forms of worship—third, Hidayah and guidance. The verses contained in the Qur'an guide how to live a true life and guidance in the face of problems. Fourth relationship with God. Reading the Qur'an is a way to strengthen a spiritual relationship with Allah: Fifth, maintenance of religious identity. Reading the Qur'an helps Muslims maintain the religious identity of Islam itself (Faruq & Pratisti, 2022).

Seeing this urgency, it is important to design learning media that suits the characteristics and needs of dyslexic children in order to learn to read the Quran properly and correctly. Therefore, researchers present the Mirror Multisensory Media Book for dyslexic children who learn to read the Quran by reflecting on concrete objects. This book is a printed book that adopts a multisensory learning approach based on Asep Supena's research. Multisensory approaches may improve assessment of learning for dyslexic children (Primasari and Supena 2021).

Previous research related to the development of learning media for people with dyslexia, one of which was Trisna Avi's research. The android media base uses the VAKT Multisensory method (Visual, Auditory, Kinesthetic, Tactile). The Android app menu includes reading, writing, counting, puzzles, progress graphs and settings. The advantage of this media application for dyslexic children is that it is integrated with voice recognition, which can guide students in learning (Listyaningrum 2020).
Another study initiated by Shahnaz and Husni examined the effect of marble application on the reading ability of dyslexic children. Marble is an android learning medium with story illustrations, sounds, and interesting text images that can be controlled according to the wishes of students. From the results of the study, learning activities while playing using marble media showed 90% of students' interest in learning, resulting in rapid changes in reading ability (Surayya and Mubarok 2021).

Then, research by Arif Widodo, Dyah Indraswati, and Agam Royana analyzed serial image media on the influence of reading ability of dyslexic children. Based on this research, serial image media can improve the reading ability of dyslexic children with an increase in post-test scores. It is known that the average reading ability of dyslexic students before treatment (pretest) is 58.75%. In contrast, after treatment (post-test), it increased to 70.5% (Widodo, Indraswati, and Royana 2020).

Furthermore, Dara Sudirahaja's research is related to Flash cards media uses the Borg and Gall approach. This media is devoted to improving the ability to read the Qur'an of dyslexic children. Based on research, score 83 (very decent), media expert 92 (very feasible), limited trial 80 (very good), so it obtained an average of 85 (very feasible). Baseline 1 gained an average Qur'an-reading ability of 75.2%; The intervention obtained an average ability to read the Quran of 88.9%, and Baseline 2 of 99.3% (Sudiraharja 2018).

The research above has focused on developing android media and card media that are used as learning media for dyslexic children to recognize hijaiyah letters to make it easier. This study is different from previous studies. The purpose of this study was to develop a multisensory book design with the addition of a reflection mirror at the end of the page. Printed books are conventional media (do not use digital media), so they are friendly to dyslexic children. It can be used anytime and for a long time without fear of adverse side effects. Several senses are stimulated in the use of this learning media, namely sight and touch. In addition, motor dyslexia children are also trained with some writing exercises that can be controlled correctly with complementary tools in the book (mirror / glass).

**Method**

This type of research is included in R&D (Research & Development). To develop the product design take reference cases and writings that have occurred and made before. In general, the research approach is based on the ADDIE model. Analysis: the analysis carried out was on the learning needs of dyslexic children. Design: the stages of design and selection of character elements in the book are adjusted to the character of dyslexic children aged 5-10 years. Development: the product development stage is carried out for about three months. Implementation and Evaluation: It has not been done because this research only focuses on design.
The concept of developing this book is based on multisensory theory. Multisensory stimulation in dyslexic children will make it easier for them to digest new knowledge. The components and functions of the book are developed as follows:

**Table 1. Book Components and Functions**

<table>
<thead>
<tr>
<th>Not</th>
<th>Book Components</th>
<th>Function</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Original Surat Hijaiyah</td>
<td>Early knowledge that dyslexic children should pay attention to. If there are still difficulties in identifying letters, the child is directed to observe the objects next to him.</td>
</tr>
<tr>
<td>2</td>
<td>Reflection of Hijaiyah Object Letters</td>
<td>The reflection of hijaiyah letters into objects around allows dyslexic children to more easily remember objects. Some dyslexic children suffer from short-term memory, so remembering objects around them will be easier for dyslexic children to remember than understanding new knowledge (original hijaiyah letters) that are more abstract.</td>
</tr>
<tr>
<td>3</td>
<td>Hijaiyah Letter Stickers</td>
<td>Invite dyslexic children to learn while playing. Unlocking stickers and sprinkling colorful glitter onto letterform stickers allows for the fun learning a dyslexic child will experience. They can also feel the results of sprinkling glitter on stickers. The contour of glitter touched by dyslexic children maximizes tactile function which will encourage dyslexic children’s ability to digest hijaiyah letters better.</td>
</tr>
<tr>
<td>4</td>
<td>Bolding Letter Training</td>
<td>Each page of the book includes bold exercises that will train dyslexic children to write letters fluently with the help of continuous dotted dots.</td>
</tr>
<tr>
<td>5</td>
<td>Writing Practice Sheet</td>
<td>Writing practice sheets are presented in a separate form on the back page. Its function is to help the memory of dyslexic children in writing hijaiyah letters without having to look at the example.</td>
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<tr>
<td>6</td>
<td>Mirror Reflection Check the Truth of Hijaiyah Letters</td>
<td>Writing practice sheets are paired with reflection mirrors that will control the correctness of the dyslexic child’s letters. If the writing is correct, the mirror reflection will show the wrong letters and vice versa. This will make it easier for dyslexic children to learn independently at home with something fun.</td>
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The design of the book is adapted to the characteristics of children aged 5-10 years. The selection of objects and illustrations of the substance of the book is quite simple so as not to divert the child's focus while learning. The reflected objects resemble hijaiyan letters and are objects around the child. This selection is adjusted to the general knowledge possessed by dyslexic children, making it easier for them to understand and internalize the hijaiyah letters in their minds.

Figure 2. Multisensory Hijaiyah Miracle Book Design

Figure 3. Multisensory Hijaiyah Miracle Book Design

Figure 4. Multisensory Hijaiyah Miracle Book Design
Dyslexia is a learning disability or loss of reading ability caused by difficulty in reading and writing according to. Reynold et al. mentioned that dyslexia is a disorder in the ability to learn language that can affect skills in recognizing letters, such as reading, writing, and spelling, especially in pronunciation (Nurfadhillah dkk., 2022). In reading and writing, dyslexic children often experience mistakes, such as both letters becoming upside down or misplacing letters in one word (Snowling, Hulme, and the Nation 2020).

The causative factors of dyslexia can vary. First phenological factors. That is, where the systematic relationship between letters and sounds, for example, has difficulty distinguishing between "Rigid" and "nail". It has almost the same sound, for example, "fifty" with "fifteen". This kind of difficulty is usually an error in the processing of information input (Syahroni, Rofiqoh, and Latipah 2021). Second. Educational or upbringing factors. Education provided by parents that forces a child's brain to work can usually trigger a child to experience (Filasofa and Miswati 2021)—third, biological factors. Fourth There are problems experienced in social relationships, suffering from stress, which is an implication of learning difficulties, and motor disorders (Hasanah et al. 2022).

Dyslexia disorders can be caused by certain deviations in the brain that cause differences in child development with children in general. However, this does not create a disorder or mental disorder, but children who have dyslexia differ in the function of parts of the brain and the way they learn (Dirgayunita, Dheasari, from Masyhuri 2022).

Children with dyslexia are slow in reading and writing skills, and they are unsure of what he or she is saying. Often, a mistake in reading is to skip a few lines of syllables in the text and add some words that are not contained in the text of the book he is reading. Dyslexia which has two types, namely: First The auditory type is distinguishing sounds from spoken words or parts of sentences. Second visual type (vision), which relies more on their vision than hearing, because according to them, seeing something will be easier to understand than listening to something (Humaira et al., 2022).

The first step in the preparation stage is a preliminary study related to collecting secondary data on the learning characteristics of dyslexic children which will be used as a reference to create learning media. Preliminary studies are carried out by reading related literature and reading previous studies that discuss the process of learning to read in dyslexic children. In a study found the most common mistake made by dyslexic children is in distinguishing the similarity of letter forms such as C Read X, Going to, ح readX C, Z Read and اصاص read Z and vice versa. Then for the similarity of the error sound that is often found, namely is read حH and vice versa, W is read and vice versa س,S (Tantri, Wulandari and Ferawati, 2019)
In the article, Safarina summarizes the difficulties experienced by people with dyslexia when experiencing the learning process, including; tendency of letters that are reversed, difficult to distinguish the same writing, difficulty remembering letters that have been learned, visual memory is disturbed, low perception/perception, poor writing analysis power (Safarina and Susanti 2018).

Based on these difficulties, the needs of dyslexic children in the learning process can be summarized as follows:

a. Learn from something simple. The tendency of letters that are often reversed and difficulty remembering letter forms needs to be pursued by teaching that makes it easier for them to understand letter forms. Learning from something complicated will make it difficult for dyslexic students, so in learning concrete examples are needed that can be found in the child's environment. For example, the resemblance of the letter h into the shape of a chair will be much easier for dyslexic children to understand.

b. Stimulation of interesting visual objects becomes something important in the child's world. The child's imagination ability is much better than the imagination of adults, so stimulation with colorful visual objects will give children a deeper understanding of what the image object conveys compared to showing something monotonous to the child. The selection of cheerful images will stimulate children to learn faster because it can improve children's perception. No exception in dyslexic children, visual stimulation also affects the process (Kawuryan 2012).

c. Fine motor skills stimulate dyslexic children. Learning with textured media will be easy to remember and attached to students' cognitive abilities. Wari'ul Hasanaha's research showed that children with special needs who were given experience writing on sand had higher test scores than children who wrote with ordinary media (W. Hasanah and Affandi 2020)

Dyslexic children cannot be equated with other normal children in learning to read. They need special handling to have the same reading ability as normal children. Reading and learning methods for dyslexic children are different from normal children; Even the learning media used cannot be equated with normal children. Dyslexic children must be assisted with special learning media that suit their learning needs (Rosmawati and Juni Samodra 2021).

Learning media stimulate student interest during the learning process and help educators and students achieve these learning goals (Miskiyah et al., 2023). The development of learning media for dyslexic children must be adjusted to their characteristics and learning styles.

Learning media in the form of printed books is one form of tool or material used in the learning process to help students understand and learn learning material. Printed
books are all used in the teaching and learning process as part of learning and are explicitly written by authors with some selected and systematic knowledge. Books can have a variety of formats, such as physically printed books with pages that can be held or e-books that can be accessed through electronic devices such as ebooks, tablet, or e-reader (Ratmelia, 2018).

Books can be a powerful medium for transferring knowledge, documenting cultural heritage, and opening doors to diverse worldviews. Print media can also inspire, move emotions, or change a person's view of the world. (Mudinillah, 2019).

For dyslexic children, learning with multisensory media will be more effective. Multisensory is the concept of multi-sensory stimulation. Multisensory printed books are designed for students to gain their learning experience with various sensory tool modalities. In this case, the senses of sight function, such as hearing, touch, and kinesthetic (Basam & Sulfasyah, 2018).

Multisensorial hijaiyah learning books are designed to be a learning medium for dyslexic children who have difficulty recognizing letters, including hijaiyah letters. In the development of this book, hijaiyah letters in Arabic script are projected with concrete objects around the child's environment to make it easier for children with dyslexia to remember and digest.

This book is designed with a multisensory approach to the senses of sight (visual), touch (tactile), and skills (psychomotor) in order to stimulate children with dyslexia to more easily learn to understand hijaiyah letters. The first stage of using this book is for students to observe the original shape of the hijaiyah letters and compare them with the resemblance of surrounding objects. Then students can do the game by opening the hijaiyah letter sticker in the second column, which can be colored with glitter. Letters that have been colored with glitter will form a texture. Children with dyslexia are told to feel the texture of letters and experience different learning experiences. Finally, in the third column, children with dyslexia were told to practice writing hijaiyah letters that they had seen and touched.

Figure 5. Components and functions of objects in the book.
For deeper writing practice, the book comes with practice sheets and mirrors that dyslexics can use to practice writing and match the correctness of their writing through the reflection of images produced by mirrors. If the reflection of the image produced by the mirror is miswritten/reversed, then the hijaiyah letters written by the student are correct. Conversely, if the reflection of the image in the mirror is correct, it means that the hijaiyah written by the student is wrong. The mirror function is a corrector that will help dyslexic children to check the correctness of their writing.

**Conclusion**

Difficulty reading is a common problem experienced by people with dyslexia. This difficulty can be overcome with the right learning process. Some studies state multisensory learning is a good learning approach for dyslexic children. Thus, multisensory mirror books are a medium that is expected to facilitate the learning process of dyslexic children to be faster. The concept of designing this book design is designed with multisensory learning that combines the senses of sight and touch and stimulates students' kinesthetic abilities in writing. On the final page there is a mirror that can be a proofreader for the process of children's writing exercises. In the end, the concept of designing this book design hopefully can be further developed so that it can become a product that can help dyslexic children learn huruh hijaiyah more easily in the future.

**Acknowledgment**

Countless thanks to my mother (Siti Khoiriyah), who tirelessly taught me how to read. His daughter, who has dyslexia, used to. This work would not have been born without painstaking practice, as you taught me to read. Furthermore, thanks to LPPM UNIDA Gontor for providing space so that the development of learning media ideas for dyslexic children can be realized. Hopefully in the future many dyslexic children will be helped by this media.

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