

The Use of Playdough, Uno Stacko, Kinetic Sand, and Flashcards in Improving The Al Qur'an Reading Skill for Students with Dyslexia During Pandemic of Covid-19

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Abstract: Covid-19 pandemic requires students to study at home without interacting in class for a while. Learning from home is undoubtedly difficult for early childhood and elementary school students, especially students with special needs, including dyslexia. Many studies aiming to improve the alphabet based-reading skill for children with dyslexia have been conducted; nevertheless, further study on Al-Qur'an reading skill for these children in Indonesia as a country with the majority of Muslim inhabitants is considered essential. The different characteristics between Latin and Arabic alphabets create a complex challenge for dyslexic students. Arabic as a foreign language whose written form is rarely found publicly has made dyslexic children less exposed to Arabic alphabetical forms. This study is of single-subject experiment type and uses the A-B-A design. The intervention stage comprises four media, namely Uno stacko, flashcard, kinetic sand, and playdough. The study results prove 0% overlap, and the intervention is proven to be successful in improving the Al-Qur'an reading skill of students with dyslexia significantly.

Keywords: Hijaiyah Letters; Dyslexia; Beginner Reading Skill

INTRODUCTION

Dyslexia is often regarded as a mere reading skill and learning disorder. Nevertheless, dyslexic children have different brain connection compared to other children in general. A different brain organization creates an imbalance, confusion, and weaknesses within temporal and spatial domains. Dyslexics are having problem in spelling and words recognition fluently despite the instruction given. Reading is an activity that requires the ability to transform codes into understanding. Meanwhile, the main problem for dyslexics is decoding ability (Peterson and Pennington 2012). The general assumption that dyslexic children are a fool will generate severe frustration, depression, aggressive, losing self-esteem, and misbehave-tendency (Stein 2001:14).

Therefore, children with dyslexia must receive proper treatment to learn and receive a great deal of necessary information suitable for their development age. Unfortunately, treatment for children with dyslexia being developed currently focuses more on the Latin alphabets. Whereas Indonesia, as a country with a majority of Muslims, has the urge to be able to read the Qur'an properly as it is the fundamental guidance in life. Fundamentally, reading is the door to knowledge; thus, Islamic knowledge starts by reading the Qur'an. Islam believes that the Qur'an contains the words of Allah revealed through the angel of Gabriel (*Jibril*) to prophet Muhammad. The Qur'an contains abundant knowledge and rules in life between human and the nature as well as worshiping guidance.

The Arabic alphabets and Qur'an is an integrated unity that cannot be separated. Learning to read the Qur'an requires the ability to identify the Arabic characters first and foremost. Most reading learning techniques for dyslexic children currently focus on the alphabet identification for Latin characters, disregarding the fact that the characteristics of Latin and Arabic letters are very distinctive. The characteristics differences cause children with dyslexia to face another challenge with Arabic letters, although they have overcome their reading problem with Latin alphabets. Another fundamental distinction to this problem is that the unique writing system in Arabic has a higher level of difficulty than the Latin alphabets. Some of the Arabic alphabetical systems are; first, the Arabic writing system from right to left, which is entirely different from the Latin writing system from left to right. Secondly, in the Arabic alphabetical system, one alphabet can have distinct forms corresponding to an initial, medial (middle) and final position, such as the letter of 'ḥa'. Thirdly, some letters are close in form, correspond to one another, such as ب, ت, ث, which has a similar base form and are distinguished based on dots position come along with the letters. The fourth unique writing system in Arabic is that there are written letters that do not need to be read/ articulated and, on the contrary, there are letters that need to be read despite their absence in the respective written form (Hidayat 2012:86). The significant distinction requires a unique technique to teach the dyslexics children how to read Arabic as a second language different from the Latin. To investigate this unique technique has become the purpose of conducting this study.

STUDY LITERATURE

It is commonly known that dyslexia is often considered a brain function disorder despite the lack of knowledge on the brain's exact part responsible for the problem. Awkwardness has

been noted in dyslexic children for many years, but the deficit's significance has not been found. In a review of Orton's writings, Geschwind recorded the frequency of awkwardness in dyslexics. Although others have commented on this, it remains an open issue and has not been adequately studied. The condition becomes more challenging as many of these awkward children continue to succeed in fields where high manual dexterity is essential. Poor articulation in dyslexia is also typical, but it is not clear whether this is related to a phonological deficit itself or a motor skill deficit in articulation speed or accuracy (Fawcett and Roderick 2008:82).

There is different anatomy for dyslexics and normal children, which takes part in the brain's temporal-parietal-occipital (the midbrain and hindbrain area). The condition shows a different brain network compared to normal children. The brain network differences have caused an imbalance, confusion, and weakness within the temporal and spatial area for dyslexics. The dyslexics have difficulty with spelling and word recognition despite the instruction given. Reading is an activity that transforms codes into understanding, while dyslexics encounter problems during the decoding stage (Peterson and Pennington n.d.:1997-98).

Further studies have proven that dyslexia is not an intellectual disorder; instead, it occurs due to abnormal development in the cerebral cortex, especially the left hemisphere responsible for the language development area (Indah 2017:79). John Stein further has written an article serving the thorough theory based on neurobiology concerning dyslexia (Stein, 2008). The presence of magnocellular and different brain networks between children with dyslexia and normal children has caused the interference in visual information reception, which is commonly caused by genetic factor.

Brain component disorder related to dyslexia, such as visual static, reflect cerebellar deficits, have been investigated by researchers worldwide. Nevertheless, children with dyslexia can receive information using other senses despite the visual receptor issue. Therefore, children with dyslexia can learn by using a particular method and media known as the multi-sensory technique.

The multi-sensory technique was first introduced by Anna Gillingham, a psychologist, and Samuel Torrey Orton, a neuro-psychiatry and pathologist. Gillingham and Orton together invented teaching methods for reading skills by combining four aspects: visual, auditory, kinesthetic, and tactile (Sayeski et al. 2018). The initial assumption for this technique's invention is that children will learn better when presented in various modalities. The teacher provides information through the various stimulus to all sensory systems of the respective students (Calvert, Spence, and Stein 2004).

Students that have learning difficulty will find the multi-sensory method as a helpful method for their limitation. The dyslexic students, having letter coding issue, experience significant assistance using this method (Pagliano 2012). In reading the *hijaiyyah* alphabets, the multi-sensory approach remains applicable despite the letters' structure entirely distinctive from the Latin characters (Hazoury, Oweini, and Bahous 2009).

Some researchers have conducted studies on the multi-sensory approach in learning the Arabic alphabet. These previous studies have proven the application of the multi-sensory method in understanding and learning about the Arabic characters that are entirely different

from the Latin alphabets used more in most people's daily lives. Children with dyslexia are benefiting from a great deal of assistance in learning how to read the Qur'an in Arabic characters (Alenizi 2019; Hazoury et al. 2009).

This study investigated the specific technique adaptation in teaching the Arabic alphabet towards students with dyslexia by using a phonic multi-sensory approach that is systematic and explicit with partly are based on the approach of Orton-Gillingham in the Hazoury study. The technique that has been developed so far is the Latin writing method, which in characteristics is entirely distinctive from Arabic. Therefore, the Arabic alphabet learning technique has a different approach and becomes the foundation in developing a further learning model for this purpose.

Another theoretical basis for this study is that children with dyslexia need a more attractive and joyful learning media. These children find that learning to read is challenging and exhausting; therefore, they need a fun and attractive method. Thus, it is essential to use proper and attractive media to read the Arabic alphabets (El Kah and Lakhouaja, 2018).

Anderson defines *reading activity* as a recording and decoding process. The written symbols are transformed into new sounds and decoded (Anderson, Lapp, and Antonakos 1972:210). Additionally, Broughton defines reading as *the mind of meaning encoded in print* (Broughton et al. 2002:72). Broughton also classifies reading into two types: mechanical skills that contain character recognition, linguistics, and connection between letters and sounds, and comprehension skills that comprise the understanding of meaning, fast reading, reading material assessment, and reading by heart (Broughton et al. 2002:214). This study's reading activity is the mechanical skills, often regarded as the initial reading skills.

Farida Rahim mentions that the initial activity in reading involves the sensory stage, that is, the disclosure of graphical symbols through the sensory (Rahim 2008:12). Intelligence does not affect one's reading skill unless the person can recognize the given material's stimulus. Only after the stimulus is accepted by the sensory, the brain can start to make a particular perception, that is, to associate the meaning and stimulus received. Kumara, in Call, proposes that one of the stages in reading skill is the discovery of alphabet principle, also known as decoding. The decoding stage is considered the actual reading activity; one realizes how one letter symbolizes a particular sound. The stage is marked by orthographic readiness, which shows brain neural connection is ready to record letters pattern and the other part of the brain's readiness to activate the speech ability.

Reading ability is affected by the psychological development of an individual. The maturity in cognitive area and learning determines the success in mastering reading skill. Vygotsky believes that learning readiness is a sign of *the zone of proximal development*. The learning process is affected by the environment; therefore, playing is the best stimulant for children. According to Vygotsky, playing activity will create the zone of proximal development that serves the function of an individual's developmental source (Santrock 2010).

Still, according to Vygotsky, playing is a *self-help tool*. This difference between twelve and eight, or between nine and eight, is what we call the zone of proximal development. It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under

adult guidance or in collaboration with more capable peers” (Vygotsky 1978:86). Children's involvement in playing activity can generate the opportunity to achieve the *proximal development zone's upper limit*. With the help of proper scaffolding, children can achieve potential improvement. Therefore, playing can help children to achieve the proper development stages and solve tasks independently. Playing also helps to refine the social, emotional, intelligence and thinking functions. Simultaneously, playing activity in this study refers to the activity that has adult supervision and guidance.

Learning is also a form of information reception process that will then be processed further to produce the learning achievement outcome. Atkinson and Shiffrin proposed a memory theory that emphasizes three aspects, namely sensory memory, short-term memory, and long-term memory (Atkinson and Shiffrin 1967:89-195), which later was refined by Tulving and Madigan (1970) stimuli that enter the sensory reception are treated as information. If the stimulus is regarded unimportant, the information will soon be forgotten; on the other hand, if it is essential, the information will be transferred to the short-term memory. Within the short-term memory, information will remain for thirty seconds, and it can only accommodate seven chunks in one time. The information is available for the transfer process to the long-term memory, or else, it can vanish and be replaced with a new piece of information (displacement). The information will remain and can be recalled in the long-term memory; otherwise, it can fail and be forgotten too.

METHOD

This research is an experimental study using the Single Subject Research Design. Single-subject research aims to determine the impact level of a treatment applied to the subject in repetitive order within a particular moment. The applied design in this study is the A1-B-A2 or Baseline-A, intervention-Baseline-B. Further, the Baseline-1 is a situation where children's learning interest in the reading Qur'an activity according to the condition without any intervention from the researcher. Intervention is a stage where the researcher applies treatment in the form of technique and media. At the same time, the baseline-B is a stage after the intervention, which returns to the initial situation without intervention. The baseline-A consists of three stages, the intervention of five stages, while the baseline-B of two. The total amount of these design stages is ten. The instrument used to measure the learning ability were in the form of performance assessment validated by experts and reliability test. The analysis of the study used visual analysis, both within the condition and between each condition. The study subjects were students with dyslexia. The subjects were confirmed to be dyslexics with a reference from a psychologist. The treatment urgency towards the subjects of the study has become the reason to choose the research site. Parents, teachers, and fellow students work together to generate positive synergy in supporting students' potential with dyslexia.

RESULT AND DISCUSSION

The baseline phase of this study was the regular Qur'an reading learning activity at school in normal condition using the *iqro'* method. The *iqro's* syntax is students' conditioning to prepare for the class, reciting short surah altogether, reading/ reciting the memorized surah

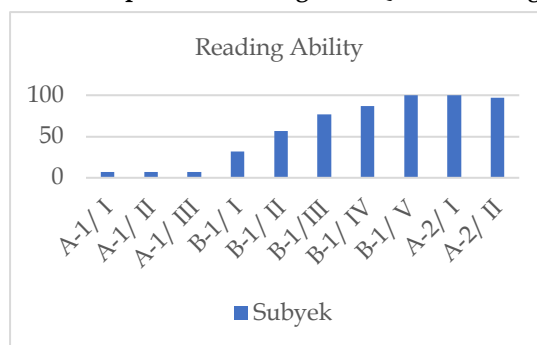
to the teacher in reviewing the students' weaknesses and strength in the activity. Further, the teacher will determine whether students can proceed to the next page or remain still.

This study's intervention used four media, namely flashcard, Uno stacko, playdough, and kinetic sand. The flashcard was first appointed to introduce the hijaiyah letters and continued with kinetic sand to help students copy the letter. Next, playdough was used to help students recall the letter's shape and shape the playdough into the respective letter. Finally, the Uno Stacko was used to recalling the learning outcome using the last three media.

A complete syntax within the intervention is classified into three, first: (1) The teacher prepares students to start the lesson, (2) The teacher prepares the flashcard in the up-side-down order and places kinetic sand on the table, (3) The teacher asks students to choose one of the flashcards, (4) The teacher shows the hijaiyah letter printed on the card and read it out loud, (5) The teacher asks students to repeat the sound of the letter mentioned earlier, (6) The teacher asks students to imitate the letter using kinetic sand (7) The teacher checks any line-drawing on the sand and at the same time asks the students to articulate the sound. *Secondly*, (1) the teacher prepares some playdough on the table, (2) the teacher mentions the letter that has been read earlier during the first stage, (3) the teacher asks students to form/ shape the playdough according to the letter mentioned, (4) the teacher asks students to assess the suitability between the latter made and the one on the card, (5) the teacher asks students to mention the letter that has been formed using the kinetic sand. The third stage consists of (1) the teacher prepares Uno Stacko with some hijaiyah letter stuck within the block, (2) the teacher, together with students, arrange the Uno Stacko blocks, (3) the teacher and students play together by obeying the Uno rules, (4) the teacher asks students to mention one hijaiyah letter each time they take one block, (5) the teacher gives a reward for every correct answer and punishment for the wrong ones, (6) the teacher and students end the game upon the collapse of the block structure.

The following table shows the data of baseline-A, intervention, and baseline-B stages



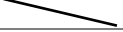

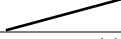
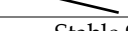
Table 1. The data recapitulation of beginner Qur'an reading assessment



The students reading ability during the initial stage is considered low as they can only read four hijaiyah letters. During the session I intervention, the students' ability increased to eleven letters, session II to nineteen letters, session III to twenty-three letters, session IV to twenty-five letters, and in session V, all letters were recognized entirely. The baseline-B phase did not reveal any of the students' ability, but it decreased to twenty-seven letters during session II.

The following is the data analysis result using visual analysis during the condition and among condition:

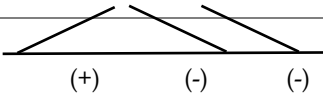
Table 2: The recapitulation of result analysis on the condition of the subject reading skill

Condition	Baseline-A	Intervensi	Baseline-B
Length of condition	3	5	2
Trend Direction			
Stability Tendency	Stable 100%	Variable 20 %	Stable 100%
Data Track			
Level of Stage and Range	Stable 6,7	Variable 32-100	Stable 97-100
Level of Change	6,7-6,7 (=0)	32-100 (+68)	100-97 (-3)

The length of the condition is the number of sessions within one phase, either the baseline or the intervention. In this study, the baseline-A phase was found during three sessions, the intervention five sessions, and baseline-B two sessions. This study's trend tendency applied the split middle, described by the rising, constant, or declining lines; the trend was achieved by dividing each phase into two parts of data. Second, splitting the right and the left parts into two parts. Thirdly, by dragging a line aligned with the abscissa that connects the meeting point between the graph's lines and the left and right hemispheres.

The results of the graph analysis of the estimation of the trend towards the Qur'an reading ability of subject B describes the increasing skill development from the initial session to the final session. The baseline-A phase shows stable data, the intervention phase rising, and baseline-B decreasing. The stability trend in subject B's reading ability shows that the data is 100% Stable at baseline-A, 20% Variable at intervention and 100% Stable at baseline-B. The reading ability ranges around three at baseline-A, 32-100 at intervention and 97-100 at baseline-B. The change levels that occurred were 0 at baseline A, +68 in the intervention and (-) 3 at baseline-B.

Table 3: The analysis of among-condition data

Condition Change	B1/A1	A2/B1
The number of changed variable	1	
Trend direction change		
Stability trend change	Stable to stable to stable	
Level change	53-27 (+26)	47-56 (-9)
Overlapping Percentage	$\frac{0}{5} \times 100\% = 0\%$	$\frac{0}{2} \times 100\% = 0\%$

The analysis between conditions showed that there is one variables changed occurred. A positive trend changed from the baseline to the intervention phase, and simultaneously, there was a negative trend from the intervention to the baseline. Each phase had a stable trend. There was a change of +26 from baseline to intervention phase and (-9) from intervention to baseline. The overlapping percentage was 0%; therefore, the intervention successfully changed the subject's behaviour.

CONCLUSION

The interventions experienced a 0% overlapping; therefore, the intervention was considered successful. Students who initially could only identify four hijaiyah letters could read a total of 29 hijaiyah letters at the end of the intervention. The media used in the intervention, namely flashcards, Uno Stacko, kinetic sand, and playdough, was proven to improve the reading ability of dyslexic students in the aspect of increasing the Qur'an reading ability of the early stage students to a better condition. Researchers, parents, and teachers can use the results of this study and apply them to dyslexic students in terms of the initial learning stage of reading Arabic letters as the introduction to the Qur'an reading activity and skills.

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