



The Effectiveness of Mauro Method Qur'an Memorization: A Study on Children with Autism Spectrum Disorders

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Abstract: Everyone has the right to study and memorize the Qur'an, including children with autism spectrum disorders. Despite having difficulty communicating, autistic children can memorize the Quran by applying various methods, such as Mauro. The Mauro method is a combination of the method of memorizing the Qur'an by listening, seeing, and repeating. The purpose of this study is to see impact of the application of the Mauro method in helping the process of memorizing the Qur'an for children with autism spectrum disorders, especially in short surahs. The type of research used is an experiment in the form of Single Subject Research (SSR) with an A-B-A design. The study was conducted in 14 meetings with 3 subjects. The results of the data analysis proved that the ability to read short surahs in autistic children increased because of the intervention given, namely the Mauro method. The continuous application of the Mauro method can assist in the process of memorizing short surahs for children with autism spectrum disorders.

Abstrak: Setiap orang berhak mempelajari dan menghafal Al-Qur'an, termasuk anak-anak gangguan spektrum autisme. Meski mengalami kesulitan dalam berkomunikasi, anak autis mampu menghafal Alquran dengan menerapkan berbagai metode, seperti Mauro. Metode Mauro merupakan gabungan dari metode menghafal Al-Qur'an dengan cara mendengar, melihat, dan mengulang. Tujuan dari penelitian ini yaitu melihat dampak dari penerapan metode mauro dalam membantu proses menghafal Al-Qur'an bagi anak gangguan spektrum autisme, khususnya pada surah-surah pendek. Jenis penelitian yang digunakan adalah eksperimen berbentuk Single Subject Research (SSR) dengan desain A-B-A. Penelitian dilakukan sebanyak 14 kali pertemuan dengan 3 subjek. Hasil analisis data membuktikan bahwa kemampuan membaca surah pendek pada anak gangguan spektrum autisme meningkat karena adanya intervensi yang diberikan yaitu metode Mauro. Penerapan metode Mauro secara berkesinambungan dapat membantu dalam proses menghafal surah pendek bagi anak gangguan spektrum autisme.

INTRODUCTION

Al-Qur'an is a way of life for Muslims. Teaching and studying the Qur'an is one stimulus in the process of developing children's potential. Whether it's in reading, writing, and memorizing. The Al-Qur'an is also the basis for studying knowledge, one of which is by memorizing the Al-Qur'an. The activity of memorizing the Al-Qur'an is known as tahfidz learning, which is a training process in memorizing the Al-Qur'an. This tahfidz activity is a process of memorizing the Al-Qur'an by rote. Tahfidz means to maintain and supervise. A job if it is often repeated will become memorized, as well as the process of memorizing in tahfidz learning requires a repetition process either by reading or listening.

People who memorize the Al-Qur'an are called Hafidz for men and Hafidzah for women. This tahfidz learning needs to be instilled since childhood. This aims to form a generation of nations that is based on the Al-Qur'an and has an impact on improving morals. Memorizing the Al-Qur'an will provide intercession for those who read it, understand and practice it. The hafidz and hafidzah are promised a degree by Allah SWT and becomes a protector from the punishment of hell fire (Maduki, 2018).

Everyone has the right to study and memorize the Al-Qur'an, including children with disabilities. Even though they have deficiencies, it is possible for them to be able to learn and memorize the Al-Qur'an. In general, people think that children with disabilities are unable to memorize the Al-Qur'an and that is impossible, because they have difficulty responding to the other person (Annisa et al., 2019).

Just as children with disabilities need special services to be able to do activities, so also in process learning the Al-Qur'an requires special techniques. In line with the opinion (Suryana et al., 2019) that teaching the Al-Qur'an to children with special needs has its own ways and techniques. This is adjusted to the limitations possessed by the child.

Children with disabilities who have brain development disorders are children with autism spectrum disorders. Children with autism have limitations in communication skills, social and behavior. Autism spectrum disorder children also have sensory problems and repetitive routines. So that children with autism find it difficult to adapt to the environment (Senan et al., 2017). Autism spectrum disorder is a neurodevelopmental disorder characterized by impaired communication, social interaction and restricted patterns of behavior and repetitive activities.

Children with autism are also known as Autism Spectrum Disorder (ASD), which are brain neurodevelopmental disorders characterized by social, behavioral and communication disorders. For most people, autism spectrum disorder is a lifelong condition and the neural mechanisms underlying it are poorly understood. Autism spectrum disorders are diagnosed based on behavioral measures, which are subjective and time-consuming processes (Fredo et al., 2018).

Autism spectrum disorders have complex developmental disorders that cause disturbances in processing information (Rahmahtrisilvia et al., 2023). Autism spectrum disorders are a diverse of developmental problems where a child capacity to speak, comprehend language, play, social development skill, and relate to others is impaired due to a neurological disease.

The number of children with autism spectrum disorders in every country is increasing every year. The Centers for Disease Control and Prevention (CDC) found that 1 child aged 8 years in the United States met the criteria for autism out of 40,000 children who had an autistic spectrum disorder. Boys have autism, which is 1 in 70 children, while girls are 1 in 35 children (Daulay, 2017).

This is same with the opinion (Sharma et al., 2018), it claims that during the past 20 years, the proportion of children with autism spectrum disorders has risen. According to

current estimates, up to one in 36 kids. A increased incidence of autism spectrum disorders has been linked to heredity, parental history of psychiatric illnesses, preterm birth, exposure to psychotropic medicines during pregnancy, and pesticide exposure..

Society thinks that children with autism spectrum disorders are unable to memorize the Al-Qur'an and that is something that is impossible. In fact, when appropriate techniques and media are applied, children with autistic spectrum disorders can memorize the Al-Qur'an without difficulty. In the teaching and learning process, and learning processes that have perfect methods and techniques, as well as organized assessments, will produce learning outcomes in accordance with the aims and objectives that have been outlined (Ikhwan et al., 2020). One of the methods is Mauro as a form of application in the process of implementing tahfidz learning.

The mauro method is a combination of the listening, seeing and repeating methods. The listening method is called sima'i, the seeing method is called nazhori and the repetition method is called muroja'ah. The Mauro method is expected to help autistic children memorize the Al-Qur'an well. The Mauro method is applied using Mauro media based on pop up books that are attractive to autistic children, so that during the learning process children are not easily bored. Mauro's method applies learning styles for children with special needs, namely visual, audiometric, kinesthetic and tactile or what is known as VAKT (Rahmahtrisilvia et al., 2022)

The Mauro method is applied in tahfidz learning through the use of Mauro media based on pop-up books, i.e., a book with moving, three-dimensional features that can visualize a tale in a more fascinating way beginning with the display of moving graphics when the page is opened. Sima'i, nazhori, and muroja'ah approaches are all combined in the pop-up book-based media that the Mauro method uses. The special feature of this medium is that each sheet of

the book can produce a sound depending on the page that is opened, and this pop-up book can record the sound around it at the end of the page. A microphone is used in the murojaah process to record sound, which the system subsequently processes. in order to hear the child's voice recording again and adjust the pronunciation.

The surahs Al-Fatihah, Al-Ikhlash, Al-Falaq, and An-Nas are the main topic of the recited surah. These four surahs are commonly recited and applied in daily life. So that subsequent surahs in the Al-Qur'an can be recited by children with autism spectrum disorder after this surah.

The Mauro method has its own uniqueness in the memorization process for children with autism spectrum disorders, namely by utilizing all of the child's sensory senses simultaneously both visual and audio. This can balance the stability and flexibility of brain function of children with autism in the learning process (Murray et.al., 2016). The Mauro method is also in line with the learning style of children with autism spectrum disorders who tend to be visual (Trembath et.al., 2015), so as to increase their learning focus (Yusop et.al., 2020). The steps for implementing the Mauro method are as follows (1) condition the child to be ready to learn, (2) tell the surah that the child will memorize, (3) prepare Mauro media based on pop up books, (4) open page by page on Mauro media, (5) do muroja'ah every day to strengthen memorization in collaboration with teachers and parents, (6) children are not allowed to start new memorization if the previous memorization has not been mastered. Children must often listen to murottal Al-Qur'an through any media.

Apart from being a hafidz/ah, the Al-Qur'an is also able to help with behavioral development therapy and speech therapy for autistic children. Reading and listening to the Qur'an can produce higher waves that affect brain stem function, which results in an increase in serotonin function (Astuti et al., 2017). This is same with the opinion (Silvia & Monique, 2017) which states that listening

to the verses of the Qur'an can have a very large impact on physiological changes.

The principle of memorizing the Qur'an using the Mauro method is to combine three methods into one, namely *sima'i*, *nazhori* and *muroja'ah*. The difference between Mauro's method and other Qur'anic memorization methods is that the ordinary method does not use all three principles in one package. Sometimes it only uses one or two methods/principles without including *the muroja'ah method*. In addition, the Mauro method is tailored to the needs and learning styles of children with autism spectrum disorders.

The Mauro method is by the tendency of the learning style of children with autism spectrum disorders, namely audio-visual. Therefore, this study aims to see the effectiveness of the Mauro method in memorizing short surahs in children with autism spectrum disorders. Short suras are selected based on the Islamic religious learning curriculum for children with autism spectrum disorders.

METHOD

An experiment in the form of Single Subject Research (SSR) is the methodology employed. The purpose of this study is to determine the impact of the Mauro technique on tahfidz learning for kids with autism spectrum disorder. The state of the child prior to and following the intervention will be the form of SSR that researchers will employ.

The research was conducted empirically, meaning the data was gathered based on findings from observations made over the course of the investigation. Data are used to present the study findings. So that the impact of the Mauro approach on tahfidz learning in kids with autism spectrum disorder may be observed.

The data collection technique in this study is to use a test technique. The test is a measuring tool used for measurement and assessment in a study. The test method is used to determine how well children with autism spectrum disorders do when reciting

passages from the Qur'an. The mauro technique of memorizing is used for the surahs that the kid will repeat, namely Surah Al-Fatihah, Al-Ikhlash, Al-Falaq, and An-Nas.

A test item with 22 questions that were modified for the amount of verses in each surah was utilized to gather the study's results. Al-Fatihah, Al-Ikhlash, Al-Falaq, and An-Nas are the surahs. Each question receives a score of 1 when answered properly, and a score of 0 when the question is mistakenly answered. (Riyanto, 2020).

The technique for measuring children's abilities in this type of SSR research is to use a percentage assessment. The percentage research technique is a unit of measurement for the dependent variable which is often used by researchers to measure a behavior in the academic or social fields. The percentage assessment technique in question is to show the number of occurrences of a behavior or event compared to the overall likelihood of the event occurring multiplied by 100%.

Data analysis techniques are procedures used to process the data and information that has been obtained. Visual analysis of graphic data is the method of data analysis that was employed in this study, namely transferring the data into graphical form, then the data is analyzed based on the components in each phase of the baseline (A1), intervention (B), and the baseline phase (A2) or what is known as A-B-A.

The study was conducted at SLB Autisma YPPA Kota Padang from March to June 2022. The subjects in this study are junior high school level, namely R, T and M. The average age of the subject is 13-15 years. The first stage of the research implementation was baseline (A1) or the conditions before the intervention was given by observing the child's initial ability to recite Surah Al-Fatihah, Al-Ikhlash, Al-Falaq and An-Nas. The second stage is intervention (B) or conditions when given treatment by observing the child's ability to apply the Mauro method based on pop up books. The third stage is the baseline (A2) or observing

the child's abilities by not providing intervention.

RESULT AND DISCUSSION

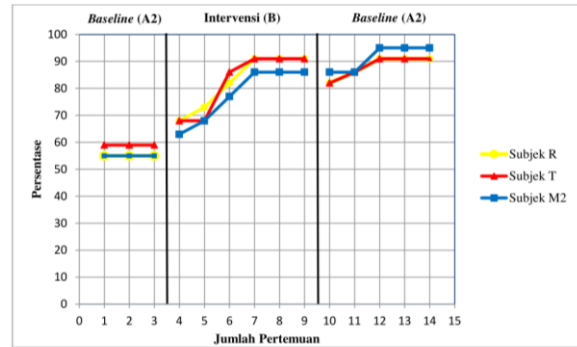
Result

The study was conducted in 14 meetings in three conditions for each subject, namely 3 meetings in the condition before the intervention (A1), 6 meetings in the intervention condition (B), and 5 meetings in the condition after the intervention (A2). The following table provides a summary of the data for each subject:

Table 1. Subject Data Summary

Condition	Meeting to -	Subject		
		R	T	M
<i>Baseline</i> (A1)	1	55%	59%	55%
	2	55%	59%	55%
	3	55%	59%	55%
Intervention (B)	4	68%	68%	63%
	5	73%	68%	68%
	6	82%	86%	77%
	7	91%	91%	86%
	8	91%	91%	86%
	9	91%	91%	86%
<i>Baseline</i> (A2)	10	82%	82%	86%
	11	86%	86%	86%
	12	91%	91%	95%
	13	91%	91%	95%
	14	91%	91%	95%

Table 1. Conditions before the intervention (A1) the ability of each subject showed stability in the first to third observations. Subject R with a percentage of 55%, subject T with a percentage of 59% and subject M with a percentage of 55%. Meanwhile, in the conditions during the intervention (B) the ability of each subject showed stability in the seventh to ninth observations with a percentage of 91% in subjects R and T and a percentage of 86% in subject M. In the conditions after the intervention (A2) the children's abilities showed stability in the second observation fifteenth to fourteenth with a percentage of 91% in subject R and T and 95% in subject M.



Grafik 1. Rekapitulasi Kemampuan Melafalkan Surah Al-Fatihah, Al-Ikhlash, Al-Falaq dan An-Nas Dalam Kondisi Baseline (A1), Intervensi (B), Dan Baseline (A2)

Graphic 1. Subject R in the conditions before the intervention (A1) obtained data that the child's ability was stable with a mean level of 55. Furthermore, in the intervention (B) data was obtained that the child's ability had increased and was stable with a mean level of 83. Then in the conditions after the intervention (A2) it was found that the child's ability was stable with a mean level of 88.

Subject T In the conditions before the intervention (A1) it was found that the child's ability was stable with a mean level of 59. Furthermore, in the intervention (B) it was found that the child's ability had increased and was stable with a mean level of 83. Then in the conditions after the intervention (A2) data obtained that the child's ability is stable with a mean level of 89.

Subject M In the condition before the intervention (A1) it was found that the child's ability was stable with a mean level of 55. Furthermore, in the intervention (B) it was found that the child's ability had increased and was stable with a mean level of 78. Then in the condition after the intervention (A2) data obtained that the child's ability is stable with a mean level of 91.

Discussion

Based on the findings of data analysis, interventions using the Mauro method with pop-up book-based Mauro media can improve the ability of children with autism spectrum disorders to read Surahs Al-Fatihah, Al-Ikhlash, Al-Falaq, and An-Nas. Mauro's approach is applied by using Mauro's media which is similar to a pop-up

book which has a three-dimensional shape, is embossed, and moves when opened. The 3-dimensional components on the pop-up book display make it more attractive. (Cahyani et al., 2020). When the page is opened, the visualization displayed in the pop-up book is a three-dimensional element that can move and is more attractive. Pop-up book, created digitally to help memorize and murojaah. so, children are interested and enthusiastic.

The audiovisual design of pop-up books in media is made to attract children's interest. With a unique design made from paper-based materials, Media also has an audio device on the right. Electronics such as voice recognition, Raspberry Pi 4, loudspeakers, and LCD screen displays are the components used. Similar to the research conducted (Lubis, 2017) which involved using the tasmi technique to memorize the Al-Qur'an through repeated hearing in accordance with the Mauro approach used in pop-up book media.

Pop-up book media has been transformed into a digital format. For instance, a study by Qi and Buechley in 2010 that merged paper and electronics was referred to as Electronic Popables. The book combines conventional pop-up mechanics with thin, flexible paper-based electronics to create an artifact that resembles a conventional pop-up book in both appearance and operation.

In accordance with studies employing AIDS audio as a medium in the process of learning brief surahs (Annisa et al., 2019). Radio, tape recorders, mobile phones, and language learning centers in schools are examples of media. Children with autism spectrum condition will be able to readily and for a very long time keep the murrotal Al-Qur'an in their long term memory if it is continued to be read.

According to this discussion, teachers can benefit from Mauro's method of using pop-up books to teach Surah Al-Fatihah, Al-Ikhlash, Al-Falaq, and An-Nas. Other digital-based materials can be used to improve memorization skills. There are also schools that use Al-Qur'an memorization programs as therapy for autistic children. Religious

therapy is another name used for this intervention.

CONCLUSION

Based on the research results, the Mauro method can help the tahfidz learning process in children with autism spectrum disorder. Especially in the letters Al-Fatihah, Al-Ikhlash, Al-Falaq, and An-Nas. Methods of memorizing the Al-Qur'an using the sima'i, nazhori, and moroja'ah methods are combined in the Mauro method. Children with autism spectrum disorder can benefit from Mauro's technique when applied with the help of a pop-up book. It is difficult for children with autism spectrum disorders to memorize verses from the Al-Qur'an. The findings of this study can be used as a guideline for parents and educators when learning tahfidz is taught to children with autism spectrum disorders. the memorization ability possessed by children can encourage the process of growth and development in a better direction. Al-Qur'an is a guideline for human life, including for children with autism spectrum disorders.

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