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## THE INFLUENCE OF THE MULTISENSORY LEARNING MODEL IN LEARNING THE HADITH OF THE QUR'AN ON THE MOTOR DEVELOPMENT OF MADRASAH IBTIDAIYAH STUDENTS

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### Abstract

This study aims to find out the extent to which the application of the multisensory learning model in the subject of Hadith Al-Qur'an affects the development of students' motor skills at MIN 1 Majene. This study uses a quantitative method with a quasi-experimental approach to test the influence of the multisensory learning model on the motor development of Class I students of MIN 1 Majene. The research approach used was quasi-experimental the entire population of 26 students was sampled through the saturated sample technique and divided into experimental and control groups. Data analysis was performed using descriptive statistics and the Wilcoxon Test to see significant differences before and after treatment. The results of the study show that the multisensory learning model has a significant influence on improving students' gross motor development in learning the Qur'an Hadith at MIN 1 Majene. The experimental group that received the treatment showed an increase in score from 8.54 to 21.77, while the control group only increased from 8.08 to 9.31, there was an increase in scores in the experimental group due to the application of a multisensory learning model that actively integrates movement activities with Qur'anic Hadith material, so that the aspects of coordination, balance, flexibility, and motor strength of students are optimally trained, while the control group only follows regular learning without significant movement stimulation. This approach has been shown to be effective in stimulating students' coordination, balance, and motor responses through visual, auditory, and kinesthetic engagement. The Wilcoxon test confirmed the significance of the change with a  $p < 0.05$ , indicating that the treatment had a noticeable impact.

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### Keywords

Multisensory Learning Model, Learning Hadith of the Qur'an, Students' Motor Development.



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## INTRODUCTION

Basic education in Indonesia, especially in Islamic Religious Education courses, still faces various obstacles to effective, responsive implementation of children's developmental needs (Zahfa et al., 2025). At the Madrasah Ibtidaiyah level, learning the Hadith of the Qur'an tends not to be optimal in stimulating students' cognitive and motor aspects in a balanced manner. The majority of teachers still apply traditional learning methods such as lectures and memorization, which are less suited to the learning characteristics of early childhood students who require multisensory stimuli, such as physical, visual, and kinesthetic activities, to improve overall understanding and skills (Octaviani et al., 2025). Research findings indicate that children aged 6-12 years are increasingly experiencing motor development disorders, both gross and fine motor, influenced by multidimensional factors such as daily activity patterns, learning environments, and technology-based lifestyles (Prananda, 2024). Research also shows that high-intensity gadget use correlates with low physical activity in children, which impacts decreased movement coordination, balance, muscle strength, and posture control (Ananda, 2024; Yuaviki et al., 2020). In the fields of primary education and child health, it was also found that elementary school children who were more involved in screen-based sedentary activities showed lower motor achievement than those who participated in structured movement-based learning (Priska, 2025). This empirical fact reinforces the urgency of designing learning activities that consciously and integrally stimulate students' motor development, including in the learning of the Qur'anic Hadith, through a multisensory approach that combines visual, auditory, and kinesthetic elements

The need to develop more effective learning strategies in the subject of Qur'anic Hadith encourages the importance of applying a multisensory approach (Faqihuddin et al., 2024), especially since this method not only increases the active participation of students in the learning process but also supports the development of gross and fine motor skills at the same time. Although the multisensory approach has begun to be applied in inclusive educational environments, its use in madrasas remains very limited. It has not yet become part of general learning practices (Rohma et al., 2024). Given the urgency of establishing a religious foundation early on, the use of learning models that engage multiple senses simultaneously is essential to create a meaningful, holistic learning experience for students (Sulaiman et al., 2024).

One of the main problems in learning the Hadith of the Qur'an at the Madrasah Ibtidaiyah level is students' low motor skills, which is influenced by the use of less varied learning methods

that are not in accordance with the child's developmental stage (Judas, 2025). Passive, one-way approaches, such as memorization without physical involvement, tend to inhibit students' motor stimulation (Ansya et al., 2025). Based on the research, <sup>[OBJ]</sup>, the use of multisensory learning models has been shown to have a positive impact not only on improving students' ability to read the Qur'an but also on strengthening coordination of body movements, an important part of a child's overall motor development.

The current literature tends to focus on the application of multisensory learning models in the education of children with special needs; (Aziz et al., 2025), while studies exploring its application specifically in the Madrasah Ibtidaiyah environment are still very limited. In fact, the age of MI students is a crucial developmental phase, especially in motor aspects, both gross and subtle (Trisnani et al., 2025). However, it is still rare to find research that explicitly examines the extent to which multisensory approaches can improve students' motor skills at this level, thereby opening important gaps for further academic exploration in this area (Ismi & Witasoka, 2025).

Several studies have confirmed that multisensory learning models are highly effective in supporting students' learning processes. For example, research conducted by Coal & Dart, (2025) reveals that integrating *Talaqqi* Methods with a multisensory approach, such as verse visualization and hand movements, improved students' memorization and positively affected the development of their motor skills. Meanwhile, research (Khaeruman, 2021) introduced the ILHAM (Integrated Listening Hand Attention Matching) method, which has been proven to optimally stimulate fine motor skills for memorizing the holy verses of the Qur'an. These findings reinforce the premise that multisensory approaches are not only relevant but also effectively applied in the learning of Qur'anic Hadith.

The results of the literature review show that the multisensory approach plays an important role in connecting the sensory and motor systems in the brain, thereby enhancing the effectiveness of the learning process (Pakpahan & Herawati, 2023). Idrus, (2023) In his research, he emphasized that the combination of senses, such as vision, hearing, and kinesthetics (body movement), could deepen students' internalization of religious values. In line with that, al. (2025) emphasize that learning methods that involve direct physical activity are very important to implement from an early age, as they can support the growth and coordination of fine and gross muscles, which are the basis for children's motor development.

The implementation of Qur'anic Hadith learning at MIN 1 Majene is still primarily oriented towards monotonous verbal memorization, with minimal use of physical activities and visual media to support optimal student involvement. Based on initial observations by Islamic Religious Education teachers, some students had difficulty maintaining focus during study and showed low levels of physical participation in the religious learning process. This is supported by the results of initial observations made by researchers with Islamic Religious Education teachers at MIN 1 Majene before the research, which showed that the learning process of the Qur'an and Hadith was dominated by memorization and oral reading activities, with a one-way interaction pattern, minimal movement activities, and limited use of visual media. In some initial encounters, some students appeared easily distracted, less physically active, and showed decreased concentration after relatively long memorization sessions, as reflected in low motor engagement and learning responses during learning. These empirical findings are in line with previous research that states that religious learning that overemphasizes verbal memorization tends to be less effective in maintaining the focus and engagement of elementary school-age students, especially when not combined with a multisensory approach that involves visual, auditory, and kinesthetic aspects in a balanced manner (Afifah et al., 2025). This condition underscores the importance of adopting a more comprehensive, integrative, and centralized learning approach to students' learning needs and characteristics, enabling the goals of religious education to be achieved more effectively (Fikri, 2023).

The uniqueness of this research lies in integrating the multisensory learning model into the learning process of Qur'an Hadith in Madrasah Ibtidaiyah, which not only focuses on strengthening students' cognitive skills but also explicitly targets the development of their motor skills. This approach is relevant because it addresses the need for more comprehensive, context-based learning at the elementary level. The scope of the research includes the learning process of Class I students at MIN 1 Majene, which is carried out systematically and structured, and observed over a certain period, to gain a deep understanding of the effectiveness of the multisensory approach in the learning setting of the Qur'an and Hadith.

Based on the previous description, the main purpose of this study is to find out the extent to which the application of the multisensory learning model in the subject of Qur'an Hadith affects the development of students' motor abilities at MIN 1 Majene.

## **METHOD**

This study uses Quantitative methods because it aims to test, in a measurable manner, the effect of applying the multisensory learning model on students' motor development through numerical data analysis. Quantitative research generates objective data and conclusions through precise statistical techniques, thus supporting valid decision-making (Susanti et al., 2023). The approach used in this study is a Quasi-Experimental (pseudo-experimental) Unequal Control Group Design (Campbell & Stanley, 2015; Chung, 1979). There were two groups: the experimental group, which received a multisensory learning model, and the control group, which underwent conventional learning without special intervention. Package usage Unequal Control Group Design. Methodologically, this study created opportunities for significant differences in outcomes, as the control group had the potential to achieve lower outcomes because they did not receive the same learning treatment as the experimental group. This design allows researchers to compare results between groups to test the effectiveness of treatment.

This research was carried out at Madrasah Ibtidaiyah Negeri (MIN) 1 Majene, Majene Regency, West Sulawesi Province. The selection of the research location was based on the consideration that the learning of Qur'an and Hadith in the madrasah is still dominated by verbal memorization methods that do not involve multisensory activities or motor stimulation for students. In addition, initial observations showed that some students in Class I demonstrated limited motor involvement during the learning process, so this location was selected to test the effectiveness of applying the multisensory learning model on students' motor development.

The population in this study comprises all students of Class I at Madrasah Ibtidaiyah Negeri 1 Majene, a total of 26 children aged 7–8 years. Sample determination was carried out using the Saturated Sample technique, in which all members of the population are sampled because the numbers are relatively small and easy to control (Scott, 2016). The sample was randomly divided into two groups: 13 students in the Experimental Group and 13 in the control group. Limited random assignments were used to divide the sample into experimental and control groups. That is, by first equalizing the initial characteristics of students based on pre-test scores of motor development, students were paired (Matching) and randomly distributed to each group. This pattern is used to minimize differences in initial abilities between groups, given the quasi-experimental research design and the relatively small sample size. With this procedure, both groups had relatively similar initial ability levels, allowing differences in post-treatment outcomes to be more validly associated

with the application of a multisensory learning model.

The main instrument in this study is a structured observation sheet, developed based on indicators of gross motor development for children aged 7-8 years. This research instrument was developed based on a theoretical and empirical review of the characteristics of gross motor development in students aged 7-8 years and operationalized as a structured observation indicator aligned with the multisensory-based instruction of the Qur'an and Hadith. Validation is carried out through expert assessment to ensure the relevance and suitability of the content, validation of items through pre-test readability and consistency checks, and external validation by triangulating observation results with visual documentation and field notes, thus ensuring the validity and credibility of the instrument. This instrument is used to assess students' motor skills during the learning of Qur'anic Hadiths, including coordination of body movements, balance, flexibility, and basic movement strength that arise during the multisensory learning process. The instrument's content validity was established through expert review.

The data used in this study are quantitative field data (Ardiansyah et al., 2023) on students' gross motor development before and after the application of the multisensory learning model in learning the Hadith of the Qur'an. The data sources in this study include:

1. Primary Data: Primary data were obtained directly from Class I students of MIN 1 Majene through pre-test and post-test results of students' gross motor development and structured observation of students' motor activity during the learning process, which included indicators of movement coordination, balance, flexibility, and basic movement strength.
2. Secondary Data, Secondary data is obtained through: learning documentation in the form of photos and videos of student activities during the learning process, and field records that support the results of research observations.

The data were used to identify changes in students' motor abilities after applying the multisensory learning model in the learning of the Qur'an and Hadith. Data was collected through: (1) Direct observation of student activities during the learning of the Qur'an Hadith, (2) Visual documentation (photo/video) to support the observation data, (2) Pre-test and post-test using the same instrument in both groups to determine the change in results that occurred after the intervention.

Data analyzed using Descriptive Statistics and Nonparametric Inferential Statistics (Yulianto, 2016). Descriptive statistics are used to determine the average value (*red*), median, mode, standard

deviation, minimum, maximum, and frequency distributions of students' motor development. To test the significance of the difference between pre-test and post-test results in a group, the Wilcoxon Matched-Pairs Signed-Rank Test (Haryono, 2023) is used because the data are not normally distributed and the sample size is small.

The hypothesis in this study was formulated to test the effect of applying the multisensory learning model on students' motor development in learning the Hadith of the Qur'an at Madrasah Ibtidaiyah Negeri 1 Majene. The research hypothesis is formulated as follows:

- $H_0$  (Hypothesis zero): There is no significant influence between the application of the multisensory learning model in the learning of the Qur'an Hadith on the motor development of students at Madrasah Ibtidaiyah Negeri 1 Majene.
- $H_1$  (Alternative hypothesis): There is a significant influence between the application of the multisensory learning model in the learning of Qur'an Hadith on the motor development of students at Madrasah Ibtidaiyah Negeri 1 Majene.

Hypothesis testing (Mufarrikoh, 2019) done using Test *Wilcoxon Signed Rank Test* to find out the difference in students' motor development scores before and after the multisensory learning treatment.

## FINDINGS AND DISCUSSION

### Findings

In this study, the gross motor development of Madrasah Ibtidaiyah Negeri 1 Majene students is classified into four categories: deficient, moderate, good, and very good. This categorization is used to analyze students' motor development after participating in the Hadith of the Qur'an learning program using a multisensory approach. The distribution of data was compared between the experimental group that received a multisensory learning model and the control group that underwent conventional learning without special treatment.

**Table 1.** Distribution of the Frequency of Students' Gross Motor Development After the Implementation of Post-Tests in the Experimental Group and the Control Group

Interval	Categories	Experiments		Controls	
		Frequency	Introduce yourself	Frequency	Introduce yourself
6-10	Less	-	0%	9	69.2%
11-15	Pretty good	-	0%	4	30.8%
16-20	Good	2	15.4%	-	0%
21-24	Awesome	11	84.6%	-	0%

<b>Quantity</b>	13	100%	13	100%
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(Source: Data processing results, 2025)

Based on Table 1. Post-treatment test results showed that most students in the experimental group who participated in learning the Qur'an Hadith using the multisensory model experienced a significant increase in gross motor development. A total of 11 students (84.6%) obtained a score between 21 and 24 and were in the *very good category*, while the other 2 students (15.4%) were in the good category with a score of 16 to 20. None of the students were found to be in *the good enough* (scores 11-15) or *deficient* (scores 6-10) categories. These findings show that the multisensory approach can positively influence students' motor skills. In contrast, in the control group that did not receive treatment, the majority of 9 students (69.2%) remained in *the poor* category, and 4 students (30.8%) only reached the fairly good category. None of the students achieved the good or superior category, which indicates that without the application of multisensory learning methods, students' gross motor development did not show significant progress.

The improvements observed in the experimental group showed that students were able to coordinate their body movements optimally, maintain balance during physical activities, and display agile, precise movements. This ability is an important indicator of gross motor development in elementary school-age students. These results show that learning the Qur'anic Hadith using a multisensory model delivered in a structured, interactive, and fun manner effectively stimulates students' motor skills. The multisensory interventions implemented have been proven to have a positive impact on students' physical development, especially in the context of religious learning at Madrasah Ibtidaiyah Negeri 1 Majene.

The results showed that applying the multisensory learning model in the learning of the Qur'an Hadith had a positive impact on students' gross motor development. This is because learning activities that are designed in a multisensory manner allow students to directly engage in structured physical activities, such as hand movements, steps, and postures that are integrated with the subject matter, for example when reciting verses or understanding the meaning of hadith through symbolic movements. Through this active involvement, students become more trained in coordinating body movements in an appropriate and balanced manner. In addition, they also begin to understand the relationship between movement and symbolic meaning in Islamic teachings, which underpins the entire learning process. Thus, multisensory learning of Qur'anic Hadith is not only fun but also effective in improving Madrasah students' gross motor skills.

Table 2. To explain the average gross motor development of students in the experimental group before and after participating in the learning of the Qur'an Hadith using a multisensory learning model.

**Table 2.** Pretest and Post-Test Analysis Data of Children's Gross Motor Development in the Experimental Group

Activities	N	Minimum	Maximum	Red	Std. Cons
Prates	13	6	13	8,54	2,504
Post-tests	13	20	24	21,77	1,235
Valid N (Listwist)	13				

(Source: SPSS 25 output)

After the application of the multisensory learning model, the average gross motor development score of students in the experimental group experienced a significant increase, from the previous 8.54 to 21.77. The increase in the average score from 13.23 indicates that the multisensory approach to learning the Hadith of the Qur'an has a positive impact on students' gross motor skills at Madrasah Ibtidaiyah Negeri 1 Majene. For comparison, the following table presents the average scores for gross motor development in the control groups before and after learning, without special treatment, to more comprehensively show the differences in outcomes between groups.

**Table 3.** Pre- And Post-Test Analysis Data of Children's Gross Motor Development in the Control Group

Activities	N	Minimum	Maximum	Red	Std. Cons
Control Pretest	13	6	13	8,08	2,362
Post-test control	13	8	13	9,31	3,057
Valid N (Listtwist)	13				

(Source: SPSS 25 output)

Table 3 shows that the average gross motor development score of students in the control group before treatment was 8.08, and after the learning process progressed to 9.31. The 1.23-point increase in score is classified as a moderate increase. Compared with the experimental group, the improvement in the control group was much smaller. This shows that without applying the multisensory learning model in learning the Hadith of the Qur'an, the gross motor development of Madrasah Ibtidaiyah Negeri 1 Majene students did not show significant changes.

The effect of the multisensory learning model on the gross motor development of students aged 7-8 years at Madrasah Ibtidaiyah Negeri 1 Majene was analyzed using the Wilcoxon Signed Ranks Test. This test was used to assess whether there was a significant difference in scores between

the pre- and post-treatment periods in the trial group. In its interpretation, the significance value (2-tailed) must be below 0.05 to indicate a significant change due to the application of the learning model. On the other hand, if the significance value exceeds 0.05, the difference is considered statistically insignificant.

**Table 4.** The Wilcoxon Test Ranks Students' Gross Motor Development Tests  
in Both Experimental and Control Groups

Group	Z	Asimpa. Sig (2 stories)	Remarks
Experiments	-3,207b	0,01	Significant
Controls	-2.546b	0,011	Insignificant

(Source: SPSS 25 output)

The hypothesis of this study is:

- $H_0$  (Null Hypothesis): There is no significant influence between the application of the multisensory learning model in learning the Qur'an Hadith on the motor development of students at Madrasah Ibtidaiyah Negeri 1 Majene.
- $H_i$ : There is a significant relationship between the application of the multisensory learning model in the learning of the Qur'an and Hadith and the motor development of students at Madrasah Ibtidaiyah Negeri 1 Majene.

Based on Table 4, the results of the statistical test in the experimental group showed a t-value of 3.207 with a significance (2-tailed) of 0.001, which is below the threshold of 0.05. This indicates that the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_i$ ) is accepted, so it can be concluded that the multisensory learning model has a significant influence on students' gross motor development in learning the Hadith of the Qur'an at Madrasah Ibtidaiyah Negeri 1 Majene. Meanwhile, the control group obtained a t-value of -2.546 with a significance value of  $0.011 < 0.05$ , indicating a significant difference between pretest and post-test results. However, this group did not receive a multisensory intervention. The changes in the control group were primarily due to conventional learning routines. However, the influence in the experimental group was much stronger, so it can be concluded that the application of the multisensory learning model contributed more dominantly to the improvement of students' gross motor skills.

## Discussion

The results of the study show that the application of the multisensory learning model in learning the Qur'an and Hadith has a significant influence on the gross motor development of students at Madrasah Ibtidaiyah Negeri 1 Majene. This was evidenced by an increase in the

experimental group's average post-test score from 8.54 to 21.77, while the control group increased only from 8.08 to 9.31, with a much smaller improvement.

Theoretically, the multisensory learning model works by activating various sensory channels, such as visual, auditory, and kinesthetics factors, simultaneously, making it possible to establish a stronger relationship between sensory perception and motor response. (Anggraeni & Laeli, 2024) explains that multisensory activation can improve the holistic integration of the brain, sensory, and motor systems, contributing to the maturation of the child's gross motor function. This aligns with the opinion, which emphasizes the importance of active, participatory methods at the elementary school-age stage to stimulate the development of coordination and strong muscles.

Learn More. These findings also align with the principle of Multisensory Learning, which emphasizes the simultaneous involvement of various visual, auditory, and kinesthetic sensory modalities in the learning process (Abbas, 2022). Neuroeducational research shows that multisensory integration strengthens connections between neurons in the sensorimotor areas of the cortex, thereby improving children's gross motor skills (Arfizi, 2025; Kim et al., 2008). Such cross-sensory activation allows the learning process not only to occur on a cognitive level but also to be internalized through meaningful physical experiences.

The distribution of gross motor categories in the experimental group reinforced the effectiveness of this approach: 84.6% of students were in the very good category, and the remaining 15.4% were in *the good category*. No student falls into the category of good enough *or* poor. In contrast, in the control group, 69.2% of students were still in the poor category, and the remaining 30.8% were in the moderately good category, with none achieving good *or* very good grades.

In the context of basic education, especially in Class I, the multisensory approach has proven to be effective because it is in accordance with the developmental characteristics of children aged 7–8 years who are in the phase of Operational Stages of Concrete, where activity- and movement-based learning has a more optimal impact (Badriyah, 2023). A study affirms that integrating physical activity into learning significantly contributes to the development of children's executive function and motor control. This explains why students in the experimental group show much greater gross motor improvements than those in the control group.

The learning context of the Qur'an Hadith provides a unique pedagogical dimension (Raffin et al., 2024). The findings state that integrating symbolic movements in reading verses, imitating *makhraj*, and kinesthetics' activities to understand, as described by Field Rohma et al. (2024),

promotes holistic learning that connects students' spiritual, cognitive, and physical aspects. These findings are in line with research by Rohma et al. (2024), which shows that the multisensory approach significantly improves students' ability to read the Qur'an and, at the same time, enhances their coordination of movements. So does research through the development of the ILHAM (Integrated Listening Hand Attention Matching) method, which has been proven to improve children's fine motor skills during memorization.

The Wilcoxon Signed Ranks test used in this study reinforces this conclusion. In the trial group, a Z-value of -3.207 with a significance of 0.001 ( $< 0.05$ ) showed significant differences before and after treatment. Meanwhile, the control group showed a Z-value of -2.546 with a significance of 0.011; although also significant, the effect was much lower and was thought to be due to routine learning activities, not special treatments. Although the control group also showed small improvements, the improvements could be attributed pedagogically to routine exercise factors rather than to learning designs that consciously stimulate gross motor skills. This aligns with findings indicating that conventional learning tends to have a limited impact on motor development when not accompanied by structured physical activity.

Furthermore, it also shows that combining the *talaqqi* method with a multisensory approach, for example, through hand movements that accompany the recitation of verses, can improve memory while activating large-muscle coordination. This is empirical evidence that the elements of movement in religious learning are not only symbolic but also support children's physical and developmental needs. Thus, the multisensory learning model not only makes the learning process of the Qur'an Hadith more fun and interactive, but also provides a tangible contribution to the development of students' gross motor skills.

In addition to the main influence of the application of *the Multisensory approach*, the results of this study are also theoretically influenced by external factors beyond the treatment design, such as the student's biological maturity stage, daily physical activity habits, school environment, and motor stimulation patterns that children receive at home. According to Hastuti et al., (2018) this, the elementary school age is a phase of accelerated neuromuscular coordination, so the improvement of motor skills can also be influenced by the natural maturation process and by experience with non-instructional movements, including play, light exercise, and daily physical routines. The findings in this study, in particular, that limited improvement in the control group, suggest that natural developmental factors and exposure to routine activities still contribute to changes in motor scores,

although not as strongly as structured intensive multisensory learning interventions

The *Motor Development* in this study does not refer to the development of children's movements in a broad sense or across the full range of life. However, it is limited to gross motor development observed and stimulated in the context of learning the Hadith of the Qur'an. The focus of measurement is directed at basic coordination skills, balance, flexibility, and movement strength that arise in response to symbolic movement-based learning activities, postures, and kinesthetic engagement in the classroom. This approach is in line with the perspective Ismawati et al., (2021), which views motor development as the result of the interaction between the design of learning activities and the learning environment, so that the achievements obtained reflect the effectiveness of learning in stimulating students' motor skills in the formal pedagogical realm, rather than as a single indicator of the child's overall physical development outside the school context.

## CONCLUSION

Based on the research conducted, it can be concluded that the multisensory learning model has a significant influence on students' gross motor development in learning the Hadith of the Qur'an at Madrasah Ibtidaiyah Negeri 1 Majene. The application of this approach successfully increased the average motor development score of students in the experimental group from 8.54 to 21.77, which was much higher than that of the control group, which increased only from 8.08 to 9.31. These findings show that a multisensory approach, through a structured integration of visual, auditory, and kinesthetic activities, can optimally stimulate students' coordination of movements, balance, and motor responses. The results of the Wilcoxon Signed Ranks test supported this conclusion, with a p-value of  $< 0.05$  in the trial group, indicating significant differences before and after treatment. Therefore, a multisensory learning model is recommended as an alternative to the Qur'anic Hadith learning strategy, as it not only improves religious understanding but also has a positive impact on children's physical development.

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