

## **THE IMPACT OF BODY MAPPING ON BODY PART RECOGNITION IN FOURTH-GRADE STUDENTS WITH HEARING LOSS**

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### **Abstract**

Students with hearing loss are included among children with special needs. Students with hearing loss are people with mild to severe hearing impairments. This study aims to determine the effect of body mapping media on the ability to recognize body parts in fourth-grade students with hearing loss at SLB YRTRW Surakarta in the 2024/2025 academic year. This study is a quantitative pre-experimental study with a one-group pretest-posttest research design. This data collection technique uses an action test obtained through observation. The validity technique in this study uses content validity which is calculated using Aiken's V formula. The reliability test in this study uses interrater reliability using the ICC calculation. The data that has been collected was analyzed using a non-parametric test in the form of the Wilcoxon Sign Rank Test. The results of this study include the results of the assessment of the action test of the ability to recognize body parts of fourth-grade students with hearing loss. The average pretest score was 54.92, while the posttest score was 82.12. This study concludes that body mapping media affects the ability to recognize body parts in fourth-grade students with hearing loss at SLB YRTRW Surakarta in the 2024/2025 academic year.

**Keywords:** Body mapping media, body parts, hearing loss

### **Abstrak**

Siswa tunarungu termasuk dalam anak berkebutuhan khusus. Siswa tunarungu merupakan seseorang dengan hambatan pendengaran pada tingkat ringan hingga berat. Penelitian ini bertujuan untuk mengetahui pengaruh media body mapping terhadap kemampuan mengenal anggota tubuh pada siswa tunarungu kelas IV di SLB YRTRW Surakarta tahun ajaran 2024/2025. Penelitian ini merupakan penelitian kuantitatif pre-eksperimen dengan desain penelitian one group pretest-posttest. Teknik pengumpulan data ini menggunakan tes tindakan yang diperoleh melalui observasi. Teknik validitas dalam penelitian ini menggunakan validitas isi yang dihitung menggunakan rumus Aiken's V. Uji reliabilitas pada penelitian ini menggunakan reliabilitas interrater dengan menggunakan perhitungan ICC. Data yang telah terkumpul dianalisis menggunakan uji non-parametrik berupa Wilcoxon Sign Rank Test. Hasil data penelitian ini meliputi hasil penilaian tes tindakan kemampuan mengenal anggota tubuh siswa tunarungu kelas IV. Rata-rata nilai pretest adalah 54.92, sedangkan nilai posttest adalah 82.12. Kesimpulan dari penelitian ini adalah terdapat pengaruh media body mapping terhadap kemampuan mengenal anggota tubuh pada siswa tunarungu kelas IV di SLB YRTRW Surakarta tahun ajaran 2024/2025.

**Kata kunci:** Media body mapping, anggota tubuh, tunarungu

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## **INTRODUCTION**

Children with special needs have different needs from other typical children. Children with special needs need special services because they have developmental disorders and abnormalities in themselves (Desiningrum 2016). Children with hearing loss are included in children with special needs.

According to IDEA, children with hearing loss have 2 types, namely deafness and hearing impairment. Deafness is hearing impairment at a severe level, so children with deafness have a hard time understanding language. Hearing impairment is children who have experienced less severe hearing impairment, either permanent or temporary (Evanjeli & Anggadewi, 2018). According to Spencer and Orlans, children with hearing loss have their character. They have minimal behavior, they also have language and reasoning developmental disabilities in responding (Suharsiwi, 2017). Obstacles in receiving information cause a low understanding of sexual education (Ningsih, 2023).

Sexual education which has to be given to children with hearing loss is about touch restrictions on body parts. There are 2 types of touch, namely good touch and bad touch. Good touch is allowed touch and bad touch is unauthorized touch. According to Suwaryani et al. (2020) allowed touches are touches that make one feel comfortable and happy because make one feel cared for and loved. Meanwhile, unauthorized touch is touch that causes discomfort and pain. Not everyone can touch a child's body. Except for themselves, parents, childminder, and doctors can touch children's bodies between the shoulder to knee. Body parts that allow touches are the head, hand, and feet (Syahalam et al., 2023) Body parts which unauthorized to touch are the mouth, thigh, buttocks, chest, stomach, and genitals (Dewi, 2023). Qalbina & Wati (2023) added that the shoulder includes body parts that may not be liked. Recognizing body parts that allow touch and unauthorized touch are the important things to teach to children with hearing loss. This aims to ensure that children with hearing loss can recognize their body parts. Furthermore, this is one of the ways to reduce sexual harassment and violence (Kurniasari & Tianingrum, 2019)

In introducing body parts that allow touch and unauthorized touch for children with hearing loss, need to use learning media. Children with hearing loss have obstacles to their hearing ability, so they can develop their visual ability (Hirnandin & Wagino, 2018). Children with hearing loss need visualization to get language information (Noviawati, 2017). One of the ways visual learning media is body mapping media. Body mapping media is learning media that recognize and represent a form of self-protection. Body mapping media is used to recognize body parts so that children with hearing loss can protect their bodies and avoid sexual harassment (Kakak, qtd. in Melda & Kurniasari, 2020).

This research was conducted with the aim of helping children with hearing loss to recognize their body parts, especially allowed and unauthorized touch.

## **METHOD**

This study employed a quantitative research approach with a pre-experimental one-group pretest-posttest design. In this design, a pretest was administered once before the treatment to establish a baseline of the students' ability to recognize body parts. Following this, the treatment was conducted over six sessions to reinforce body part recognition. After the treatment sessions, a posttest was conducted once to evaluate any changes in the students' performance. The research subjects comprised all 11 fourth-grade students with hearing loss at SLB YRTRW Surakarta. To analyze the data, a non-

parametric statistical test, specifically the Wilcoxon Signed Rank Test, was used to determine the significance of the differences between pretest and posttest results, providing insights into the treatment's effectiveness.

## RESULTS AND DISCUSSION

This research aims to know of the effect body mapping media on the ability to recognize body parts in students with hearing loss who are in fourth grade at SLB YRTRW Surakarta 2024/2025 academic year. This research used a one-group pretest-posttest system in the form of an action test. The action test is carried out by attaching round stickers on body parts that match their colors. The red sticker is for unauthorized touch and the green sticker is for allowed touch. Result data in this research in the form of pretest and posttest score results. The result of the pretest was obtained before students with hearing loss got treatment. Meanwhile, the result of the posttest was obtained after students with hearing loss got treatment. Comparison of pretest and posttest score results as follows:

Table 1. Comparison Score

No	Name/initial	Pretest score	Posttest score
1.	AD	65.8	84.16
2.	ANR	30	70.83
3.	EFW	64.16	85.83
4.	JSP	44.16	73.33
5.	MAA	64.16	82.50
6.	RAS	58.33	97.50
7.	NUA	44.16	65
8.	RAB	64.16	79.16
9.	SJB	53.33	95
10.	STA	64.16	88.33
11.	ZKA	51.66	81.66
<b>Average Score</b>		54.92	82.12
<b>Minimum score</b>		30	65
<b>Maximum score</b>		65.8	97.50

According to the table above, it can be seen that the average pretest score is 54.92 which means low. The lowest pretest score is 30 and the highest pretest score is 65.8. meanwhile, the average post-test score is 82.12 which means very high. The lowest posttest score is 65 and the highest posttest score is 97.50. based on give pretest, treatment, and posttest, it can be seen that every student with hearing loss has a different ability. A few students can learn quickly and the others are slow learners. Based on a comparison between the pretest and the posttest scores, it is known that body mapping media can influence the ability to recognize body parts in fourth-grade students with hearing loss at SLB YRTRW Surakarta.

Data analysis on this research used the Wilcoxon Signed Rank Test that was processed with SPSS version 25. The analysis counts result of Wilcoxon Signed Rank Test as follows:

		Ranks		
		N	Mean Rank	Sum of Ranks
Posttest - Pretest	Negative Ranks	0 <sup>a</sup>	.00	.00
	Positive Ranks	11 <sup>b</sup>	6.00	66.00
	Ties	0 <sup>c</sup>		
	Total	11		

a. Posttest < Pretest  
b. Posttest > Pretest  
c. Posttest = Pretest

Figure 1. Wilcoxon Analysis

Based on the data analysis results between the pretest and posttest using the Wilcoxon Signed Rank Test, it can be known that negative ranks on N, mean rank, and sum of ranks are 0. Positive rank results on the table show the number 11, which means no one research subject experienced a decline in value. Ties on the table show number 0, which means no one research subject gets the same score on the pretest and posttest. Number 6.00 on the mean rank column shows that there is an increase in the average value of 6.00 and 66.00 in the sum of the rank column. The following is the data from the analysis using the Wilcoxon Signed Rank Test:

Test Statistics <sup>a</sup>	
	Posttest - Pretest
Z	-2.934 <sup>b</sup>
Asymp. Sig. (2-tailed)	.003

a. Wilcoxon Signed Ranks Test  
b. Based on negative ranks.

Figure 2. Wilcoxon Rank Test Results

The count result statistic test shows that Wilcoxon Signed Rank Test (Z) score is -2.934 and Asymp. Sig. (2-tailed) is 00003 with a significant level ( $\alpha$ ) is 0.05. based on the data,  $H_0$  rejected and  $H_a$  accepted. Thus, body mapping media affected the ability to recognize body parts of fourth-grade students with hearing loss at SLB YRTRW Surakarta.

There is previous research on the use of body mapping, yet there is a difference with current research results. The purpose of previous research is to provide understanding and awareness for self-protection from sexual harassment. The purpose of current research is to know the ability to recognize body parts in grade 4 students with hearing loss. The subject of research amounts to 20 kindergarten students, meanwhile, current research amounts to 11 fourth-grade students with hearing loss. The research methods used in previous research were in the form of counseling and science and technology simulations, yet the current research used one group pretest-posttest method. There was no mention of urgency in previous research, but in this research, fourth-grade students with hearing loss experienced

a crisis of awareness of which body parts could and could not be touched.

The success of this research is supported by the use of body mapping media to recognize body parts, especially allowed touch and unauthorized touch. Body mapping media is included in concrete media. According to Riyana et al. (2020) a body mapping media is real media that is capable of providing a hands-on experience for the user. Body mapping media shows all body parts. Recognizing the body parts of students with hearing loss is part of getting to know the concept of self (Sari, 2016). Body mapping media belonging to colored visual media. Wichmann (qtd. in Sujarwo & Oktaviana, 2017) thinks that color has a function as a strong information connector for the cognitive system and has a significant role in increasing memory performance. Giving different colors to body parts that allow touch and unauthorized touch will help students with hearing loss to remember those body parts. Body mapping media can be used repeatedly. According to Purwanto (qtd. in Setiyani et al., 2022) that can be used repeatedly and repeating something will increase the skills and knowledge that is possessed will be increasingly mastered and become deeper. Besides that, body mapping media can be used for hands-on practice guidance. Hands-on practice is learning activities where students are directly involved by providing materials and then demonstrating using tools.

## CONCLUSION

Based on the research results, fourth-grade students with hearing loss demonstrated an improved ability to recognize their body parts, particularly in distinguishing between allowed and unauthorized touch, through the use of body mapping media. This improvement is evidenced by the increase in scores from the pretest (average score of 54.92) to the posttest (average score of 82.12). Therefore, body mapping media positively influenced the ability to recognize body parts in fourth-grade students with hearing loss at SLB YRTRW Surakarta in the 2024/2025 academic year. For future research, it would be beneficial to explore the effects of body mapping media on other age groups or students with varying levels of hearing loss to better understand its adaptability and impact. Additionally, researchers could investigate long-term retention of body part recognition skills and examine whether the inclusion of other sensory aids further enhances learning outcomes in students with hearing impairments

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