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The Effect of Audiolyfee Stimulation on the Optimization of Children's Potential and Talent: A Case Study in Banda Aceh

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ABSTRACT

Audio-based technology, such as Audiolyfe, offers innovative solutions to overcome this challenge. This study aims to analyze the effect of Audiolyfe stimulation on the development of children's potential and talents in Banda Aceh. Using a quantitative method and a quasi-experimental approach, this study involved 25 children aged 0-12 years who were selected through a purposive sampling technique. Data were collected through observation and questionnaires, then analyzed using descriptive statistics. The results showed that Audiolyfe stimulation has a significant effect on the development of children's potential and talents. A clear difference can be seen in the pretest and posttest results, where children who receive regular stimulation show an increase in creativity, cognitive ability, and enthusiasm for learning. These findings indicate that Audiolyfe can be an effective tool to support the optimization of children's abilities from an early age. With a structured approach, this technology makes a real contribution to preparing the younger generation to be more confident and have honed skills to face the challenges of the future.

KEYWORDS *Stimulation, Audiolyfe, Potential, Talent, Child.*

INTRODUCTION

Childhood is a very important period in an individual's development, as in this phase cognitive, motor, social and emotional abilities develop rapidly. At an early age, children's potential and talents begin to appear and can be the basis for further development. Potential and talent have a close relationship, where potential can be considered the foundation for the emergence of talent. Every child has unique potential, and talent is one manifestation of that potential (Kinesti et al., 2022).

Potential can be defined as the ability or capacity a child has to develop and achieve something in the future. It can be likened to a seed that has the potential to grow into a big and strong tree. The development of this basic potential provides opportunities for children to prepare themselves for the rest of their lives, so that

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they can grow into full-fledged adults (Ratnawati, 2021). Meanwhile, talent refers to the innate potential that a person has from birth. Talent is seen in human behavior that shows certain skills, such as music, art, writing, mathematical skills, expertise in machinery, and others. According to Wintara (2017) in (Prima, 2021), talent is a person's basic ability to learn faster than other people, and the results obtained are better. Therefore, talent can be considered a basic skill or ability possessed by an individual, which differentiates one individual from another.

In today's digital age, technology has become an integral part of a child's education and development. Audiolyfe, an audio-based technology, is emerging as an innovative approach to address this challenge by providing purposeful stimulation to enhance creativity, cognitive ability and enthusiasm for learning. Despite its great potential, studies on the impact of such technology on child development are limited, especially in the context of a specific region such as Banda Aceh.

The development of children's potential and talents has a very important role for their future. According to Abidin and Nasrudin (2021), this development has great potential to have a positive impact in the future, especially if done with the help of the surrounding environment and parents. Children's potential and talents need to be optimally developed to support their further development. However, in reality, the development of children's potential and talents often encounters challenges. There are children who have shown their talents since childhood, and at this point, the role of parents is very important to facilitate and help children hone these talents so that they are not lost. However, for children who do not discover their talents until adulthood, they must try to find their own potential, which of course requires the right ways to arouse that potential.

In dealing with this problem, proper stimulation can be very helpful in optimizing children's potential and talents early on. One emerging form of stimulation is audio-based technology, such as Audiolyfe. Audiolyfe is a therapy platform that uses audio waves projected onto a child's brain channels to stimulate and support the development of their potential and talents. This sound-based stimulation method aims to influence the brain through audio frequencies, with the hope of improving children's cognitive, emotional and social abilities more effectively. This kind of stimulation is expected to help children recognize and develop their potential and talents more optimally.

The concept of developing children's potential and talents through audio-based stimulation is based on various studies that show that sounds, especially those structured in audio form, can stimulate children's brain development. Previous research by Ragone et al. (2021), revealed that audio can provide cognitive, psychosocial, behavioral, and motor benefits, especially in the population of children with autism. Audio as an intervention was used to support the development of social communication and motor skills of children with autism. In addition, research by Hairunnas (2023) also provides important insight into audio therapy for children with ADHD (*Attention Deficit Hyperactivity Disorder*), who often have difficulty focusing. This audio-based therapy uses sound stimulation to improve the physical and mental quality of these children. The sound waves produced by audio can stimulate a child's brain development, provide an alternative to medication, and

help in improving focus and reducing ADHD symptoms. This study shows a significant relationship between the design of audio instruments and therapeutic activities that can be used to treat attention disorders in children.

These studies are relevant to the application of audio media-based interventions in order to stimulate children's potential and talents, as they show how audio can play a role in the development of various aspects of children's abilities. The results of previous research are an important reference, as they provide an overview of how audio media can stimulate children's potential and talents, and support their development. However, while there are various studies that show the potential of audio-based stimulation in supporting children's development, there is still a lack of research that specifically examines how the use of Audiolyfe affects children's potential and talents, both from a qualitative and quantitative perspective.

Therefore, this research aims to fill the gap by exploring the extent to which stimulation using Audiolyfe can contribute to the development of children's potential and talents. This research is expected to provide new insights into how audio technology can be used to support children's development. Understanding the influence of Audiolyfe on various aspects of child development, this research will make an important contribution to the development of innovative stimulation methods, which are not only beneficial for children, but can also be a reference for parents, educators, and technology developers. The results of this study can provide valuable information in designing more effective approaches in supporting children's development in various areas, including creativity, social skills and other cognitive abilities.

RESEARCH METHOD

This study used a quantitative method with an experimental approach to explore the effect of Audiolyfe-based stimulation on the development of children's potential and talents in Banda Aceh. Quantitative research was chosen because this approach helps systematic analysis of causal relationships between variables, and provides results that can be measured and processed using statistical, mathematical, or computational techniques (Rustamana et al., 2024). Through this approach, the research aims to get an accurate picture of the effectiveness of Audiolyfe as a stimulation media in supporting children's development in Banda Aceh. The study population consisted of children aged 0-12 years who experienced obstacles in the development of their potential and talents, such as not finding their interests or talents, or showing a lack of enthusiasm to explore their potential. The research sample was taken using purposive sampling technique, with a total sample of 25 children.

Data collection was done through direct observation of the child's behavior during the stimulation process, as well as questionnaires filled out by parents or caregivers who know the child intimately. These questionnaires were designed to measure changes in various aspects of child development, such as creativity, logical thinking, and social skills. The collected data were analyzed using two types of statistical approaches. Descriptive statistical analysis was used to describe the initial condition of the children before receiving the treatment and the changes that occurred after the intervention. Furthermore, inferential statistical analysis was

applied to test whether there was a significant effect of using Audiolyfe on the development of children's potential and talents. This approach is done by comparing the data before and after the intervention in the experimental group. The hypotheses proposed in this study are as follows:

H0: There is no significant effect of Audiolyfe stimulation on the development of children's potential and talent in Banda Aceh.

H1: There is a significant effect of Audiolyfe stimulation on the development of children's potential and talent in Banda Aceh.

RESULT AND DISCUSSION

This study aims to evaluate children's potential and talent through data collection conducted in two stages, namely before and after the intervention. In the initial stage, a pre-test was completed by parents or caregivers of children in Banda Aceh. This test aims to identify children's behavior as a basis for initial assessment. After the initial test, the child was given an intervention in the form of Audiolyfe stimulation. Next, a final test (post-test) was conducted, which was again filled in by parents or caregivers to assess changes in children's behavior after receiving the stimulation. Data from the pre-test and post-test were then analyzed to determine whether the intervention had a significant effect on the development of the child's potential and talent. The results of this analysis, including descriptive statistics of both tests, are presented in Table 1. This table provides a comparative picture of the results before and after the intervention, reflecting the impact of the stimulation on the behavior of the children who were the subject of the study.

Table 1. Descriptive Statistics Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Experimental pretest	25	45	80	63.08	10.054
Experimental posttest	25	70	90	80.16	6.032
Valid N (listwise)	25				

It can be seen that the test results conducted in the experimental group showed a significant increase in the development of children's potential and talent after being given intervention in the form of Audiolyfe stimulation. Based on the table, the pre-test scores conducted before the intervention had a minimum score achieved by the children of 45, while the maximum score reached 80. The average pre-test score was recorded at 63.08 with a standard deviation of 10.054. These results indicate a considerable variation in the development of children's potential and talents before receiving Audiolyfe stimulation. Then, after the intervention, the post-test results showed a significant increase. The minimum score increased to 70, while the maximum score reached 90. The average post-test score rose to 80.16 with a standard deviation of 6.032, indicating that the Audiolyfe stimulation intervention had a positive impact on children's potential and talent development.

The descriptive results show that Audiolyfe stimulation is effective in improving the development of children's potential and talent, as seen from the significant increase in the average score between the pre-test and post-test. However, to ensure that the difference is truly statistically significant and not the result of chance, further analysis through a Paired Sample T-Test is required. Before conducting the Paired Sample T-Test, the first step is to test the normality of the data.

Normality test is a statistical method used to determine whether the data obtained follows a normal distribution or not. Data normality can be tested in various ways, such as using the Kolmogorov-Smirnov test, the Shapiro-Wilk test, or by visualizing data through graphs and analyzing distribution patterns (Quraisy, 2020). The normality test is important to do, because in the Paired Sample T Test, one of the prerequisites is that the data must have a normal distribution. In the normality test, if the significance value (sig) is greater than 0.05, then the null hypothesis (H0) cannot be rejected, which means that the data is considered normally distributed. The results of the normality test in this study are presented in Table 2, as follows:

Table 2. Normality Test Results

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Class	Statistic	df	Sig.	Statistic	df	Sig.
Audiolyfe stimulation results	Experimental pretest	.154	25	.127	.953	25	.293
	Experimental posttest	.169	25	.062	.934	25	.110

a. Lilliefors Significance Correction

In the process of analyzing the normality of the data, the relatively small sample size of 25 respondents made the Shapiro-Wilk Test a more appropriate method than the Kolmogorov-Smirnov Test. The Shapiro-Wilk test is often recommended for small samples due to its ability to more accurately evaluate the normality distribution of data. Based on the test results, the significance value for the pre-test is 0.293, while for the post-test is 0.110. Since both of these values are greater than the significance threshold of 0.05, the null hypothesis (H0), which states that the data is normally distributed, cannot be rejected. Thus, it can be concluded that the data from the pre-test and post-test fulfill the assumption of normality.

After confirming that the data was normally distributed, the analysis continued with a Paired Sample T-Test to determine if there was a significant difference between the pre-test and post-test results after the Audiolyfe stimulation intervention was given. This step is important to test the effectiveness of the intervention in increasing children's potential and talent. This study bases its

analysis on two main hypotheses. The first hypothesis states that Audiolyfe stimulation does not have a significant effect on the development of children's potential and talents. In contrast, the second hypothesis states that this intervention has a significant effect.

To determine whether Audiolyfe stimulation has a significant effect, the analysis is carried out using test criteria based on the significance value (Sig.). If the value of Sig. (2-tailed) is less than 0.05, then the null hypothesis (H0) is rejected and the alternative hypothesis (Ha) is accepted. This indicates that the intervention in the form of Audiolyfe stimulation has a significant effect on the development of children's potential and talent. Conversely, if the Sig. value is greater than 0.05, the null hypothesis (H0) is accepted, and the alternative hypothesis (Ha) is rejected, indicating that the intervention does not have a significant effect (Haryanti et al., 2021). Table 3 below presents the results of the Paired Samples T Test.

Table 3. Paired Sample t Test Results

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Experimental pretest - Experimental posttest	-17.080	7.926	1.585	-20.352	-13.808	-10.774	24	.000

The results of the analysis using the Paired Sample t-Test, as presented in Table 3, showed a significant difference between the pre-test and post-test scores in the experimental group. The mean difference between the pre-test and post-test results was -17.080, with a standard deviation of 7.926. This indicates that there is an increase in the development of children's potential and talent after being given intervention in the form of Audiolyfe stimulation. Further analysis shows that the t value obtained is -10.774 with a degree of freedom (df) of 24. The significance value (Sig. 2-tailed) of this test is 0.000. Since the significance value is smaller than the 0.05 threshold, the null hypothesis (H0) is rejected, and the alternative hypothesis is accepted. This conclusion confirms that Audiolyfe stimulation has a statistically significant influence on the development of children's potential and talents.

The research shows that Audiolyfe stimulation is an effective method in supporting the development of children's potential and talents. The analysis showed a significant difference between pre-test and post-test scores in Banda Aceh, with the decrease in pre-test scores reflecting the positive impact of the intervention. The

Audiolyfe method successfully helped children overcome various obstacles, such as difficulties in finding interests or lack of enthusiasm to explore their potential and talents.

Audiolyfe stimulation is a technique that utilizes sound waves or audio with specific frequencies to stimulate brain activity. This approach is based on the claim that certain sound frequencies can affect brain function and improve cognitive abilities, such as concentration, memory and learning ability. These findings are in line with previous research, which revealed that neurological music therapy is an evidence-based practice capable of stimulating and altering neural pathways to improve brain performance (Sharma et al., 2023). In a subconscious state, music and rhythm can work simultaneously to activate different parts of the brain. Moreover, the auditory and visual feedback integrated in this process is known to enhance neuroplasticity, which in turn strengthens motor learning and functional recovery.

The mechanism of action of providing audio stimulation through methods such as Audiolyfe is often linked to the concept of neuroplasticity, which is the brain's ability to change and form new connections in response to stimulation. The definition of neuroplasticity expressed by Puderbaugh (2023) explains that neuroplasticity is "the ability of the nervous system to change its activity in response to intrinsic or extrinsic stimuli by reorganizing its structure, function, or connections." Relevant to this, auditory stimulation delivered through Audiolyfe helps promote neuroplasticity by strengthening connections between neurons in the brain. This activity plays an important role in supporting children's memory, learning and creativity, helping them to develop their full potential.

This finding is supported by previous research, Granddywa (2022) revealed that the use of music as a companion medium to the main therapy in children with autism can improve cognition skills, including memory and concentration. Music acts as a stimulus that stimulates the brain to build new neural pathways, support the learning process, and strengthen other cognitive functions. In addition, Wahyuningrum (2017) found that music therapy also had a positive effect on increasing verbal creativity in autistic children aged five to six years.

Another important aspect that is strengthened through audio stimulation is attention, which is closely related to the brain's memory system. Good attention helps the brain to regulate the developmental process to its full potential, while a lack or loss of attention can lead to decreased productivity. In this case, productivity is defined as a structured process to develop one's potential. So stimulation through the Audiolyfe method not only improves cognitive abilities, but also helps children achieve higher productivity and creativity through mechanisms that support comprehensive brain development.

AudioLyfe stimulation also works by activating certain areas of the brain through the use of the right frequencies, which in turn enhances creative thinking and strengthens the child's ability to focus. This brain activation helps children to better process new ideas. In studies conducted, it was shown that children who

received regular AudioLyfe stimulation experienced an increase in creativity. They became better able to generate new ideas, complete tasks with innovative approaches, and showed better understanding of complex concepts.

In addition, AudioLyfe stimulation also plays a role in improving brainwave synchronization, such as alpha and beta waves, which play an important role in concentration and focus. Alpha waves are often associated with a state of relaxation and mental readiness, while beta waves are associated with alertness and high concentration. In a study conducted by Garcia-Argibay et al. (2022), it was found that certain audio frequencies, particularly in the 40 Hz range, can stimulate gamma wave activity in the brain. This activity is known to be closely related to improved cognitive function, including working memory and attention. Stimulation with audio frequencies that correspond to alpha waves is also reported to create an optimal state of relaxation, which in turn supports improved concentration and focus. This phenomenon occurs through a brainwave entrainment mechanism, whereby brainwaves adjust to a given external frequency, thereby affecting overall neural activity.

Through the ability to improve brainwave synchronization and facilitate better focus, AudioLyfe stimulation can help children to learn more quickly and efficiently. Children who are able to concentrate better have a strong foundation to their talents, as they can process information more optimally and respond more quickly to new challenges. This ultimately supports the development of a child's full potential, which is the main goal of stimulation like AudioLyfe.

Therefore, the findings conclude that AudioLyfe stimulation is proven to be effective in developing children's potential and talents through mechanisms involving brain activation, increased concentration, and creativity development. The findings from this study provide a strong foundation for using AudioLyfe as an innovative approach in supporting child development. It should be noted that Audiolyfe is a gradual stimulation and cannot provide instant results. Therefore, it is very important for parents to be involved in ensuring that the therapy is applied consistently at home and supported with regular check-ups to ensure the overall success of the therapy program.

CONCLUSION

Stimulation using Audiolyfe proved to have a significant impact on the development of children's potential and talent in Banda Aceh. The measurement results showed a significant increase in pretest and posttest scores after the children were given intervention in the form of Audiolyfe stimulation. This technology utilizes specific sound frequencies specifically designed to stimulate areas of the brain associated with creativity and concentration. Children who regularly received this stimulation experienced improvements in their creativity and cognitive abilities. Thus, Audiolyfe stimulation is an effective tool in supporting the growth of children's potential, making an important contribution in spurring the development of their talents and intelligence in various fields. The findings offer

valuable guidance for parents and educational institutions in Banda Aceh in optimizing children's potential through innovative technology-based approaches.

REFERENCES

Abidin, Z., & Nasirudin, N. (2021). Pengembangan bakat dan minat peserta didik di madrasah ibtidaiyah miftahul muna kesilir banyuwangi. *EDUCARE: Journal of Primary Education*, *2*(2), 119-134.

Granddywa, A. (2022). *Penggunaan Musik Anak Untuk Meningkatkan Atensi dan Produktivitas Anak Autisme di Klinik Tumbuh Kembang Sandbox Bekasi* (Doctoral dissertation, Institut Seni Indonesia Yogyakarta).

Hairunnas, H. (2023). Analisis Fungsi Instrumen Musik Sebagai Produk Terapeutik Bagi Anak dengan ADHD. *ASKARA: Jurnal Seni dan Desain*, *2*(1), 14-24.

Haryanti, W., Adisel, A., Syafir, F. S., & Suryati, S. (2021). Pengaruh Media Dua Dimensi Terhadap Pemahaman Konsep Matematika. *Journal of Elementary School (JOES)*, *4*(2), 160-165.

Kinesti, R. D. A., Setyani, Y., Munawaroh, A., Saifulloh, F., Falahuddin, A., & Izzah, F. (2022). Pengembangan Potensi Bakat Minat Siswa melalui Kegiatan Ekstrakurikuler di SD Istiqomah Bandung. *ARZUSIN*, *2*(3), 284-293.

Prima, E. (2021). Peran guru dalam pengembangan bakat dan minat anak melalui pembelajaran jarak jauh di masa pandemi. *Indonesian Journal of Early Childhood: Jurnal Dunia Anak Usia Dini*, *3*(1), 1-6.

Puderbaugh, M., & Emmady, P. D. (2023). Neuroplasticity. In *StatPearls [Internet]*. StatPearls Publishing.

Quraisy, A. (2020). Normalitas Data Menggunakan Uji Kolmogorov-Smirnov dan Saphiro-Wilk: Studi kasus penghasilan orang tua mahasiswa Prodi Pendidikan Matematika Unismuh Makassar. *J-HEST Journal of Health Education Economics Science and Technology*, *3*(1), 7-11.

Rakhshan, V., Hassani-Abharian, P., Joghataei, M., Nasehi, M., & Khosrowabadi, R. (2022). Effects of the Alpha, Beta, and Gamma Binaural Beat Brain Stimulation and Short-Term Training on Simultaneously Assessed Visuospatial and Verbal Working Memories, Signal Detection Measures, Response Times, and Intrasubject Response Time Variabilities: A Within-Subject Randomized Placebo-Controlled Clinical Trial. *BioMed Research International*, *2022*(1), 8588272.

Ragone, G., Good, J., & Howland, K. (2021). How technology applied to music-therapy and sound-based activities addresses motor and social skills in autistic children. *Multimodal Technologies and Interaction*, *5*(3), 11.

Ratnawati, S. (2021). Pengembangan Potensi Anak Usia Dini. *La-Tahzan: Jurnal Pendidikan Islam*, *13*(1), 97-115.

Rustamana, A., Wahyuningsih, P., Azka, M. F., & Wahyu, P. (2024). Penelitian metode kuantitatif. *Sindoro: Cendikia Pendidikan*, *5*(6), 81-90.

Sharma, P., Gupta, M., & Kalra, R. (2023). Recent advancements in interventions for cerebral palsy–A review. *Journal of Neurorestoratology*, *11*(3), 100071.

Wahyuningrum, A. D. (2017). Pengaruh Terapi Musik Mozart Terhadap Perubahan Kreativitas Pada Anak Autis Di Klinik Terapi Wicara Fastabikul Khoirot Bedali Lawang. *Journal of Nursing Science Update (JNSU)*, *5*(1), 1-5.