

Kinesthetic Intelligence and Physical Literacy of Elementary School Students: A Case of Islamic Elementary School in Riau

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Abstract: Kinesthetic Intelligence and Physical Literacy of Elementary School Students: A Case of Islamic Elementary School in Riau. Objective: This study aims to provide an overview of the profile of kinaesthetic intelligence abilities and physical literacy abilities of students at Raudatul Athfal Al-Hidayah Tembilahan-Riau. **Methods:** The approach used in this research is quantitative with the sampling technique being total sampling. **Findings:** the kinaesthetic intelligence profile of children in Raudatul Athfal Al-Hidayah in Tembilahan-Riau is dominated by children (students) with “good” abilities as many as 36.84%, 31.58% “high” category, 23.68% “medium” category, and 7.90% “low” category. As for the physical literacy ability, it is dominated by children with the ability in the “good” category as much as 32.90%, the ability in the “very good” category as much as 30.26%, the “moderate” category as much as 11.84%, and the remaining 11.84 % categorized as “low”. **Conclusion:** there is a significant correlation between kinaesthetic intelligence and children’s physical literacy abilities. Therefore, it also shows that kinaesthetic intelligence has a significant effect on children’s physical literacy abilities.

Keywords: kinesthetic intelligence, physical literacy, elementary school students.

Abstrak: Kecerdasan Kinestetik dan Literasi Fisik Siswa Sekolah Dasar: Kasus Sekolah Dasar Islam di Riau. Tujuan: Penelitian ini bertujuan untuk memberikan gambaran tentang profil kemampuan kecerdasan kinestetik dan kemampuan literasi fisik siswa di Raudatul Athfal (RA) Al-Hidayah Tembilahan-Riau. **Metode:** Pendekatan yang digunakan dalam penelitian ini adalah kuantitatif dengan teknik pengambilan sampel adalah sampling total. **Temuan:** profil kecerdasan kinestetik anak Raudatul Athfal (RA) Al-Hidayah di Tembilahan-Riau didominasi oleh anak (siswa) kemampuan dengan kategori “baik” sebanyak 36,84%, kategori “tinggi” sebanyak 31,58%, kategori “sedang” sebanyak 23,68%, dan sebanyak 7,90% kategori “rendah”. Adapun untuk kemampuan literasi fisik, didominasi oleh anak dengan kemampuan kategori “baik” sebanyak 32,90%, kemampuan dengan kategori “sangat baik” sebanyak 30,26%, kategori “sedang” sebanyak 11,84%, dan sisanya sebanyak 11,84% berkategori “rendah”. **Kesimpulan:** terdapat korelasi yang signifikan antara kecerdasan kinestetik terhadap kemampuan literasi fisik anak. Oleh karena itu, hal ini juga menunjukkan bahwa kecerdasan kinestetik berpengaruh secara signifikan terhadap kemampuan literasi fisik anak.

Kata kunci: kecerdasan kinestetik, literasi fisik, siswa sekolah dasar.

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■ INTRODUCTION

Education is a process to develop and optimize all the potential possessed by students as a provision for life in the future. Various potentials that must be developed in the educational process include various aspects, both physical (physical) and physical (spiritual) aspects. This is as stated by Sujana (2019) that the purpose of education is none other than humans who believe and are devoted to God, have a noble character, are healthy, intelligent, have feelings, are willing, and can work; able to meet various needs reasonably, able to control his passions; personality, community, and culture and also making national character (Idris, Hassan, Ya'acob, Gill, & Awal, 2012). Thus, the educational process must be oriented to the development of all the potential of students.

One of the potential students that must receive serious attention from the teacher is kinesthetic intelligence. Through good kinesthetic intelligence, a person will be able to use work well and support the development of other intelligence. This is as stated by Umami, Kurniah, & Delrefi (2016) and Ay et al., (2018) that kinesthetic intelligence is the ability to use the body skillfully to express ideas or thoughts and feelings, able to work well in handling and manipulating objects. In addition, Sobariah & Santana (2019) also said that kinesthetic intelligence is related to the ability to use whole-body movements to express ideas and feelings as well as the skill to use hands to move things. Similarly, Yusnita (2019) explains that kinesthetic intelligence is the skill of using the whole body to express ideas and feelings (for example, as an actor, pantomime, athlete, or dancer) and the skill of using hands to create or change something (for example, as a craftsman, sculptor, mechanic, and surgeon). This intelligence includes specific physical abilities, such as coordination, balance skills, strength, flexibility, and speed as well as the ability to receive stimuli and things related to

touch. Thus it is clear that kinesthetic intelligence plays a very important role in the success of students in the future (Michelaki & Bournelli, 2016).

Some research shows that kinesthetic intelligence has a positive effect on a person's personality. This is as stated by Mastura and Ria Novianti (2020) that kinesthetic intelligence has a positive effect on children's self-confidence, supporting students' academic achievement (Baba & Güçlü, 2015), effect on learner commitment (Jonathon Gonzales, 2014). Self-confidence plays a very important role in improving student learning outcomes (Dewi, Puspadewi, & Wibawa, 2020), individual enthusiasm (Bénabou & Tirole, 2002), self-efficacy (Malureanu, Panisoara, & Lazar, 2021), making effective sportspersons (Kuloor & Kumar, 2020). This is also reinforced by the results of research by Asiyah, Walid, & Kusumah (2019), which found that self-confidence affects student achievement motivation. It means that indirectly kinesthetic intelligence also has a positive impact on achievement motivation of student learning outcomes, including children at an early age. In addition Suhaimi (2017) and Sheldrake (2016), also found that kinesthetic intelligence can be empowered to improve a person's literacy ability. This means that kinesthetic intelligence also plays a role in increasing children's knowledge and language skills and sureness as motivational languages of attention, usefulness, then extra effects.

In addition to kinaesthetic intelligence, another potential that must be developed in every student is physical literacy ability. According to Wilkie et al. (2022), Li, Sum, Sit, Liu, & Li, (2021) and Ahmad Nasrulloh (2012), physical literacy is the ability to identify, understand, interpret, create, respond effectively, and communicate using the dimensions of human needs in a wide range of situations and contexts. According to Gustian (2020) and Brown, et

al. (2020), that physical literacy can be interpreted as a foundation in the formation of behavior, awareness, understanding of active lifestyles, pleasure in carrying out activities, the ability to identify, understand, interpret, respond effectively in the use of body movement abilities in a context that wide and varied. Meanwhile, Lundvall (2015) explains that physical literacy describes experiences that are manifested by physical activities to improve or improve aspects of physical performance of movements that allow certain goals to be achieved, or elements of movement that need attention.

According to Ahmad (2012) and Olive, et al., (2021), physical literacy affects activity ability. This means that children's physical activity is strongly influenced by their physical literacy abilities. Hanafi, Asmawi, Dlis, & Said (2020) and Chen, (2015), in their research also say that physical literacy provides an opportunity for a person to think and motivation to move: physical, psychological, cognitive, social and also leaning outcome (Sum, Wallhead, Ha, & Sit, 2018). This is also reinforced by the results of research by Wang, Cheng, Chen, & Sum (2020) that there is a positive influence between a person's physical literacy on psychological satisfaction. This means that someone who has good physical literacy skills will also have a relatively good level of psychological satisfaction (happiness). In addition Miyahara (2020), also said that physical literacy can be used as a convenient alternative in assessing a person's level of health and healthy lifestyle goals. Thus it is clear that physical literacy has an important role in improving one's quality of life.

Seeing the important role of physical literacy in maintaining the quality of life, living a healthy, prosperous, and happy life, physical literacy skills need to be developed from the start. In the context of education, the development of physical literacy skills can be done through various

educational activities. This is as suggested by Gustian, Supriatna, & Purnomo (2019) and Ennis (2015) that for early childhood, increasing physical literacy skills can be done through physical activity-based learning activities. According to Caldwell, Wilson, Mitchell, & Timmons (2020), the development of physical literacy abilities, can be done through the development of programs and equipment that support physical literacy skills. Meanwhile, according to Warner et al. (2021) efforts to improve students' physical literacy skills can be carried out in sports learning by utilizing basic movement skills (FMS) as a teaching tool and health promotion. Gustian (2020), in his research, states that for early childhood, the development of physical literacy skills can be done through traditional game activities based on physical activities. Higgs et al., (2008) and (Castelli, et al., 2014) wrote that improving physical literacy abilities of early childhood can be done with various learning activities (bodily action package) that are oriented towards physical activities. The teacher needs to create instructional strategy and PETE (Silverman & Mercier, 2015), and also over diversion instruction (Hastie & Wallhead, 2015). Therefore, physical literacy skills are very important to be developed since early education.

Seeing and understanding the important role of kinesthetic intelligence and physical literacy abilities in a person, it is necessary to identify or recognize this potential from the start. With the introduction of the potential for kinesthetic intelligence and physical literacy abilities from the start, the steps for developing kinaesthetic intelligence and physical literacy can be carried out optimally by teachers and parents. Therefore, the focus of this study is to describe the profile of the level of kinaesthetic intelligence and its relationship with the physical literacy ability of children at Raudatul Athfal Al-Hidayah in Tembilahan Pekanbaru-Riau. In other words, the question that will be answered in the research

is what is the profile of the level of kinesthetic intelligence and its relationship to the physical literacy ability of children at Raudatul Athfal (RA) Al-Hidayah in Tembilahan-Riau?

■ **METHODS**

This study uses a quantitative approach with the data collection method is through observation and documentation. This is based on the instrument, data collection process, and data analysis that is quantifiable (Mulyadi, 2011), or in the form of numbers and ends with a generalization process. The sample in this study was students (children) in the early childhood education program at Raudatul Athfal Al-Hidayah in Tembilahan-Riau, totalling 76 children (students). Thus, the entire population in this study became the research sample.

This study uses a descriptive-quantitative analysis design. What this means is that this study seeks to provide an overview of students' kinesthetic intelligence and then looks to explain whether this intelligence has a relationship with students' physical literacy. The data collection instrument in this study was an observation questionnaire. To gain kinaesthetic intelligence, the panel used an instrument that had been developed by Annisa (2019) from Yogyakarta State University. This is done by considering the suitability between this study and his research. In addition, this is also done by considering the validity of the kinesthetic intelligence instrument

that has been validated by experts so that it is possible to use it directly. The instrument used to measure the physical literacy ability of children (students) is to use an instrument that is adapted from the results of the development carried out by Permana & Habibie (2020). This is also carried out with the same considerations as the instrument for measuring kinesthetic intelligence.

Furthermore, the data obtained in this study were quantified and categorized into three groups, namely: high, medium, and low categories. This process is carried out based on the score obtained by each child (student). After that, data processing was continued by conducting correlation analysis, namely to see the relationship (correlation) between kinaesthetic intelligence and children's physical literacy abilities. Correlation analysis was carried out using SPSS 25 software to produce more accurate data. Data analysis ends by describing in the form of a systematic discussion.

■ **RESULT AND DISCUSSIONS**

Kinesthetic Intelligence and Physical Literacy Ability of Raudatul Athfal (RA) Al-Hidayah Children in Tembilahan-Riau

Based on the results of the tests/measurements carried out using the instruments that have been prepared then quantification is carried out on each research variable. This is done to perform classification or category of ability in each variable. The results of the categorization of each variable can be seen in Table 1 below.

Table 1. Kinaesthetic intelligence and physical literacy ability of raudatul athfal (RA) al hidayah children in Tembilahan-Riau

Aspect	Score	Number of students	Percentage (%)	Category
Kinaesthetic Intelligence	76-100	24	31,58	Very Good
	51-75	28	36,84	Good
	25-50	18	23,68	Moderate
	0-25	6	7,90	Low
	Total	76	100	

Physical Literacy	76-100	23	30,26	Very Good
	51-75	25	32,90	Good
	25-50	19	25,00	Moderate
	0-25	9	11,84	Low
	Total	76	100	

Based on Table 1, it can be seen that in general, children's kinesthetic intelligence is dominated by abilities with the "good" category as many as 28 children or around 36.84%. Next are children with the "high" category as many as 24 people or around 31.58%. For the "medium" category as many as 18 people or about 23.68%, and the rest, as many as 6 people or around 7.90%. As for physical literacy ability, it is dominated by children with the ability in the "good" category as many as 25 people or around 32.90%. Next is the ability with the category of "very good" as many as 23 people or about 30.26%. For the "medium" category as many as 19 people or around 11.84%, and the remaining 9 people or around 11.84% in the "low" category.

Comparison of the level of kinaesthetic intelligence and physical literacy abilities of students can be seen in Figure 1 below:

As mentioned above (Table 1) that in general, children's kinesthetic intelligence is dominated by abilities with the "good" category as many as 36.84%, the "high" category as many as 24 people or around 31.58%, the "medium" category as many as 23.68%, and the rest, which is 7.90% in the "low" category. This shows that in general the intelligence of children in Raudatul Athfal Al-Hidayah in Tembilahan is good. With such a level of kinesthetic intelligence, the process of developing children's intelligence at school is relatively easier. However, this situation should make teachers and parents more challenged to

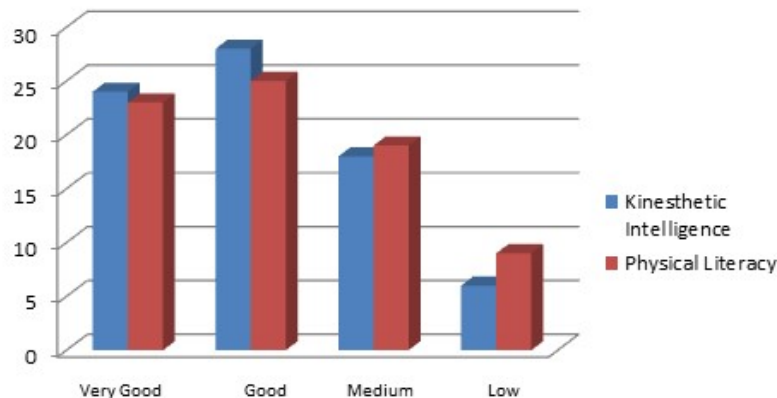


Figure 1. Comparison of the level of kinaesthetic intelligence and physical literacy ability

carry out further development. Considering that early childhood still needs more systematic assistance to continue to develop each of their potentials.

As for physical literacy ability, it is dominated by children with the ability in the "good" category as much as 32.90%, the "very good" category as much as 30.26%, the "moderate" category as

much as 11.84%, and the remaining 11.84% in the category “low”. This shows that the physical literacy abilities of students at Raudatul Athfal Al-Hidayah in Tembilihan are varied, dominated by the “good” and “very good” categories. Therefore, the process of developing physical literacy skills must continue to be carried out so that these abilities can continue to develop. Developing physical literacy skills is very necessary for their future success.

Referring to the data above (Table 1), in general, it can be understood that the kinesthetic intelligence and physical literacy abilities of children at Raudatul Athfal Al-Hidayah in Tembilihan are relatively good. However, it is still necessary to carry out coaching and mentoring so that the potential that has been possessed by the child can be further optimized. This is as stated by Masni (2018) that the educational process is one of the important ways (urgent) to develop the potential of students. Thus the development of the potential of children in Raudatul Athfal Al-Hidayah in Tembilihan is a necessity. According to Damanik (2019), one of the efforts to develop the potential of students, in general, can be done by coaching through counseling guidance. Therefore, it is better if schools at any level of education (including early childhood education) need special teachers in counseling guidance. This is not only to ensure that the development of children’s potential goes well but also to reduce children’s learning barriers.

In addition to counseling guidance, efforts to foster and develop the potential of students can be done through varied learning. Varied learning can be done by varying learning resources, learning media, learning strategies, and learning models. This is as stated by Yuna Mumpuni (2020) and (Cairney, 2018), that the use of certain learning models (STAD) can be used as an alternative in developing the potential of students. Bahar (2013) and Andersson, at al.,

(2022), also mentions that integrated learning, namely learning that involves students starting from planning, exploring, and brainstorming from students so that they are encouraged to dare to work in groups and learn from the results of their own experiences can be used as an alternative in developing the potential of students.

Efforts to develop the potential of students can be done through learning that is oriented to the diversity of all potentials (multiple intelligences) of students. This is as stated by Sierra (2020) and Ma’arif & Sulistyanik (2019), that the development of the potential of students in the learning process can be done through learning based on multiple intelligences and simulation. This situation is based on the concept of thinking that learning is directed at developing students’ potential in three main (compound) domains, namely: affective, cognitive, and psychomotor. These three aspects must be done together holistically. Thus, learning that is oriented towards the potential of multiple intelligences can be used as an alternative in developing the potential of students systematically.

Kinaesthetic Intelligence Correlation and Physical Literacy Ability

Based on the data that has been obtained, further analysis is carried out with the help of SPSS software. The analysis in question is bivariate product-moment correlation analysis. The results of the analysis are shown in Table 2 below:

Based on the value of sig. (2-tailed) between X (Kinesthetic Intelligence) and physical literacy ability, it is found that the value is 0.000 which means <0.05 . This data proves that there is a significant correlation between kinesthetic intelligence and children’s physical literacy abilities. Therefore, it also shows that kinesthetic intelligence has a significant effect on children’s physical literacy abilities. The correlation data also

Table 2 Correlations

		Kinesthetic Intelligence	Physical Literacy
Kinesthetic Intelligence	Pearson Correlation	1	.791 **
	Sig. (2-tailed)		.000
	N	76	76
Physical Literacy	Pearson Correlation	.791 **	1
	Sig. (2-tailed)	.000	
	N	76	76

** . Correlation is significant at the 0.01 level (2-tailed).

shows that the calculated R-value (Pearson correlation), it is known that the R_{count} is $0.791 > R_{\text{table}} 0.227$, which means that there is a significant correlation between kinesthetic intelligence and physical literacy ability. In addition, if viewed based on the SPSS analysis with an asterisk (*), it is seen that both variables have two asterisks (**), which means that there is a significant correlation.

Based on the data in Table 2, it is known that there is a significant correlation between kinesthetic intelligence and children's physical literacy abilities. Or in other words, it can be stated that kinesthetic intelligence has a significant effect on children's physical literacy abilities. Therefore, the two variables strongly influence each other. If the kinesthetic intelligence is good, the child's physical literacy will also be good, and vice versa. The situation provides information that the two variables are interrelated and determines each other. Therefore, the development process of both can also be carried out together in a learning process carried out by the teacher.

Referring to the focus in research, namely kinesthetic intelligence, and physical literacy, where the two variables are closely related to human physical potential. Therefore, the

development of both potentials must also pay attention to the physical potential of students in general. Thus, potential development in the aspects of these two variables should also be linked to physical development, for example through sports activities. This is as stated by Orlando (2016) that through sports, students will experience an increase in abilities and skills. In addition, through sports, especially in the field of sports education, they will understand every aspect that affects their development (talents) so that later they can be useful in the learning process itself.

In addition to the several strategies above, namely the development of the potential of students which can technically be carried out by the teacher, an appropriate management process is also needed so that the process of optimizing the development of the potential of students is more optimal. The right management of the potential development of students can encourage teachers to be more active and creative in carrying out the development of every potential possessed by students. In research, Putri (2020), suggests that one alternative management that can be done to develop the potential of students is through the concept of total quality management.

According to him, the student development management process that must be carried out includes planning, student admission mechanisms, selection process, and orientation activities for new students, division of classrooms, coaching and development, monitoring, and evaluation. For this reason, the school management needs to pay attention to the implementation of management in schools to support teachers in carrying out the potential development of students.

■ CONCLUSIONS

Based on the data that has been obtained followed by the discussion as described above, at the end of the study it can be concluded that the kinesthetic intelligence profile of children in Raudatul Athfal Al-Hidayah in Tembilahan is dominated by children (students) with “good” abilities as many as 36.84%, 31, 58% “high” category, 23.68% “medium” category, and 7.90% “low” category. As for the physical literacy ability, it is dominated by children with the ability in the “good” category as much as 32.90%, the ability in the “very good” category as much as 30.26%, the “moderate” category as much as 11.84%, and the remaining 11.84% categorized as “low”. Based on the results of the correlation test, it can also be concluded that there is a significant correlation between kinesthetic intelligence and children’s physical literacy abilities. Therefore, it also shows that kinesthetic intelligence has a significant effect on children’s physical literacy abilities.

The research has been carried out optimally and professionally in accordance with scientific principles. Therefore it can be justified scientifically. The limitations or shortcomings of this study are that the sample used is still relatively small, namely only one school (Raudatul Athfal Al-Hidayah in Tembilahan-Riau, totalling 76 children (students). From the point of view of the method, this research is only quantitative and

descriptive. Therefore, in the future, similar research needs to combine quantitative and qualitative approaches (mixed method) so that similar research is more perfect. Referring to the results of this study, teachers in early childhood education need to develop various learning models that allow for the development of kinaesthetic intelligence more optimally.

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