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Increased Attention Through Kinetic Life Aith A Level Of Concentration On Physical Education Learning: A Study In Elementary School Students

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Abstract

This research examines the effect of the learning model using life kinetics on increasing learning attention as seen from the concentration level of students in one of the elementary schools in Kab. Bandung. The research method used in this research is an experimental method adapted to the research objectives of wanting to know the truth of hypotheses regarding causal relationships with a Quasi-Experimental Design research design. The analysis technique in this study uses multiple classification analyses of variance, using two ways (two-way ANOVA). Two-way analysis of variance to analyze the effect of the two independent variables, namely learning models using life kinetics and conventional learning models (not using life kinetics) with attribute variables of concentration levels (high and low). Through two-way analysis of variance and statistical data analysis techniques of IBM SPSS Version 25 software, a significant increase in attendance was found in student study groups using the life kinetic learning model.

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INTRODUCTION

The COVID-19 pandemic is a time of concern for education in all parts of the world. Most countries worldwide have had to close their schools and colleges in Indonesia. The Indonesian government, through its policy of replacing learning at school with interactive learning at home online, procedure was made to cut off the eyes of the spread of the coronavirus. Students are faced with the situation of learning online at home; online learning is expected to be able to replace face-to-face teaching during the pandemic; one of the efforts made to make interactive learning through online classrooms using applications such as Zoom or google

meet. However, the Indonesian Child Protection Commission (KPAI) released a survey in April 2020 that 77.6% of teachers made online learning preparations in the form of assignments. This differs from government programs related to meaningful learning that students must get, such as face-to-face learning at school. Plus, the ability of parents to provide internet networks and ownership of mobile phones and laptops that are feasible to support children in participating in interactive online learning still needs to be improved. These parental limitations affect the presence of students in direct education using the classroom meet application, as is the case with students who have complete facilities; they can follow learning according to the schedule set by the school.

The limitations of parental roles and assignment patterns given by schools when studying at home directly impact the domain of the cognitive function, one of which is student attention. Attention is a person's ability to focus on a stimulus and ignore another inspiration, often associated with concentration. At the same time, concentration is the mental ability to focus and maintain attention to the information needed about the values of knowledge and skills in a particular field. Both attention and second concentration are necessary for learning activities such as physical education. Decreased attention and concentration skills are the effects of learning saturation and lack of parental supervision in children using gadgets during online learning. As we know, attention allows individuals (learners) to select relevant information at a given point (Ling, 2012; Iskandar & Ramadan, 2019); this is because attention refers to the systems involved in the selection and prioritization of information processing, and it is closely related to perception and memory and thus is central to almost everything we do (Kirk & Gallagher, 1979). The symptoms of students finding it difficult to maintain attention during learning will be seen from often failing to focus on small things, or making careless mistakes (not careful) in doing motion tasks or other activities, then often showing behaviors such as not listening when spoken to directly, not following directions and failing to complete school work, often avoiding, not liking to do tasks that require effort for a long time, Often removing or damaging objects needed to carry out tasks and activities, attention is easily distracted due to environmental influences and often forgets. There are several high possibilities for decreased student attention and concentration due to 2 years of the online learning pandemic, including students infected with the COVID-19 virus. People infected with the virus "experience muscle weakness, depression, and difficulty sleeping. Other complaints, such as aphasia, seizures, and stroke, can also be found. One of the other manifestations that can be found in brain fog, namely malaise, attention and concentration problems, disorientation, and difficulty finding words." (Vidya and Budi, 2022).

The learning concentration of elementary school students can also be influenced by gadgets that accompany students during online learning. This is in line with research conducted by Putri (2019), "that the use of gadgets during

online class hours can interfere with student learning concentration so that it can affect student learning behavior. Most students often open the internet and communicate for less useful things that can interfere with the learning process". Then Pawicara (in Ashabul, 2021) said, "The impact of online learning can also cause boredom in learning, this is known through indicators from aspects of emotional fatigue, physical fatigue, cognitive fatigue, and loss of motivation." Furthermore, Bambang (2020) added, "this is experienced due to limited teacher supervision in online learning, so that students use mobile phones more to interact in cyberspace or social media."

Physical education subjects are also influenced by student absorption's ability to achieve successful motion learning. A study was conducted by Christian Haas and M. Scholz in (Lutz, 2017) of 20 out of 42 students with an age range of 9-10 years. They were given three weeks of kinetic life training with 11 sessions lasting between 15 and 45 minutes each. The effect of such training on students' cognitive performance increased by 44.74%, almost three times that of the control group (15.28%). The kinetic life group achieved results that were well above average, which was also very significant. Kinetic life can stimulate the brain by requiring students to perform movements spontaneously with certain concepts. In Indonesia itself, there are several studies related to kinetic life that are integrated into learning that have a significant influence on increasing the attention of children aged ten elementary schools (Azbar Lubis & Mario Pratama, 2020; Ramadan, 2022)) because kinetic life in improves cognitive function especially in aspects of concentration and intelligence (Komarudin, 2018).

Life Kinetics is a visual perception exercise created by Horst Lutz; life Kinetics is an exercise that combines physical activity, cognition challenges, and visual perception in one systematic pattern of motion (Bhere, Erickson, &; Ambrose, 2013; Amato et al., 2012; Abeele & Bock, 2001; Komarudin, 2018). The movement pattern in kinetic life training is very varied to challenge brain cells, especially the inner brain called the Hippocampus, whose primary function is learning and storage, and long-term memory processing. Life kinetic exercise), aims to stimulate the brain system to increase cognition, senses, and mental power through pleasurable methods combined with unusual coordination of motion (Saputra, 2016). In addition, the goal of kinetic life is also to increase connection points called synapses. Synapses can continue to develop throughout life with constant exercise.

The workings of the brain still need to be fully understood, but different brain areas inevitably have different functions. Movement in kinetic life training provides several training areas (Lutz, 2017), including; Visual Perception, Increased interaction of eye muscles with light refraction media, and visual cortex in the brain; this involves continuous eye movements, aiming and fixing targets, peripheral vision, estimating distance and speed, which are good basic skills so that the visual system can work optimally. A well-functioning visual system has a much more

significant influence on good cognitive performance. Working memory is part of short-term memory and is responsible for storing as much information as possible in parallel. This is a prerequisite for quickly changing the variety of information used to make decisions as quickly as possible based on the required information. Attention is a group of cognitive skills that significantly affect the effectiveness of attention in retrieving information and storing it in working memory. Seriousness and neglect intervene in our attention naturally as humans; kinetic life increases the level of attention and resistance to distractions.

The basis of kinetic life training is always in the form of movement. Motionless exercises, such as completing purely cognitive tasks, are not life-kinetic exercises (Lutz, 2017). There are four essential complexes of life-kinetic training applied in school learning that is highly specialized and precisely defined in combination with perception and cognition, including; Basic Movement; the base of movement is approximately 100 simple movements, such as walking, jumping, or circling the arms. This can also be done in unusual positions. Motion tasks that students can try on their own through trial and error. The simpler the basic movements, the more complex the additional tasks in the direction of perception or cognition. The second essential complex is called alternation of motion and means alternating between two different movements. In the case of more complex basic exercises, it is often enough to try alternating between the two movements. Chain/Combination of Movements, There is a third essential complex chain of movements; there are at least two movements at the beginning. However, it is required to perform two or more movements simultaneously or swift movements one after the other. This combination of movements becomes a challenge because the unfamiliarity factor influences it. The flow of motion, ini, is a chain of particular movements. Again by combining two or more movements, but at least one movement done regularly in the same way, discipline is critical at this stage. This flow of movement is intended to continue the movement without temporary changes.

The importance of the application of kinetic life as a means of improving cognitive function in physical education can affect skills because the cognitive application can measure and test the role of cognitive involvement in a psychomotor process (Smiley, 2011), besides that kinetic life can increase the strength of connections between brains and activate choirs dinasinya (Demirakca et al., 2016)

METHODS

The experimental method in this study is the proper method to find solutions to research problems (Ramadan & Juniarti, 2020). In this study, researchers wanted to know the influence of *kinetic life* learning models and conventional learning to increase student attention based on concentration levels (high and low). The subjects of this study were grade 4 elementary school students in one of the schools in Bandung district, Indonesia, with an age range of 10-11 years, with as many as 60 students.

The sample was selected through random cluster sampling to determine the experimental and control groups, and each group amounted to 30 students. The experimental group was given a learning model using kinetic life, while the control group used a conventional learning model.

In this study, several independent variables require measurement, such as variables to determine concentration levels (high and low) using *the Concentration Grid Test* (Harris et al., 1984); this test instrument has a validity value of 0.76 and reliability of 0.79 (komarudin, 2021). Then, a Stroop test is used to measure the increase in attention (University of Utah, 2020). Table 3.1

Table 1 Three Stages of the *Stroop Test*

Set	Instructions	Conflicting	Information
A	Reading words	Not	
B	Say a word	Not	
C	Speak a color	Yes	Say color to words

The experimental design in this study used a 2x2 factorial design, which means expanding the number of relationships that can be examined in experimental studies (Fraenkel et al., 2011).

Table. 2 Desain Faktorial 2x2

Concentration \ Learning Model	*Life Kinetik* (A1)	Conventional (A2)
Tall (B1)	A1B1	A2B1
Low (B2)	A1B2	A2B2

After the concentration test was given to 30 experimental group students, divided into two groups with details of 15 students entering the experimental group using life kinetics with high concentration levels and 15 students joining the kinetic life group with low concentration levels, the same thing happened to conventional groups of 15 students, each in groups with high and low concentration levels. The data type used is parametric data to analyze research data using IBM SPSS software version 25.

FINDINGS AND DISCUSSION

Research data is obtained through measurement and analysis through a statistical

approach. The data obtained from measurements from the initial and final tests (test A= Stroop I, test B=Stroop II, test C=Stroop III) for The interference measure is calculated by subtracting the average time taken to complete the first two subtasks from the time taken to complete the third subtask. (Valentijn et al., 2005)

Interferensi = Stroop III – [(Stroop I + Stroop II) / 2]

Table 3 Description of Attentional Test Difference Data

Group	Concentration	**n**	**Mean**	**St. Dev**
Experiments	Tall	15	10,83	1,07
	Low	15	8,70	0,99
Control	Tall	15	3,84	1,31
	Low	15	3,57	1,16

From the description of the difference data (table 3.3) between the attentional test results of each group, it can be seen that the average difference in each group with a high concentration level is different from the group with a low concentration level. This is a difference in influence caused by the level of student concentration or the interaction between the learning model and the level of concentration on increasing student attention. Then the researchers presented the normality test result data using *Kolmogorov-Smirnov* and *Saphiro-wilk* (table 3.4) below:

Table 4 Normality Test calculation results

Group	Concentration Level	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Life Kinetik	Overall	.112	30	.200*	.968	30	.475
Concentration	Overall	.093	30	.200*	.965	30	.403
Life Kinetik	Tall	.129	15	.200*	.939	15	.364
	Low	.177	15	.200*	.884	15	.055
Concentration	Tall	.120	15	.200*	.956	15	.624
	Low	.209	15	.076	.906	15	.116

*The analysis is based on probability values (Sig values) compared to degrees of freedom (α = 0.05)

Table 5 Homogeneity Test Calculation Results

Group		Levene Statistic	df1	df2	Sig.
Life Kinetik Overall	Based on Mean	.186	1	58	.668
	Based on Median	.185	1	58	.668
	Based on the Median and with adjusted df	.185	1	57.996	.668

	Based on trimmed mean	.209	1	58	.649
Concentration Overall	Based on Mean	.556	1	58	.459
	Based on Median	.424	1	58	.518
	Based on the Median and with adjusted df	.424	1	57.949	.518
	Based on trimmed mean	.547	1	58	.462
Life Kinetik (Tall)	Based on Mean	1.502	1	28	.231
	Based on Median	1.502	1	28	.231
	Based on the Median and with adjusted df	1.502	1	25.467	.232
	Based on trimmed mean	1.525	1	28	.227
Life Kinetik (low)	Based on Mean	.027	1	28	.870
	Based on Median	.027	1	28	.870
	Based on the Median and with adjusted df	.027	1	27.823	.870
	Based on trimmed mean	.037	1	28	.849
Concentration (Tall)	Based on Mean	.064	1	28	.802
	Based on Median	.057	1	28	.813
	Based on the Median and with adjusted df	.057	1	26.664	.813
	Based on trimmed mean	.066	1	28	.800
Concentration (low)	Based on Mean	.509	1	28	.481
	Based on Median	.417	1	28	.524
	Based on the Median and with adjusted df	.417	1	27.974	.524
	Based on trimmed mean	.513	1	28	.480

*The analysis is based on probability values (Sig values) compared to degrees of freedom (α = 0.05)

For testing data, both normality and homogeneity tests showed typically distributed and homogeneous data, with a degree of freedom of 0.05. It was found that for the normality test using Kolmogorov-Smirnov from each group were as follows:

1. *Kinetic Life* Group (Overall): Sig. 0.200 > 0.05 (normal distribution)
2. Conventional Group (Overall): Sig. 0.200 > 0.05 (normal distribution)
3. *Kinetic Life* Group (High): Sig. 0.200 > 0.05 (normal distribution)
4. *Kinetic Life* Group (Low): Sig. 0.200 > 0.05 (normal distribution)
5. Conventional Group (High): Sig. 0.200 > 0.05 (normal distribution)
6. Conventional Group (Low): Sig. 0.076 > 0.05 (normal distribution)

Table 6 Explanation of the Two-Way ANOVA Hypothesis Test
Test of Between-Subject Effects

No	Hypothesis	F_{Count}	F_{table}	Sig.	Alpha
1	Combined (Model)	144.770	2.76	0.00	0.05
2	Learning Model Effects	408.240	4.00	0.00	0.05
3	Effects of Concentration Levels	13.947	4.66	0.00	0.05
4	Interaction	12.121	4.66	0.01	0.05

The results of the analysis are presented in Table 3. 6 shows all values of the Sig coefficient. For each group < 0.05; thus, it can be concluded that: First, there is a difference in student learning attention between learning models (*kinetic* and conventional Life Models) with overall concentration levels (high and low). Second, There is a difference in student learning attention between groups of students who are given *kinetic* and conventional Life model learning. Third, there are differences in student learning attention between students with high and low concentration levels. Fourth, there is an interaction between the learning model and the level of concentration possessed by students.

Table 7 Multiple Comparisons

Dependent Variable: Athens

	(I) Concentration Groups	(J) Concentration Groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	*Kinetic life* (High)	*Life Kinetic* (Low)	2.1293*	.28994	.000	1.3735	2.8851
		Conventional (High)	6.9893*	.28994	.000	6.2335	7.7451
		Conventional (Low)	7.0640*	.28994	.000	6.3082	7.8198
	Life Kinetic (Low)	*Kinetic life* (High)	-2.1293*	.28994	.000	-2.8851	-1.3735
		Conventional (High)	4.8600*	.28994	.000	4.1042	5.6158
		Conventional (Low)	4.9347*	.28994	.000	4.1789	5.6905
	Conventional (High)	*Kinetic life* (High)	-6.9893*	.28994	.000	-7.7451	-6.2335
		Life Kinetic (Low)	-4.8600*	.28994	.000	-5.6158	-4.1042
		Conventional (Low)	.0747	.28994	.994	-.6811	.8305
	Conventional (Low)	*Kinetic life* (High)	-7.0640*	.28994	.000	-7.8198	-6.3082
		Life Kinetic (Low)	-4.9347*	.28994	.000	-5.6905	-4.1789
		Conventional (High)	-.0747	.28994	.994	-.8305	.6811

Bonferroni	*Kinetic life* (High)	*Life Kinetic* (Low)	2.1293*	.28994	.000	1.3510	2.9076
		Conventional (High)	6.9893*	.28994	.000	6.2110	7.7676
		Conventional (Low)	7.0640*	.28994	.000	6.2857	7.8423
	Life Kinetic (Low)	*Kinetic life* (High)	-2.1293*	.28994	.000	-2.9076	-1.3510
		Conventional (High)	4.8600*	.28994	.000	4.0817	5.6383
		Conventional (Low)	4.9347*	.28994	.000	4.1564	5.7130
	Conventional (High)	*Kinetic life* (High)	-6.9893*	.28994	.000	-7.7676	-6.2110
		Life Kinetic (Low)	-4.8600*	.28994	.000	-5.6383	-4.0817
		Conventional (Low)	.0747	.28994	1.000	-.7036	.8530
	Conventional (Low)	*Kinetic life* (High)	-7.0640*	.28994	.000	-7.8423	-6.2857
		Life Kinetic (Low)	-4.9347*	.28994	.000	-5.7130	-4.1564
		Conventional (High)	-.0747	.28994	1.000	-.8530	.7036
Based on observed means. The error term is Mean Square(Error) = 1.261.							
*. The mean difference is significant at the 0,05 level.							

CONCLUSION

The first hypothesis about the difference between the effectiveness of the Life Kinetic learning model and the conventional model is shown in Table 4.9 (Test of Beetwen-Subject Effects), which shows that =144,770 is more significant than =2.76. That is, the decision that stated there was no difference between the $F_{hitung} F_{tabel} H_O$kinetic life learning model and the conventional learning model was successfully rejected. This concludes that learning using kinetic life is significantly better, with an average increase of 9.77, compared to conventional learning models, with an average increase of 3.70 to increase student learning attention.

The results of the two-factor variance analysis of the interaction between the learning model and the concentration level are seen in Table 3. 6 (test of between-subject effects), showing = 12.121 greater than = 4.66. The decision that there was no interaction between the learning model and the concentration level was successfully rejected. Thus, there is an interaction between the learning model and the level of student concentration on increasing student learning attention.$F_{hitung} F_{tabel} H_O$

The results of the calculation of the Tukey test on the difference between the effectiveness of the kinetic life learning model

and the conventional model for the group of students who have high concentration as shown in table 3.7 (Multiple Comparisons). The decision that there was no difference between the $H_O$kinetic Life Model and the conventional model in the students with a high concentration level group was rejected (Sig. 0.00 < 0.05). This means that learning using the Life kinetic model (average increase of 10.83) was significantly better for the group of students with high cognitive ability than the conventional model (average increase of 3.84) in increasing student attention.

Based on the results of the first hypothesis testing, there is a significant difference in influence between the kinetic life learning model and the conventional learning model on increasing student attention. This difference occurs because, in theory, the learning model approach using kinetic life provides an excellent opportunity to increase student attention. Kinetic life can increase intelligence, attention, and concentration, provide stimulus to the development of the brain and nervous system, and optimize the learning process. (Duda, 2015; Demirakca et al., 2016; Komarudin & Mulayana, 2017; Komarudin Awwaludin, 2019; Tejada et al., 2017).

Increased attention affects optimal concentration. The higher the student's attentional ability, the ability to concentrate on learning can optimize learning activities at school. Excellent attention and concentration abilities are expected to provide student learning outcomes by achieving the expected learning objectives. Based on this explanation which refers to the results of the first hypothesis test, it can also be concluded that learning using the kinetic life model in the high-concentration group has a different impact than the sample group that has a low concentration level, meaning that the sample of the life kinetic group with low concentration is not more significant than the life kinetic group with a high degree of concentration.

The second hypothesis testing proves that there is an interaction between the learning model (kinetic life learning model with conventional learning models) with the level of concentration (high concentration and low concentration) to increase student attention. This proves that the Life Kinetic learning model is very influential on students' high and low concentration levels, but the Life Kinetic learning model. The greater the effect on high-concentration samples, the more the high-concentration group can focus attention faster than the low-concentration group.

Based on statistical analysis to answer the third hypothesis question, it was found that there was a significant difference in the influence between the life kinetic learning model and the conventional learning model (not using life kinetic) on increasing attention in students who had high concentration. This also happens in testing the fourth hypothesis with the conclusion of statistical test results that there is a significant influence between the Life kinetic learning model and with conventional learning model to increase attention in students with low concentration levels. The kinetic life learning model is more influential than

conventional learning models, with high and low student concentration levels.

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