



Efforts to Increase the Cognitive and Physical Abilities of Kindergarten Students

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ABSTRACT

Physical education in general is part of education. Through physical education is hoped that individual development is not only beneficial for improving psychomotor abilities, but also for cognitive and affective development, so that physical education contributes significantly to the development of all children. One form of formal education is through physical education at kindergarten. Which is part of overall education, aiming to develop aspects of physical fitness, movement skills, critical thinking skills, social skills, reasoning, emotional stability, moral action, aspects of a healthy lifestyle, and the introduction of a clean environment. The purpose of this study was to improve the cognitive and physical abilities of kindergarten students through rotating ring games at PKK Wates Bumiratu Nuban Kindergarten, Central Lampung and to improve children's learning outcomes, teachers must be skilled in teaching and also master the subject matter. The learning process requires good teaching skills because physical education learning needs movement skills and an approach model in its implementation. This type of research is classroom action research with three cycles and each cycle has different activities. The sample used in this study was a group of 32 TK PKK Wates Bumiratu Nuban Group B. Data collection in each cycle used an instrument for assessing the cognitive and physical abilities of kindergarten children. Data analysis technique using tabulation and proportion. The results of this study indicate that there is an increase in each cycle, namely: the first cycle of 25%, the second cycle of 31.25%, and the third cycle of 43.75%. Based on the analysis and discussion of the research results, it can be concluded as follows: Learning by using rotating ring games can improve the cognitive and physical abilities of the children of Group B PKK Wates Bumiratu Nuban Lampung. Learning with rotating ring games is very effective as a model of an educational approach to learning and playing for children's cognitive and physical abilities.

Keywords: *Cognitive; Physical Ability; Kindergarten Students.*

INTRODUCTION

Physical education in general is part of education. Physical education aims to help individuals achieve their optimum potential (Hawi & Samaha, 2017). This means that physical education focuses on the educational process through physical activities that utilize motion or motor mechanisms to stimulate and develop the potential of children both physically and spiritually as a whole to achieve learning goals (RezaeiZadeh et al., 2017). The goal in question is to develop the individual perfectly, both organically, neuromuscular intellectually and emotionally, as well as attitudes that will be useful in everyday life. Due to the characteristics of this stage, in which the individual is forced to meet their needs related to cleaning and feeding in the company of others, many studies focus their analysis on the university population. This means that students are no longer under parental supervision and must share with others and carry out activities that require independence (Chen et al., 2017). Children prioritize social relationships with peer groups so the family is the party that can influence children's behaviour (Cuberos et al., 2018).

While analysing the importance of motivational climate in sports in the acquisition of healthy and the development of different psychosocial factors associated with cognitive and social well-being (Pieron & Ruiz-Juan, 2013). Families should train, familiarize, and motivate children at home so that physical activity becomes commonplace (González-García et al., 2018). To realize these educational goals, the government establishes facilities to support the educational process, both formally and non-formally, according to the capabilities of the region itself (Kesselring & Müller, 2011). One form of formal education is through physical education at kindergarten. Which is part of overall education, aiming to develop aspects of physical fitness, movement skills, critical thinking skills, social skills, reasoning, emotional stability, moral action, aspects of a healthy lifestyle, and the introduction of a clean environment (Costa et al., 2015). One of the principles in developing learning programs in kindergarten is being responsive to developments in science, technology, and the arts (Corbin, 2021). The learning program is developed based on the awareness that science, technology and art develop dynamically, and therefore the spirit and content of the learning program encourage students to follow and make appropriate use of the development of science, technology, and the arts.

One of the critical thinking skills of children can be developed through educational game tools because at the stage of kindergarten age children understand, know, and can name numbers from several objects or pictures (Erickson et al., 2015). The number and variety of play equipment have developed according to the developmental needs of

children. Easy and fast games for children aged 3-6 years are thinking games, namely games of moving, tossing and throwing objects with the concept of introducing slow and fast, high and low, and big and small (Saputra & Ekawati, 2017).

Young children love to move, and for young children motion is life, so from an early age the concept of the taxonomy of motion, namely the concepts of space, time and relationships, is taught through games (Iwandana et al., 2018). Play is an essential demand and needs for kindergarten children (Librianty et al., 2021). Through play, children will be able to satisfy the demands and developmental needs of the physical, cognitive, creative, language, emotional, social and value dimensions and attitude to life (Sumantri et al., 2021). Playing activities children can coordinate gross muscles, various ways and techniques can be used in this activity such as crawling, crawling, walking, running, jumping, jumping, kicking, throwing and so on. Furthermore, many researchers have suggested the practical benefits of physical activity such as cognitive, increased well-being, self-esteem, motivation to live a healthy life, and decreased stress or anxiety. From the results of observations made at the PKK Wates Kindergarten, Bumiratu Nuban District, Central Lampung Regency, there are still many shortcomings in playing tools for the development of children's cognitive abilities and physical abilities. In addition to the lack of playing tools, it can also be seen that in KBM the teacher still applies conventional learning.

METHOD

This research is a follow-up study using guidelines, namely Classroom Action Research (CAR) or also known as Classroom Action Research (CAR). Classroom action research is action research carried out to improve the quality of classroom learning practices. The focus of classroom action research is on children or on the teaching and learning process that occurs in the classroom. Classroom action research is research conducted by teachers in their classrooms by designing, implementing, and reflecting on collaborative and participatory actions to improve their performance as teachers so that children's learning outcomes can increase. Classroom action research has the following characteristics:

- a. The problem starts with the teacher.
- b. The goal is to improve learning.
- c. The main method is self-reflection while still following the research principles.
- d. The focus of research is on the form of learning activities.
- e. The teacher acts as a teacher and researcher.

While the main purpose of classroom action research (CAR) is to improve and improve learning outcomes obtained from continuous practice and is useful for developing the abilities and skills of teachers in dealing with actual learning problems in their classrooms or their schools. In this study, the authors plan research up to three cycles and each cycle has a different action. In practice, each research process is a follow-up to the previous research cycle. This action research is carried out through a round or spiral in which each cycle consists of plans, actions, observations and reflections. As illustrated below:

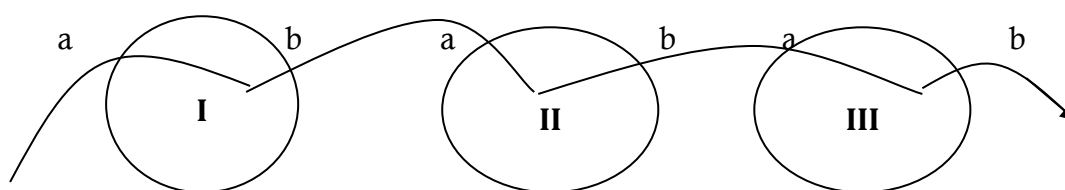


Figure 1.
Classroom Action Research Cycle

- a. Plan: planning what actions to take to improve, improve or change the desired behaviour and attitude.
- b. Action: carry out what is done by the researcher as an effort to improve, improve or change the desired.
- c. Observation: observing the results carried out
- d. Reflection: the researcher examines, sees and considers the results of various criteria.

In this study, the authors carried out research for up to three cycles (12 meetings) then between each cycle the researcher planned different action activities in each cycle, but each cycle was interrelated, each research process was a follow-up action from the previous research cycle.

Cycle I

- a. The first meeting is an initial test to find out how much the child's cognitive and physical abilities are.
- b. The next meeting is the provision of learning to play the spinning ring game as much as 4 x meetings with various variations of material: how to carry 1 ball, how to toss 1 ball, shot 1 ball into the ring, catch 1 ball, accuracy in choosing the number of balls, accuracy in determining the type of ball the accuracy of pointing the colour of the ball, and many race games enter the ball into the ring.

- c. At the end of the lesson, a final test of the first cycle was carried out, the aim was to find out the extent to which the cognitive and physical abilities of children were improved after being given learning to play ring games.

Cycle II

- a. The next second cycle is the provision of learning to play a more competitive spinning ring game in 4 meetings with various material variations: how to carry 2 balls (different colours and sizes), how to toss 2 balls, shoot 2 balls into the ring, catch 2 balls, the accuracy of choosing the number of balls, the accuracy of determining the type of ball, the accuracy of pointing the colour of the ball, and the race game putting the ball into the ring a lot.
- b. At the end of the lesson, a final test of the second cycle was carried out, the aim was to find out the extent to which the cognitive and physical abilities of children were improved after being given learning to play ring games.

Cycle III

- a. The next third cycle is the provision of more competitive and varied learning to play the spinning ring game, that is, each ball has a different size, different colour and has different numbers ranging from 1 to 10, taught as many as 4 x meetings with various material variations: how to bring a lot of balls (different colours and sizes), how to toss a lot of balls, shoot a lot of balls into the ring, catch a lot of balls, the accuracy of choosing the number of balls, the accuracy of determining the type of ball, the accuracy of pointing the colour of the ball, and the race game putting a lot of balls into the ring.
- b. At the end of the lesson, a final test of the third cycle was carried out, the aim was to find out the extent to which the cognitive and physical abilities of children were improved after being given learning to play ring games.

In this study, the instrument used was the Assessment of Cognitive and Physical Ability. After the data is collected from the actions in each cycle, then the data is analyzed through tabulation, percentage and normative. To see the quality of the results of the action in each cycle :

$$P = \frac{f}{N} \times 100\%$$

Information:

Q: Percentage of success

f: Number of moves performed correctly.

N: The number of students who participated in the passing ball lesson.

RESULTS AND DISCUSSION

Results

Table 1.
Test Validity Results

Number	r Count	r Table	Information
1	0.569	0.444	Valid
2	0.558	0.444	Valid
3	0.627	0.444	Valid
4	0.492	0.444	Valid
5	0.566	0.444	Valid
6	0.502	0.444	Valid
7	0.458	0.444	Valid
8	0.601	0.444	Valid
9	0.616	0.444	Valid
10	0.445	0.444	Valid
11	0.463	0.444	Valid
12	0.505	0.444	Valid

Table 2.
Reliability Results

		N	%
Cases	Valid	32	100.0
	Excluded	0	.0
	Total	32	100.0

Table 3.
Reliability Statistics

Cronbach'sAlpha	N of Items
.819	56

Table 4.
Descriptive Statistics

	N		Mean	Std. Deviation	Minimum	Maximum
	Valid	Missing				
Responden	24	0	12.50	7.071	1	24
K1	24	0	2.83	.761	1	4
K2	24	0	2.38	.770	1	4
K3	24	0	2.88	.797	1	4
K4	24	0	3.29	.550	2	4
K5	24	0	3.04	.690	1	4
K6	24	0	2.63	.770	1	4
F1	24	0	3.21	.415	3	4
F2	24	0	2.96	.624	1	4
F3	24	0	3.21	.509	2	4
F4	24	0	3.29	.464	3	4
F5	24	0	3.17	.565	2	4
F6	24	0	3.13	.537	2	4

In classroom action research before the first cycle starts, the first steps are to carry out an initial test or take an initial score (before being given treatment), using an instrument for assessing the cognitive and physical abilities of kindergarten children. The results of this initial test are very useful for determining the actions in the first cycle and whether the actions can improve learning outcomes, it can be seen in the achievement of the class average value or vice versa from the results of the assessment in each cycle. In the scoring system, the author assigns a weighted value of 1 – 5, where the criteria for scoring are if the child can perform 5 indicators gets a score of 5, if the child can perform 4 indicators or less 1 gets a score of 4 if the child can perform 3 indicators or less 2 gets a score of 3, if the child can do 2 indicators or less 3 gets a score of 2, and if the child is only able to do 1 indicator or less 4 gets a score of 1.

After the assessment, the child is said to meet the learning completeness criteria if the child scores above 65 out of 12 assessment criteria in each cycle. Then in this study, the value of learning outcomes is converted into quality which has the following scale: 0 – 25.49 = Less once; 25.50 – 45.49 = Less; 45.50 – 65.49 = Medium; 65.50 – 85.49 = Good; and 85.50 – 100 = Very good. Furthermore, in classroom action research whether action can improve learning outcomes about children's cognitive and physical abilities can be seen in the achievement of class average scores and learning completeness or research results in each cycle. The recapitulation of the reflection of the number of children who scored 1 – 5 in each learning cycle of children's cognitive and physical abilities through rotating ring games is in the following table.

Table 5.
 Recapitulation of Reflections on the number of children who got a score of 1 – 5
 in each cycle of Cognitive and Physical Ability

STAGE	CYCLE I					CYCLE II					CYCLE III				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
K1	-	-	4	28	-	2	-	-	30	-	-	-	-	16	16
K2	-	1	20	11	-	-	-	9	22	1	-	-	1	26	5
K3	-	3	20	9	-	-	-	13	19	-	-	-	2	29	1
K4	-	7	17	8	-	-	-	15	17	-	-	-	3	29	-
K5	-	17	7	8	-	-	3	13	16	-	-	1	8	23	-
K6	2	23	5	2	-	-	11	16	5	-	-	2	19	11	-
F1	7	18	7	-	-	-	13	17	2	-	-	1	24	7	-
F2	20	5	7	-	-	-	14	17	1	-	-	1	25	6	-
F3	8	14	9	1	-	-	8	21	3	-	-	-	19	13	-
F4	2	17	11	2	-	-	6	20	6	-	-	-	17	15	-
F5	1	16	8	7	-	-	1	16	15	-	-	-	8	21	3
F6	1	11	9	11	-	-	-	13	18	1	-	-	3	23	6

Information:

Cognitive Component

- K1: The child performs the task of showing each of the 2 kinds of piles of balls the same number, which is not the same, more and less.
- K2: Children do the task of calling a sequence of numbers from a pile of small balls numbered 1 – 10.
- K3: The child points to 5 kinds of piles of small balls, according to their number.
- K4: Children number by pointing to objects regarding the concept of numbers 1 – 10.
- K5: Children group sports equipment into 4 piles according to the characteristics of colour, shape and size.
- K6: Children arrange sports equipment according to (1) big-small, (2) long-short, and (3) high-low.

Physical Compound

- F1: Children run back and forth and move 5 balls into a circle on a 6 m track.
- F2: The child carries a large ball, one jumps to the box, then jumps and then runs to return the ball to the ring.
- F3: The child throws the ball ten times into the ring
- F4: The child catches the ball with two hands ten times from the teacher's throw.
- F5: Children imitate the movement of moving 10 balls demonstrated by the teacher, 5 times by carrying 2 balls once and putting them into the ring according to size.
- F6: Children do the task of drawing from 10 examples of ball images in 5 minutes.

The following are the results of the analysis of classroom action research on cognitive and physical abilities in Group B children of PKK Wates Kindergarten.

Table 6.
 Description of CAR Results for Cognitive and Physical Ability Learning

Number	CYCLE	π	Score Percentage		Total %	Score Percentage		Total %
			>RK	<RK		>KB	<KB	
1	Early Finding	34.38	28.13	71.87	100	0	100	100
2	One	54.47	37.50	62.50	100	25	75	100
3	Two	66.84	53.13	46.87	100	31.25	68.75	100
4	Three	43.75	100	0	100	100	0	100

Based on table 6 above, the results of the initial findings on the cognitive and physical abilities of children show an average of 34.38 points, while those who get scores above the class average are 28.13% and those who get scores below the class average are 71.87%. Judging from the value obtained from learning completeness who scored above learning completeness as many as 0 children or 0% and who got scores below learning

completeness as many as 32 children or 100%, these findings are the initial abilities of Group B children of PKK Wates Kindergarten, District Bumiratu Nuban, Central Lampung Regency for the 2017 academic year. After conducting a review in the first round or the first cycle, which was given learning material on cognitive and physical abilities through a spinning ring game, then a test was carried out using cognitive and physical instruments with the following results:

Table 7.

Recapitulation of Learning Outcomes Analysis of Cognitive and Physical Ability Cycle I

Number	Result	Total	Percentage (%)
1	Average	54.47	37.5
2	Completeness	8 students	25

Indicators of improvement can be seen through the formula: $P = \frac{f}{n} \times 100 \%$

Percentage of complete learning:

$$P = \frac{8}{32} \times 100 \%$$

$$P = 25 \%$$

After taking the action in the second round/cycle, cognitive and physical ability materials were given through a rotating ring game, then a test was carried out using cognitive and physical instruments with the following results:

Table 8.

Recapitulation of Learning Outcomes Analysis of Cognitive and Physical Ability Cycle II

Number	Result	Total	Percentage (%)
1	Average	66.84	53.13
2	Completeness	10	31.25

Indicators of improvement can be seen through the formula:

$$P = \frac{10}{32} \times 100 \%$$

$$P = 31.25 \%$$

After taking the action in the third round/cycle, cognitive and physical ability materials were given through a rotating ring game, then a test was conducted using cognitive and physical instruments with the following results:

Table 9.

Recapitulation of Learning Outcomes Analysis of Cognitive and Physical Ability Cycle III

Number	Result	Total	Percentage (%)
1	Average	43.75	100
2	Completeness	14	43.75

Indicators of improvement can be seen through the formula:

$$P = \frac{14}{32} \times 100 \%$$

$$P = 43.75 \%$$

Table 10.
Learning Mastery Results Cognitive and Physical Ability of Children Increased Significantly in the Second and Third Cycles

Number	Action	Result (%)	Information
1	First	25.00	Succeed 8 students
2	Second	31.25	Succeed 10 students
3	Third	43.75	Succeed 14 students

From the various tables above, it is known that in each cycle there is an increase from the initial test in the first cycle, which succeeded 8 children from 32 children to 10 children from 24 children in the second cycle, then in the third cycle the last 14 children succeeded in achieving complete learning outcomes. Complete learning is when the child has reached an average of 6.5, it is said to be complete.

Discussion

The actions given in the first cycle to the third cycle are for children to learn while playing with game 1 scenario patterns, namely singing together, carrying small balls, big balls, and certain movements accompanied by the song title 'big ball'; the second game is to throw the ball into the ring while singing along with the title song 'small ball' by bringing a small ball, a big ball and certain movements; the 3rd game is from a pile/collection of balls, the child takes 1 and puts the ball into the ring 10 times (free direction); the 4th game is from a pile / collection of balls, the child takes 1 and puts the ball into the ring 10 times; the 5th game is the child chooses a small pile or a large pile and puts all the balls into the ring according to the colors in the ball and ring; the 6th game is the child chooses a few piles or a large pile and puts all the balls into the ring according to the number listed on the ball and ring; the 7th game is the child chooses a big ball or a small ball and puts the ball into the ring according to its size; the 8th game is the child chooses an odd ball or an even ball and puts all the balls into the ring according to the number listed on the ball; the 9th game is at the speed of selecting 2 long sticks and inserting dry; and the 10th game is to choose 1 short stick and 1 long stick then put it in the ring.

Based on the attached data, the percentage of children's ability in Group B of PKK Wates Kindergarten in carrying out cognitive and physical learning through a rotating

ring in the first stage or the first cycle of playing games 1 to 10 games together guided by researchers has not shown the desired results. Because children still feel new things in learning while playing compared to the learning he has received so far from their teacher. To complete the learning outcomes of children's cognitive and physical abilities, in the second and third cycles, variations of play are carried out, starting from the number of repetitions, the distance from the pile of balls to the ring, the formation of children and song accompaniment according to the age of the child. For this game to attract children's enjoyment and not be easily forgotten, learning is carried out 3 times per week in each cycle.

Then from the 32 subjects of the follow-up study, each indicator contained cognitive and physical abilities, such as: knowing the concept of a lot and a little; the number of objects one to ten; recognising the concept of numbers; recognize number symbols; classify objects based on colour, shape and size; sorting objects by size from the smallest to the largest or vice versa; perform movements of flexibility, balance and agility; perform the movement of jumping, jumping and running in a coordinated manner; throwing something purposefully; catch something precisely; imitating the movement of moving an object to another place; and draw all kinds of objects. Not all children can do or master it, in the first cycle, it was obtained with a class average of 54.5 points, while those who scored above the class average were 37.5% and those who got below the class average were 62.5%. When viewed from the acquisition of learning completeness scores only 8 children or 25% and those who got below learning completeness were 24 children or 75%.

After being given the action in the first cycle, the researcher held a reflection with the partner teacher or PKK Wates Kindergarten teacher. This reflection aims to find out the shortcomings or advantages that exist in the first cycle and will be corrected for implementation in the second and third cycles. In the second or second cycle, treatment with variations of ten types of games is given, starting from the number of repetitions, divergent ball colours, the distance from the pile of balls to the ring, divergent child formations and various kinds of marching rhythmic accompaniment according to the age of the child. The results can be seen as showing little of the desired results because the child has begun to adapt to cognitive and physical learning through a revised rotating ring compared to previous learning. Although there are still children who have not achieved mastery learning (Nejawati, 2017), this is because children still have difficulty mastering the concept of the game and have never had the experience of

learning cognitive and physical games using a rotating ring, so it takes time to get an improvement.

After being given the second cycle of action or the second round of cognitive and physical learning through a revised rotating ring compared to the results of the first cycle, the results of the second cycle test can be seen from the class average acquisition of 66.84 points and those who got scores above the class average are 53.13% and who got a grade below the class average of 46.87%, when viewed from the acquisition of learning completeness scores who scored above learning completeness had not increased because the 32 children there were 10 children with a percentage of 31.25% who achieved learning mastery, while those who scored below the grade complete learning of 32 children there are 14 children with a percentage of 43.75% who did not succeed or who did not achieve complete learning. In this cycle the child has mastered cognitive and physical games using a rotating ring, however, there are still children who have not yet achieved mastery of learning, this is due to their low mastery and understanding of motion. Researchers made improvements to the children's weaknesses in the component of understanding play, and then the weaknesses in the first and second cycles will be corrected in the third cycle.

In the third cycle, the action was given treatment with variations of ten types of games, ranging from the number of repetitions, diverging ball colours, the distance from the pile of balls to the ring, divergent child formations and various kinds of accompaniment to songs with mars and waltz rhythms selected according to the child's age development. In this cycle, cognitive and physical learning uses a rotating ring, in every game other than a play approach. The learning model is also formulated to be more competitive so that children can show their mobility individually and in groups (Riyanto & Kristiyanto, 2017). Furthermore, after being given a third cycle or round of action by doing exercises individually and in pairs, the result is that the child has begun to master cognitive and physical games using a rotating ring. Compared to the results of the second cycle, the results of the third cycle test improved even more and it can be seen from the acquisition of the average class that achieved learning completeness. After being given action, observed, corrected, given repetition time, and assessed or evaluated from the results of the third cycle there was an increase in the number of children who succeeded as many as 14 people with a percentage of 43.75%. Thus all children can achieve complete learning of cognitive and physical abilities using a rotating ring and the results can be seen in the following table.

Table 11.
 Recapitulation of Reflections Number of Children Who Get Scores 1 - 5
 in Each Cycle of Cognitive and Physical Ability

Cognitive and Physical Abilities	Score	Score	Score	Score	Score
	0 - 25.49	25.50 - 45.49	45.50 - 65.49	65.50 - 85.49	85.50 - 100
First Test	11	21	-	-	-
Cycle Test I	-	10	14	8	-
Cycle Test II	-	-	14	17	1
Cycle Test III	-	-	-	29	3
Quality	VL (Very Less)	L (Less)	A (Average)	G (Good)	VG (Very Good)

CONCLUSIONS

Based on the analysis and discussion of the research results, it can be concluded as follows: Learning by using rotating ring games can improve the cognitive and physical abilities of the children of Group B PKK Wates Bumiratu Nuban Lampung. Learning with rotating ring games is very effective as a model of an educational approach to learning and playing for children's cognitive and physical abilities. Following the results of the discussion of this study, the implication of this research for teachers is to develop the cognitive and physical abilities of their students by using the rotating ring game model. The rotating ring game model is an alternative learning method to develop children's cognitive and physical abilities by utilizing the environment and the teacher's creativity.

REFERENCES

- Chen, E., Brody, G. H., & Miller, G. E. (2017). Childhood close family relationships and health. *American Psychologist*, 72(6), 555–566. <https://doi.org/10.1037/amp0000067>
- Corbin, C. B. (2021). Conceptual physical education: A course for the future. In *Journal of Sport and Health Science* (Vol. 10, Issue 3). <https://doi.org/10.1016/j.jshs.2020.10.004>
- Costa, H. J. T., Abelairas-Gomez, C., Arufe-Giraldez, V., Pazos-Couto, J. M., & Barcala-Furelos, R. (2015). Influence of a physical education plan on psychomotor development profiles of preschool children. *Journal of Human Sport and Exercise*, 10(1), 126–140. <https://doi.org/10.14198/jhse.2015.101.11>
- Cuberos, R. C., Ortega, F. Z., Molero, P. P., Knox, E., Bolados, C. C., Garófano, V. V., & Molina, J. J. M. (2018). Relationship between healthy habits and perceived motivational climate in sport among university students: A structural equation model. *Sustainability (Switzerland)*, 10(4). <https://doi.org/10.3390/su10040938>
- Erickson, K. I., Hillman, C. H., & Kramer, A. F. (2015). Physical activity, brain, and cognition. *Current Opinion in Behavioral Sciences*, 4, 27–32. <https://doi.org/10.1016/j.cobeha.2015.01.005>

- González-García, H., Pelegrín, A., & Carballo, J. L. (2018). Parental educational styles as a predictor of sport success and sports competition level. *Revista Internacional de Medicina y Ciencias de La Actividad Fisica y Del Deporte*, 18(71). <https://doi.org/10.15366/rimcafd2018.71.012>
- Hawi, N. S., & Samaha, M. (2017). The Relations Among Social Media Addiction, Self-Esteem, and Life Satisfaction in University Students. *Social Science Computer Review*, 35(5), 576–586. <https://doi.org/10.1177/0894439316660340>
- Iwandana, D. T., Sugiyanto, & Hidayatullah, M. F. (2018). Traditional Games to Form Children ' s Characters In Dieng Plateau Banjarnegara Central Java Indonesia. *Journal of Education, Health and Sport*, 8(11), 407–415.
- Kesselring, T., & Müller, U. (2011). The concept of egocentrism in the context of Piaget's theory. *New Ideas in Psychology*, 29(3), 427–345. <https://doi.org/10.1016/j.newideapsych.2010.03.008>
- Librianty, H. D., Yufiarti, & Yetti, E. (2021). Teacher involvement in active play and its effect on children's physical literacy. *Journal of Physical Education and Sport*, 21(4), 2236–2242. <https://doi.org/10.7752/jpes.2021.s4298>
- Nejawati, A. (2017). Upaya Meningkatkan Keterampilan Berbicara Siswa Dengan Menerapkan Metode Show and Tell Pada Pembelajaran Bahasa Dan Sastra Indonesia. *Jurnal Ilmiah FKIP*, 3(2), 2461–3961. <https://doi.org/10.1017/CBO9781107415324.004>
- Pieron, M., & Ruiz-Juan, F. (2013). Influence of family environment and peers in physical activity habits of youth people. *Revista Internacional de Medicina y Ciencias de La Actividad Fisica y Del Deporte*, 13(51).
- RezaeiZadeh, M., Hogan, M., O'Reilly, J., Cunningham, J., & Murphy, E. (2017). Core entrepreneurial competencies and their interdependencies: insights from a study of Irish and Iranian entrepreneurs, university students and academics. *International Entrepreneurship and Management Journal*, 13(1), 35–73. <https://doi.org/10.1007/s11365-016-0390-y>
- Riyanto, I. A., & Kristiyanto, A. K. (2017). Pengembangan Model Pembelajaran Keterampilan Motorik Berbasis Permainan Untuk Anak Sekolah Dasar Usia 9-10 Tahun. *TEGAR: Journal of Teaching Physical Education in Elementary School*, 1(1), 94–98. <https://doi.org/10.17509/tegar.v1i1.8679>
- Saputra, N. E., & Ekawati, Y. N. (2017). Permainan Tradisional Meningkatkan Kemampuan Dasar Anak. *Jurnal Psikologi Jambi*, 2(2), 48–53.
- Sumantri, M. S., Hidayat, D. R., & Juriana, J. (2021). The urgency of sports talent instruments: Perspectives of early childhood teachers in Indonesia. *Journal of Physical Education and Sport*, 21(4), 2343–2349. <https://doi.org/10.7752/jpes.2021.s4314>