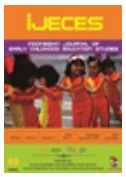
IJECES 8 (1) (2019)

Early Childhood Education Journal of Indonesia



The Circuit Games Modification to Stimulate the Manipulative Movement for Kindergarten student

Pupung Puspa Ardini, Yolan Marjuk, Wenny Hulukati

Article Info

Received January 2019
Accepted Marth 2019
Published June 2019

Keywords:
Games, circuit, Ball, Social Interaction, Manipulative Movement

Abstrak

This research aims to determine (1) the difference in manipulative movement ability between children given circuit and ball games. (2) Differences in the ability of manipulative movements of children given circuits and ball games with high social interaction, (3) Differences in the ability of manipulative movements of children given circuits and ball games with low social interaction, (4) Interactions between games and social interaction with manipulative movement ability. This research was conducted in Gorontalo City. A total sample are 48 children in grade B (age between 5-6 years) and using the Simple Random Sampling technique. The method in this research is the experiment and the design is factorial 2x2 treatment by level. Analysis of the research is ANAVA (Analysis Varians) which was then followed by the Tuckey test. The results of the study: (1) There are differences in the ability of manipulative motion between children given circuit and ball play (2) There are differences in the ability of manipulative movements of children given circuits and ball games with high social interaction, (3) There are differences in the manipulative ability of children who are given circuit games and ball games with low social interaction, (4) There is an interaction between the game and social interaction with manipulative ability.

✉ Corresponding author:

Email:: pupung.p.ardin@ung.ac.id, yolanmarjuk98@gmail.com

INTRODUCTION

Early childhood education is the foundation for further child development. Early childhood education is held before the primary education level. Kindergarten is one form of early childhood education that provides educational programs for children aged four years to six years.

Children learning by playing.The playing period is very valuable for children. Playing is a learning media for children to learn many things directly or indirectly. (Forst, Wortham and Reifel, 2012: 246). The game has two meanings. First, the game is a play activity that is purely seeking pleasure without seeking to win or lose. Second, the game is defined as playing activities that are done to find pleasure and satisfaction. In the game do not seek to win or lose but in the game the child is purely seeking pleasure so that the child is free without the burden of who will be the winner (Adams, 2010: 11).

Circuits are activities in certain areas there are several stations. At each station, athletes are required to do a certain form of exercise, the exercises are usually in the form of physical condition exercises such as strength, speed, agility, endurance and so on. (Rado Pisot, and Jurij Planinsec, 2010).

Children's movement skills can be developed well if the aspects that constitute the child's basic movement are developed from the beginning, namely locomotor motion, non-locomotor motion and manipulative motion. One of the movements that need to be developed is manipulative motion. Samsudin (2008: 8) suggests that manipulative abilities are developed when children are mastering various kinds of objects. Manipulative abilities involve more hands and feet, but other parts of our body are also used.

In Indonesia, the lessons plan of daily activities in kindergarten still allocates a little time for gross motoric activities (Hidayanti, Early Childhood Education Journal, Vol 7, April 2013). Besides, It is important for balancing the brain and focus of attention in the class (Walters, Stellenbosch University,http://core.ac.uk) When children have practiced the body it also practiced the neuron of the brain.

Based on the results of preliminary observations in the city of Gorontalo that the manipulative ability of children is still not all well developed. Children have not all been able to kick and dribble the ball with a distance of 2 meters. In addition, children have not been able to reflect the ball with two hands in turn, and have not been able to throw the ball right at the target.

Children tend to have less control of the ball when kicking the ball so that it is still out on the track. Children cannot concentrate when throwing a ball and are easily distracted. When throwing the ball is not yet on target. The throw does not enter the ring. The activity of reflecting the ball is still little trained in children. The ability of child manipulative movement is influenced by learning activities that continue to be oriented to repeated, free and innovative games. So that the manipulative ability of children will increase. there have been no efforts made for children who have not been able to do manipulative movements. Therefore a game is modified that can develop manipulative movements through circuit games.

1.Gross Motor

According to Musfiro (2008: 113). Gross motor is the ability to move the body using large muscles, most or all of the gross motor limbs are needed so that children can sit, kick, run, up and down stairs and so on, then Sujiono (2007: 13) argues that gross motor movement is abilities that require coordination of most parts of the child's body. Gross motor movement involves the activity of large muscles such as the muscles of the hand, leg muscles and the entire body of the child. This skill needs to involve eye and hand coordination, for example catching, throwing and hitting. The forms of manipulative abilities consist of pushing movements (throwing, hitting, kicking, bouncing, rolling), the movement of receiving (capturing) objects is an important ability that can be taught to children (Kogan in Sumantri, 2005: 99-100). Manipulative abilities are developed when children are mastering various kinds of objects (Samsudin,2008:8). Manipulative abilities involve more hands and feet, but other parts of our body are also used.

The various kinds of efforts made by schools in facilitating functional motoric development include the following: Yusuf et al. (2011: 60)

a. Schools design learning activities that benefit children's development or life, such as typing, sewing or other handicrafts.

b. Schools provide gymnastics or sports activities to children, whose types are adjusted to the age of the child

c. Schools need to recruit (appoint) teachers who have expertise in the field

d. The school provides a means for the continuity of the implementation of learning activities such as the tools needed and the place or field of sports.

In choosing methods to develop children's motor skills, the teacher needs to adjust to the

characteristics of kindergarten children who are always on the move, hard to be quiet, have strong curiosity, enjoy experimenting and testing, able to express themselves creatively, have imagination and enjoy talking (Sujiono, 2005: 14). According to Bredekamp (1992: 51) children aged 5-6 years can carry out the following activities: a. Walking on your heels, tiptoeing, jumping irregularly, and running well. b. Stand on one leg for 5 seconds or more, master the balance, stand on a 4-inch beam (10.16 cm), but have difficulty climbing the beam 5 cm wide without seeing the foot. c. Down the stairs with alternating feet, can estimate footsteps. d. Can jump with adequate tempo rules and be able to play games that require quick reactions e. Begin coordinating his movements when climbing or rolling on a small trampoline (a screen cloth stretched to hold acrobats). f. Shows increased endurance over a longer period, sometimes too excited and loses self-control in group activities. The development of children aged 5-6 years is very rapid. At this age, children begin to develop new skills and improve the skills they already have. This development is also demonstrated by the good balance in climbing the beams/boardwalks, throwing, jumping over various objects, jumping well, jumping over ropes, jumping and going down several stairs, climbing, coordinating swimming movements, and even riding a two-wheeled bicycle.

2.Manipulative Movement

Manipulative movements are described as movements that play games with certain objects, or skills that involve a person's ability to use body parts to manipulate objects. According to Kogan (Sumantri, 2005: 99-100), this skill needs to involve eye and hand coordination, such as catching, throwing, and hitting. Forms of manipulative ability consist of pushing movements (throwing, hitting, kicking, bouncing, rolling), the movement of receiving (capturing) objects is an important ability that can be taught to children.

The basic movements are categorized as manipulation movements are movements that involve giving style to objects and/or the acceptance of the forces of those objects. Manipulative skills involve the act of controlling an object, especially with the hands and feet. Rough motor manipulation involves the relationship of an individual with objects characterized by giving force to objects and the acceptance of force from those objects. Samsudin (2008: 8) suggests that manipulative abilities are developed when the middle child controls the kinds of objects. Manipulative abilities involve more hands and feet, but other parts of our body are also used. This is in accordance with the opinion that manipulative motion is a motion that involves the act of controlling an object, especially the hands and feet, for example, throwing one hand over the shoulder, throwing one hand down and catching and kicking the ball or kicking the ball.

The ability of manipulative motion has two classifications, namely manipulative receptive and propulsive skills. Receptive skills are skills to receive something such as catching, while propulsive skills are characterized by applying force to an object such as throwing, hitting, catching, holding, bouncing, kicking The ability of manipulative movements is related to how children treat Mahendra objects (2000: 22 -25):

a. The Body concept.

In manipulative skills, the body is used as a tool to master an object in various ways. 1) Shape. Changes in body shape occur when capturing an object. The body will curve when the arms or legs move towards the center of the body. 2) Body parts. The most part of the body to manipulate objects in the hand. The hand used to retrieve the object then throws it.

b. The Effort concept

1)Weight. Variations in strength are needed when controlling objects. A challenging task for children is throwing at varying distances, accepting fast-moving balls. 2) Time. Time is very important to know when to throw a ball and give it to another friend. In addition to time, the speed of motion or action becomes a benchmark of how quickly the hand must move. Efficient movements have observable rhythms of action. Loose movement timing usually arises from coordination problems. The child can be helped by starting the movement slowly, which gives him plenty of time to react to what the child sees. 3) Space Flexible use of different parts of the body is needed in throwing motion. Direct and straight direction will produce efficient skills. Likewise when receiving or capturing.

c. The Space Concept.

The path taken by the object affects the distance. Children need to experiment with the moment of release of objects and find out what happened to the object.1) Personal Area The concept of expansion also relates to how close and far an object is from the body. Sometimes children have to reach out to receive the ball. The child pulls the object he is holding close to his body. 2) Levels of Children are expected to be able and ready to accept objects at different levels, low, medium and air and are trained to manipulate objects in these

various levels.

3.Circuit Game

There is the development of games as an exciting and fun activity because the game satisfies the exploratory drive that we all have (Berlyne in Santrock, 2007: 217). This encouragement involves curiosity and a desire for information about something new or unusual. Games are tools where children can find new information safely.

Circuit training is a type of exercise program that integrates where strength training is combined with aerobic exercise, which also combines the benefits of flexibility and physical strength. "Circuit" here means several sports or station groups in the area.It must be completed quickly where each participant must complete one station before going to another station. Circuit training aims to develop and improve physical fitness related to strength, speed and endurance (Stavro, et.all, 2018)

4. Ball Game

The ball is one of the tools/media in developing gross motor skills of Early Childhood. one of the activities that use a ball is to throw and tap. The activity of throwing and catching the ball is very fun by children. Colorful balls can develop children's aesthetic intelligence. Gross motor development through ball games can be done with a pleasant mood without feeling pressured and forced. Throwing is a complicated manipulative skill that uses one or two hands to throw objects away from the body into the air, throws can be done under the hands, above the head, above the arms or on the sides. throwing according to Agus (2000: 48) throwing is a basic pattern of motion intended to release an object away from the throwing body. Throwing styles include top throws, bottom throws, and side throws.

According to Catron and Allen (1999: 292) capture is a manipulative basic motion that involves stopping the momentum of an object and controlling it with both hands. The child will be more able to move according to the position of the body and hands according to the object to be captured so that the child's movement becomes more effective or flexible and does not experience stiffness. To position yourself or adjust to the object to be captured the child makes an elbow bend and pulls the elbow to the side of the body.

5. Social Interaction

Children are naturally born as a social being, social development is the acquisition of the ability to behave in accordance with social demands. Erik Erikson sees social development in children related to their ability to overcome crises or conflicts that occur in each displacement stage so that they are ready to face various problems that will be encountered in future lives (Broadhead, 2010: 57).

Social interaction is dynamic social relationships that involve relationships between individual people, between human groups. Social life that occurs between people and groups becomes the basis of social processes (Gillin in Soekanto, 2013: 55). Social processes are a reciprocal influence between aspects of human life.

METHOD

The research was conducted on children of group B in kindergarten in the city of Gorontalo. The method used to conduct this research is the treatment by level experiment method with 2 X 2 ANAVA design involving several variables grouped as follows:

Social Interaction (B)	**Game (A)**	
	Cirkuit (A1)	**Ball (A2)**
High (B1)	**A1B1**	**A2B1**
Low (B2)	**A1B2**	**A2B2**

a. Dependent Variable (Y) = Manipulative Movement abillity

b. Independent Variables (X) = Circuits and Ball Games

c. Attribute Variable = Social Interaction.

The treatment conducted as much as 8x meetings in the experimental class that is giving circuit games. The ball games was conducted as much as eight times in the control class.

The population in this research were children aged 5-6 years in group B PPIT Al Ishlah Gorontalo. The target population is the group B PPIT Al Ishlah sub-district of Kota Tengah. The reason the researchers took PPIT Al Ishlah is that it is in accordance with the type of experimental research that must be equivalent between the Experiment and Control Groups.

The technique of sampling in this research was conducted using Random Sampling techniques. The steps to determine the sample are from the number of 48 children in group B given circuit playing instruments. The score of the test results from the giving of game instruments is sorted from the highest score to the lowest score

N0.	Time	Activities and Media	Assessment
1	20 minutes 08.00-08.20	Circle time, take a pray and say salam to each other Teacher will tell the mision and task that student must finish in circuit games	Anecdotal record Development checklist
2	45 minutes 08.20- 09.05	Circuit games Rope, ball, basket	Observation checklist Running record Star pin
3	20 minutes 09.05-09.25	Take a brake Have snack	Anecdotal record
4	15 minutes 09.25-09.40	Playing in the play ground	Running record Anecdotal Record
5	15 minutes 09.40- 09.55	Review the activities Tell the next activities for tomorrow Take a pray and say salam	Anecdotal record Running record Development Checklist
6	10.00	Time to go home	

from the order of the existing score set to 33% in the upper group and 33% in the lower group as the sample. Differences between high groups and low groups can be set between 20% and 50%. Determination of high and low groups is carried out in the framework of measurement and grouping.

Based on the number of members of the population, calculations can be made on a sample group of 48 children. Thus the number of sample members used as objects of the experiment in the research were as many as 24 children belonging to the high group, namely children who had high social interaction and 24 children belonging to the low group, namely children who had low social interaction.

The group of children who have high social interaction is divided into 2 subgroups in the learning process, namely the sub-group that follows the learning with circuit games as many as 24 children and sub-groups who follow the learning process by playing throwing the ball as many as 16 children. Likewise for children who have low social interaction divided into 16 sub-groups in the learning process, namely the sub-group that followed the learning with circuit games as many as 16 children and sub-groups who followed the learning process by throwing the ball as many as 16 children.

Station	Activities (Task and Mission)
1	Before student enter the first station, they have to walk trough the rope obstacle and act like a giant In first station the student have a mission to drible the ball with two hands 
2	Before the student enter the second station, they have to run zig zag In second station the student have a mission to kick the ball to the goal 
3	In this station the student have to role away the ball 

4	**In the forth station the student have to drible the ball only with one hand the right and the left hand. Before the student enter the forth station, they have to throw a little ring in to a little tower** 
5	**Before the student enter the fifth station, they have to jump like a rabbit In the fifth station the student have a mission to throw the ball in to a the basket** 
6	**In the last station the student have a mission to throw and catch the ball from the teacher** 

RESULT AND DISCUSSION

The results of the analysis with the t-test for groups of children (A1B1) which have a high social interaction show that circuit games can stimulate manipulative motion compared to ball games. It is proven that the price of t count = 5.63 > t table = 2.037 (a = 0.05). Also the mean value of group A1B1 (□ = 5.63) is higher than group A2B1 (□ = 2.037). That is, this hypothesis is accepted or tested significantly.

The results of the analysis of the t-test for the group of children (A2B2) with low social interaction shows that ball games can stimulate their mammipulative movements more than circuit games (A1B2). It is proven that the price of t count = 2.39 > t table = 2.037 (a = 0.05). Also the values of group A2B2 (□ = 2.39) are higher than group A1B2 (□ = 2.037). that is to say, this hypothesis is received significantly.

1.Differences in Manipulative Movement Ability Between Children Given Game Circuits and Ball

Manipulative motion ability, in children who are given circuit games, have more value than children who are only given ball games, the ball game here only throws and catches, plays ball, and even other activities that do not use the ball, like playing rope jumping, running, walking on board, carrying loads, etc. so that the ability of the manipulative movement of children has not fully increased, this is clearly seen in the circuit game all manipulative activity is carried out

2. Differences in the Manipulative Motion Ability Given by Circuit Games and Ball Games with High Social Interaction

Children who have high social interactions tend to prefer circuit games because in this game children feel more challenged, in this game children pass obstacles before entering the following post. This is because this game has never been done before, so the children are so interested and interested in playing high.

The results of the hypothesis show that the average score of children who play circuits with high social interaction is higher than the scores of children who play football. Circuit "here means several groups or posts in the area and must be completed quickly where each child must complete one post before going to another post. in this game, the child must go through several posts to get to the following post. in each post there are obstacles that must be passed by the child, in a circuit consisting of 6 posts that must be passed by the child, in six posts can develop all manipulative movements

3. Differences in the manipulative ability of children given circuit and ball games with low social interaction

From the results of data analysis, it is suspected that there are differences in manipulative movements of children with low social interaction who play circuit and ball games. The average value of a child who plays the ball at a low social interaction is higher compared to the average value of a circuit game.

Children with low interaction prefer balls or other games, this is because the types of games that are more often played at school. This ball game is not only played in school but is in the wild, so children with low social interaction are more responsive to catching and throwing activities.

4. The interaction between Game and Social Interaction of Manipulative Movement Ability

In this hypothesis, there is an interaction between the game and the ability of manipulative motion, the game can also increase social interaction. it shows that there is an interaction between the types of games played with social interactions that affect children's manipulative movements. There is an influence indicating that between the

game played and social interaction has a positive synergy towards the manipulative movement of the child.

CONCLUSION

Based on the results of data analysis and hypothesis testing, several conclusions can be drawn in this study as follows:

1. there are differences in manipulative movement ability between children given circuits and ball games.
2. in children with high social interaction, the ability of manipulative movement children is higher given the circuit games of the child given the ball games.
3. in children with low social interaction, lower manipulative movement abilities of children who are given circuit games from children given ball games.
4. there is an interaction between the game and social interaction with the manipulative movement ability

based on conclusions, there can be recommended,

1. The teaching process is a component that can determine or influence a child's ability. Therefore the teacher as a learning designer needs to pay attention to the talents and interests of the child so that the entire development of the child can be stimulated properly.
2. For teachers, it is recommended that the learning activities need to use a game that is more interesting and designed more interestingly.
3. Further research that is more comprehensive in terms of both the scope of the theme and the sizeable population. In addition, it is necessary to research several combinations of games that are not only viewed by the manipulative movements of children but extended to other variables related to improving the quality of learning.

REFERENCES

Adams, Ernest,(2010) Fundamental of Games Design, 2nd edition,Berkeley : New Riders.

Agus, Mahendra. (2000). Bola Tangan. Jakarta: DEPDIKBUD

Bimo Walgito. (2003) Psikologi Sosial. Yogyakarta: Andi Offset

Bredekamp, Sue, 1992 Developmentally Appropriate Practice in Early Childhood Programs Serving Children From Birth Through Age 8, National Association for the Education of young Children.

Catron, Carol E. Dan Allen Jan, Early Childhood Curriculum.Merril Prentice Hall: New Jersey

Forst, Joe I,. Wortham, Sue C.dan Reifel, Stuart,2012, Play and Child Development 4th Ed.New Jersey : Pearson

Hidayanti,Maria,2013,Peningkatan Kemampuan Motorik Kasar anak melalui permainan bakiak, Early Childhood Education Journal, Vol 7, April 2013

Pat Boradhead,et,all,2010,Play and Learning in the early years,Sage Publication Inc.:London

Pisot, Rado dan Planinsec Jurij, Motor Structure and Basic Movement competences in Early Child Development,Annales Kinesiologiae, 2010 Volume 1 no.2

Samsudin. (2008) Pembelajaran Motorik Di Taman Kanak-Kanak. Prenada Media Group. Jakarta

Santrock, John. (2007). Perkembangan Anak. Erlangga. Jakarta

Soekanto, Soerjono & Budi Sulistiyowati. (2013.) Sosiologi Suatu Pengantar Raja Grafindo. Jakarta

Stavro,et.all , The effect of an exercise program on communication and behaviour of a child with autism spectrum disorder

Sujiono, Bambang Dkk. (2007) Metode Pengembangan Fisik. Jakarta: UT

Sumantri. (2005.) Model pengembangan keterampilan motorik anak usia dini. Taman kanak-kanak. Jakarta: Depdiknas

Tadkiroatun, Musfiroh. (2008.) Cerdas Melalui Bermain. Jakarta: Grasindo

Walters,Yolinda,2005 The Effects of a perceptual-motor development program on children with develpomental coordination disorder, Stellenbosch University,http://core.ac.uk

Yusuf, Syamsu dkk. 2011. Perkembangan Peserta Didik. PT Rajagrafindo Persada. Jakarta