The Influence of the Perceptual-motor Activities Learning Models to Improve the Concentration and Working Memory of Kindergarten Pupils

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Abstract: This study is aimed to find out the influence of perceptual-motor activities (PMA) learning models towards the improvement of concentration and working memory of kindergarten pupils. Motor perception is motor development which prominently happened during the age of 4 up to 7 years in which a stimulus is needed in order that pupils can enhance their motor perception skills. One of the PMA models is by giving the pupils a set of six movements, namely walking on a balance beam, walking and stopping on the pictures of body parts while mentioning the name, jumping and leaping, walking and running (zigzag, forward-backward, right cross-left cross). The methods employed in this study was pseudo experiment. This experiment design was used to measure the influence variable of PMA model that involved several components in motor perception movements and affected the improvement of kindergarten pupils' concentration and working memory. The research data were gathered using test and measurement. The subject of the study was 30 pupils of Class B in Madukismo Kindergarten. Purposive random sampling was used to take the sample. To analyze the data, descriptive percentage was applied. Based on the results of the research and the elaborated discussion in Chapter IV, several conclusions could be drawn. The influence of PMA learning model was developed involving six core movements, specifically: (1) walking on a balance beam, (2) walking and stopping on the pictures of body parts while mentioning the name, (3) jumping and leaping on a half hula hoop, (4) running, walking, jumping, leaping, and tiptoeing (to the left and right, as well as forward and backward in the middle of 10 hula hoops arranged in parallel on the floor, (5) crawling while dribbling a ball with chest or knees in a tunnel made from hula hoop, (6) throwing balloon/ ball in pairs in the middle of hula hoops. It could be concluded that these activities influenced the improvement of concentration and working memory of kindergarten pupils.

1 INTRODUCTION

Concentration is something that cannot be overlooked during the learning process in or outside the classroom, for instance physical exercise. Without concentration, the learning process will not be optimally conducted. It is common during a lesson that some pupils are not concentrating to their teacher. Some of them disturb their friends, are busy with themselves, joke around, and talk to their friends without actually listening and paying attention to the lesson. The low concentration level is caused by many factors such learning method, media, strategy, type of physical activity, and teacher readiness to conduct the learning process (Towse & Cheshire, 2007). Teachers often prepare the materials and make the media to be used during the early learning stages of the pupils and the previous teachers as the administration staffs (Jurnal Pesona PAUD Vol. 1 No. 1). Early age is a group of pupils aged between 0 to 8 years old. They are unique individuals which have growth and development pattern in their physical, cognitive, socio-emotional, creativity, language and special communication according to the stage that the pupils are going through.

Suyanto (2005) states that early childhood learning is based on the essence of playing. It is characterized by happy feeling, democratic, active, not being forced, and free. The childhood learning uses the principle of learning, playing and singing (Best, 2010). Hence, the learning process is a process of two-way communication between teacher

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and pupils to reach a transformation that will produce a result if people interact by using information, materials, activities and experiences. Learning process is a change of behavior which can be observed and measured. How the brain can achieve, process, and use the information to think is done through the interaction with other people or inner self by integrating with what the pupils have learned. In the learning process, there are some factors influencing those learning activities. Syafitri (2009) differentiates two factors that influence the learning activities, namely internal and external factor. Both factors are influencing the learning process of the pupils that can alter the quality of the learning results. Internal factor, including physiology and psychology, comes from the inner self and can really affect the learning results of any individual. Physiology is some factors related to the physical condition such as physical tone and state of physical/ physiological function. Meanwhile, psychology is related to the state of someone's inner motives that can affect the learning process. Some factors influencing the learning process are pupils' intelligence, motivation, interest, attitude and talent.

2 RESEARCH METHOD

This research was a pseudo experiment, employing observation, test and measurement to figure the influence of PMA learning model towards the improvement of concentration and working memory of kindergarten pupils. The subject of the research was 30 pupils of Class B in Madukismo Kindergarten. The sampling technique used was purpose random sampling. To analyze the research data, descriptive percentage was implemented. The experiment model was in the form of one group pre-test and post-test where the research subjects were given a preliminary test before the treatment.

3 RESULTS AND DISCUSSIONS

3.1 The Results of Play 1 and 2 of the PMA Learning Model's Influence towards the Concentration and Working Memory of Kindergarten Pupils

In this play, the first repetition resulted in 72.50% of pupils' concentration aspect. There was improvement in the second and third repetition with 80.0% and 85.0%. The improvement from the first to the second repetition was 7.50% and from second to third was 5.00%. In addition, the improvement from the first to the third repetition was 12.50%. Therefore, it was concluded that there was improvement on the pupils' concentration.

Meanwhile, the working memory aspect also showed similar results. The first, second and third repetition showed an improvement with the percentage of 70.83%, 77.50% and 83.33% respectively.

With the results of the repetition improvement, it could be concluded that there was an influence of Play 1 and 2 of PMA learning model towards concentration and working memory of kindergarten pupils. These results were in accordance with kindergarten pupils' characteristics and basic competences in terms of the safe, easy, fun and beneficial implementation.

3.2 The results of Play 3 of the PMA Learning Model's Influence towards the Concentration and Working Memory of Kindergarten Pupils

In this play, the first repetition resulted in 72.50% of concentration aspect. It increased 79.17% in the second repetition and 85.00% in the third repetition. The improvement from the first to the second repetition was 6.67% and from the second to the third repetition was 5.83%. It meant that from the first to the third repetition, there was 12.50% improvement. Thus, from the first until the last repetition, there was always an improvement.

Related to working memory aspect, there was an improvement as well. The first repetition resulted in 70.00%, improved to 78.33% in the second repetition, and improved steadily to 85.00% in the third repetition. There was around 8.33% improvement from the first to the second repetition and 6.67% improvement from the second to the third repetition. Accordingly, there was always an improvement between the repetitions.

The results in Play 3 proved that there was an influence of Play 3 used in the PMA learning model towards concentration and working memory of kindergarten pupils which fitted the pupils' characteristics and basic competences.

3.3 The Results of Play 4 of the PMA Learning Model's Influence towards the Concentration and Working Memory of Kindergarten Pupils

Based on the calculation result, Play 4 resulted in 72.50% of concentration on the first repetition. It improved steadily on 77.50% in the second repetition and 84.17% in the third repetition. From the first to the second repetition, there was 5.00% improvement, and from the second to the third repetition the improvement was 6.67%. The improvement from the first until the third repetition was 11.67%. It could be concluded that the pupils' concentration level always increased from one repetition to another.

Meanwhile, the pupils' working memory aspect also improved. The results were 70.83% in the first repetition, increased to 75.83% in the second one, and increased again to 84.17% in the last repetition.

The improvement from the first to the second repetition was 5.00% and from second to third repetition was 8.33%. It was 13.33% improvement from the first to the third repetition. It could be concluded that there was always an improvement from one repetition to another.

3.4 The Results of Play 5 of the PMA Learning Model's Influence towards the Concentration and Working Memory of Kindergarten Pupils

The concentration aspect during Play 5 showed improvement. The first repetition resulted in 26.67% of pupils' concentration. It improved drastically to 63.33% in the second repetition and 83.33% during the third repetition. The improvement from the first to the second repetition was 36.67% and from the second to the third repetition was 20.00%. Totally, there was 6.67% improvement from the first to the third repetition. It was safe to say that there was always an improvement from one repetition to another repetition.

Meanwhile, the improvement also occurred in working memory aspect. From 28.33% in the first repetition, it improved drastically to 62.50% in the second repetition and 85.00% in the last repetition. The improvement from the first to the second repetition was 34.17% and from the second to the third repetition was 22.50%. The improvement from the first until the third repetition was 56.67%. To sum up, there was always an improvement from one repetition to another in Play 5.

The results showed that Play 5 of PMA learning model which was considered from the aspects of concentration, creativity, self-control and thinking logic was suitable with the characteristics and the basic competences of kindergarten pupils. The learning process was also conducted with the thought of safe, easy, fun and beneficial implementation.

3.5 The Results of Play 6 of the PMA Learning Model's Influence towards the Concentration and Working Memory of Kindergarten Pupils

In Play 6, the PMA learning model resulted in 53.33% of concentration aspect in the first repetition. It improved to 74.17% in the second one and 85.00% in the third repetition. The improvement from the first to the second repetition was 20.83% and from the second to the third repetition was 10.83%. Altogether, there was a 31.67% improvement from the first to the third repetition. It could be concluded that there was always improvement from each repetition.

Working memory aspect also showed the similar improvement. The first repetition resulted in 60.83% which improved to 73.33% in the second repetition and 83.33% in the last repetition. The improvement was 12.50% from the first to the second repetition and 10.00% from the second to the third repetition. The combined improvement from the first until the third repetition was 22.50%. The results also showed improvement from one repetition to another.

Play 6 of PMA learning models influence the improvement of pupils' concentration and working memory. Furthermore, the results were in accordance with the characteristics and basic competences of kindergarten pupils, based on the safe, easy, fun and beneficial implementation.

4 CONCLUSIONS

Based on the results of the research, the researchers took a conclusion as follows. The PMA learning model, which was consisted of six core movements namely (1) walking on a balance beam, (2) walking and stopping on the pictures of body parts while mentioning the name, (3) jumping and leaping on a half hula hoop, (4) running, walking, jumping, leaping, and tiptoeing (to the left and right, as well

as forward and backward in the middle of 10 hula hoops arranged in parallel on the floor, (5) crawling while dribbling a ball with chest or knees in a tunnel made from hula hoop, (6) throwing balloon/ball in pairs in the middle of hula hoops, influenced the improvement of concentration and working memory of kindergarten pupils.

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