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Playing Motion Activity Model Development to Improve Early Childhood Creative Thinking

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Creativity is a comprehensive concept involving complex cognitive processes such as perception, sensitivity and flexibility, which are commonly used in our daily lives. The design of this study is adapted from the model of Educational Research and Development, and features expert assessment of five key components, or activities, of the proposed model. Instrument validation was achieved with results showing 3 activities (60%) to be very valid, 2 activities (40%) to be moderately valid and no activities as invalid. Following validation, pre- and post-testing was conducted to evaluate the effectiveness of the model's activities on creative thinking skills in children aged 4-5 years. This study is expected to develop the play motion activities learning model to enhance early childhood creative thinking.

Keywords: *creative thinking, early childhood, playing motion*

INTRODUCTION

In early childhood, learning is a process of interaction between children, parents, or other adults in an environment aimed at achieving developmental tasks. Ineraksi built a factor for the achievement of learning goals focued on this interaction to gain meaningful experiences so that learning can take place smoothly.

Early childhood development is very influential in progressing to the next stage of life and in increase productivity within this next period (Semiawan 2008). Children's abilities must therefore be adequately developed to effectively handle these next stages. Such capabilities include cognitive, language, social, emotional and motion activity skills. Learning in pre-school age children is a particularly important first input and forms the basis for further education in ensuring the success of an individual (Abbas Othman, & Rahman, 2012).

Each child brings all pre-existing knowledge into new experiences. If a learning experience does not provide opportunities for children to create new knowledge, the leaning of such an experience would be boring. Conversely, if it is too foreign a learning experience for the child, then the experience could make the child anxious. Such anxiety has the potential to cause the child to withdraw or refuse to deal with the new experience. The learning experience should therefore contain some elements that are already known as well as those which are new and engaging. In such a situation, the child interested in interacting with new experiences and have the opportunity to manipulate or express.

Early childhood education is capable of maximising all aspects of development and can lead to future optimisation of such critical developmental factors as physical aspects of the motor. These physical educational aspects can thus improve motor skills, creativity and prosocial behavior in young children. Early childhood educators play an essential role in influencing the level of physical activity performed during early childhood (Martyniuk & Tucker, 2014).

Early childhood refers to a period of time determined by a child's age and development in some kind of stimulus. This stimulus should ideally be well-planned, engaging and driven towards growth and development. Some expert opinions on early childhood are mentioned below.

> The latest guidelines from the UK recommends that children of an early age (3-5 years) should participate in at least 180 minutes of physical activity at any intensity (i.e. mild, moderate or strong) every day for health maintenance, including weight, bone and heart health. Early childhood education is a very important period to promote and establish positive behaviours. Understanding the factors that can influence physical activity is very important for effective childhood development (Foweather et al., 2015).

Motor development is considered as an important factor in a child's overall health. Despite the significance of this aspect, a general understanding of the underlying behavioural assessment of motion activity is still lacking. Various hypotheses and concepts have been introduced to explain the behaviour of motion activity. An individual's motor activity skills are highly relevant to his or her motion activities and form basic functional movement skills (Utesch et al., 2016). The holistic development of a child, including this motor skills development as well as general physical health, cognitive growth and emotional and social support, may be the most efficient basis for well-being and academic success (Vazou, Mantis, Luze, and Krogh, 2017). Such development is particularly important for children aged 4-6, which encompasses the period defined as early childhood. This period lays the foundation of personality and is the timeframe in which the child shows the greatest advances in the mental, social and artistic fields (Yazar & Arifoglu, 2012).

In conclusion, the process of early childhood learning is crucial to an individual's development. This period should be appropriately organised to effectively develop a child's behaviours, knowledge, skills and creativity both in the family and in Early Childhood Education before entering primary education.

The process of determining the extent of learning motor skills and movement can be divided into: (1) the ability of the physical condition, specifically relating to the energy aspects of movement; (2) the coordination capacities depending on the central nervous system, which relates to movement control, and (3) conventional use as motor skills continue to interact with each other. The mastering of motor skills in early childhood may function as a prerequisite for the child's physical activity participation and involvement later in life (Loprinzi, Davis, & Fu, 2015).

Learning in early childhood is often referred to as playing. Play can provide an opportunity for children to explore, discover, feel, create and learn in a fun and enjoyable way that allows for full appreciation and understanding. Playing is the best way to develop a child's abilities, as through the process of play, children can organically discover their environment, other people and themselves. Playing affects mental and emotional maturity as well as mental development, and encourages children to feel free in finding his or her own world and to feel happy and engaged in doing so. Through these kinds of games, children learn and grow through developing ideas about their world. Play provides the opportunity to deliver and trial those ideas in a safe and fun atmosphere, which in turn develops problem solving skills and creativity. Playing is a crucial component of a child's life and functions as a main activity in developing imagination and creativity to learn basic motor, social and emotional skills (Oncu & Unluer, 2010).

Creativity is not defined as additional developments, but rather as the whole of the environmental component and spontaneous play potential. Creativity is a fixed aspect of development, and

environmental creative play is a form of learning in early childhood aimed at developing creative thinking.

Creative thinking is a way of generating ideas that can in some way be applied to the world (Anwar, 2012). Creative thinking is therefore the essence of creativity (Chena et al., 2015). Thinking is a cognitive process that forms new mental representations through transformation by a complex interaction of mental procedures, including consideration, abstraction, reasoning, drawing, logical problem solving, concept formation, creativity and intelligence. Three basic ideas about thinking exist within the literature: (1) cognitive thinking occurs internally through thought patterns while decisions are taken through behaviours; (2) thinking is a process that involves multiple manipulations of knowledge in cognitive systems, and (3) thinking is straightforward and results in behaviours that solve problems or otherwise assist with a solution. The elements of creativity as outlined by Fazelian & Azimi (2013) include the ability to create something new, to think of useful ideas and to uniquely perceieve the environment. Teaching creative thinking may involve a variety of methods, though all with the shared goal of inspiring students' creativity and lateral thinking abilities through educational theories, principles and strategies (Lin & Lin, 2012).

Creative thinking generates new solutions to old problems and is a unique process for each individual, especially for children . The child perceives and feels an event in his or her own way and reflects upon events within the inner psychological world with the help of outer elements like sound, colour, motion, lines and ideas. The child's senses are therefore active in creative thinking as he or she sees, hears, feels and perceives the environment. These event and environmental perceptions may depend on the delicacy and developed, or underdeveloped, senses of the child (Yazar & Arifoglu, 2012).

Teaching children creative thinking skills is a crucial component of education. Skilled creative thinking can assist children in solving potential future problems and challenges (Zahra, Yusooff, and Safar, 2013). According to Guilford, divergent thinking is the main component of creativity (Dziedziewicz, Gajda, & Karwowski, 2014). Divergent thinking comprises of a number of elements, including (1) fluency: the ability to come up with many ideas in a short period of time; (2) flexibility: the ability to develop qualitatively different solutions; (3) originality: the ability to produce rare and unusual ideas, and (4) elaboration: the ability to develop ideas (Dziedziewicz et al., 2014). Divergent thinking and imagination are the characteristics of creative people. Creativity can also be described as the unique discovery of an idea, which involves divergent thinking, exploration, imagination, ingenuity, innovation, intuition, invention, novelty and originality (Fazelian & Azimi, 2013).

Children's creativity is involved in various processes and activities. Divergent thinking manifests itself in the ease of producing some of the ideas (fluency), the readiness to change the cognitive

direction and thus increase flexibility and originality of thought, and the sensitivity to interpret and elaborate on problems. Many arguments have also been made in favour of the effectiveness of divergent thinking skills, and claim that imaginative creativity is the ability to change the data provided and to remember a mental image that is new and original.

Creativity is defined Williams (Abdussalam, 2005) as an idea involving several fundamental aspects, including: (a) agility: the ability to generate ideas or questions in large amounts; (b) flexibility: the ability to produce many kinds of thinking and to move easily from the type-specific rationale to others' perspectives and thoughts; (c) originality: the ability to think in new ways or by new expression units, and (d) elaboarasi: the ability to add new details or thoughts or a particular product result.

Creativity is a way of thinking that creates something original to be recognised by other people (Kemple & Nissenberg, 2000). Creative thinking abilities exist within every child and can be stimulated through the use of basic motion activity. If a child's ability to think creatively in understanding the form of motion activities, such as increasing the power of creativity in basic motor skills, creativity can thus be developed and used as a person's ability to think creatively. Activities within the working world of creative thinking may take many forms, such as an educator creating an interesting game for optimal student learning and engagemen. This kind of classroom creativity can subsequently decrease feelings of boredom and monotony. Some movements that promote creativity in early childhood revolve around the manipulation of concrete materials, including colour pairing, using rope, arranging blocks, playing with balls and pairing geometric shapes.

The purpose of this research is to develop models that implement such motor movement activities to enhance creative thinking in early childhood. The Dikembakang model includes 1) creativity that will be used on kindergarten aged learners between 4-5 years; 2) games to pair flops colours; 3) games that include a rope in various ways; 4) games involving a block in various forms; 4) games that pair coloured balls, and 5) games pairing geometric shapes.

METHOD

The development process of this study involved two key factors, namely the research methodology and the technical process development of the learning model motion play activities. This learning model was based in research and aimed to produce motion learning play activities to increase the effectiveness of creative thinking in early childhood. The learning model process uses theories of development in constructing learning model motion play activities.

In the model, the development methodology begins with a needs analysis which is conducted in three (3) ways.: 1) an empirical analysis to identify problems in early childhood learning; 2)

identifying the needs of teachers and early childhood educators, and 3) a theoretical analysis to identify and formulate the problems faced by teachers in implementing the learning process. Through conducting this needs analysis, important characteristics of the needs or problems encountered can be determined and appropriate research methods can be constructed to solve such problems.

The findings from this analysis of needs allow for the detailed construction of a learning model that suits the characteristics of early childhood and that can be effectively implemented by the teacher. Accordingly, the proper method to solve early childhood learning problems is to study the model, research and subsequently develop required additions, and finally to test its effectiveness. This is in accordance with the opinion of Borg and Gall, who suggest that "educational research and development is a process used to develop and validate educational products" (1989, p. 624). A needs analysis was conducted in order to identify and formulate problems faced by early childhood teachers in implementing the learning process. A needs analysis can be described as the characteristics of the needs and problems faced by teachers. Appropriate research methods can then be determined and subsequently implemented to solve the problems.

The research design employed in this study was developed through a synthesis of several tested models from existing research, inlcuding the models of Ploom (2007), Kemp (2004), Hanafin and Pack (1998) and lastly Borg and Gall (1983). From careful analysis of these models, the resultant research design for the current study involves six steps formulated for the development of subject coverage of research: 1) conducting a needs analysis; 2) identifying the desired aspirational model for educators of early childhood education; 3) developing the initial, or hypothetical, model; 4) performing expert testing on this prototype; 5) conducting small-scale testing on the test use model, and 6) conducting a field trial implementation of the model using experimental research. The current research has reached stage 4, which involves expert testing and validation on the proposed model.

The development of research procedures used in this study can be performed more simply, the main steps of which include:

1. Conducting a needs analysis for data collection through the study of literature, observation, discussion and field study. This initial analysis can serve as a basis for developing prototype models of physical play motor activites to increase creative thinking in early childhood, specifically in children between 4-5 years old.
2. Identifying the desired aspirational model for early childhood educators, including the formulation of objectives and research measures. This step also involves research into the development and design of a feasibility test for play model motor movement activities in order to enhance creative thinking in children aged between 4-5 years.

3. Designing the initial product development model for early childhood playing motor movement activities. Evaluation of the mode's required materials, learning resources and instruments will then be conducted by two early childhood learning experts, two experts physical motor professionals and one specialist in instrument evaluation.
4. Validating the initial product design through using test instruments prior to expert evaluation.
5.

Based on the above data collection tools and techniques, the data analysis method used in this study comprises of a number of key elements. Firstly, a prototype development was conducted to process data from the play models motor movement activities, which aim to enhance creative thinking in early childhood. The Iken index was then employed for analytical descrption, the formulation for which is as follows:

$$V = \frac{\Sigma s}{n\,(c\text{-}1)}$$

Information:
S = R - lo
V = Index of experts regarding the validity of the agreement.
r = Score category selection expert.
lo = Lowest score in the scoring category.
n = Number of experts.
c = Number of categories to choose experts (Hendryadi, High, & Economics, 2018).

The criteria outlined in Table 1 below were used in forming the discussion points and conclusions for this study.

Table 1. Instrument validity criteria

value V	*descriptive Term*
> - 0.4	less valid
0.4 to 0.8	moderate
0.8 ->	very valid

RESULTS AND DISCUSSION

Specifically, the development leads to the formulation of product solutions from a needs analysis. Prototype specifications in the early stages of a learning model produce play motion activity planning through the Pembelaaran Model Book of motion activity. This learning model prototype must then be subjected to an evaluation phase, which is is performed on the model's research and development and determines the quality of the model's motion play activities. Formative evaluation techniques are often performed to determine the quality of such learning models, including the use of expert assessments and reviews. This study employed such expert evaluation through various instruments on the CE2IG Learning Model and the manual motion learning model of play activities. The product quality of the CE2IG learning model is determined by several criteria, including validity, practicality and effectiveness (Akker, JV & Bannen, B., Kelly, AE, Nieven. N, 2013).

Based on the theory of motion systematic research development, the learning model product testing play activities are expected to assist early childhood teachers in improving the quality and subsequent effectiveness of the learning process. Further, effective learning impacts teacher management of the classroom learning process. Effective learning occurs when children are actively following the subject matter being taught to them as a result of the chosen learning process employed by their teacher or facilitator (Infallible, 2018).

The results of the needs analysis indicate that teachers in early childhood are largely misunderstood in the planning of learning programs. Further, the model of learning undertaken by teachers is found to focus on only a few areas of development. Finally, the analysis suggests that solutions to these problems involve improved ability in preparing lesson plans and properly implementing and assessing students' learning, particularly in the field of motor development that can be associated with creative thinking.

The learning model development process must meet at least three criteria of validity, practicality and effectiveness. Validity is obtained if the content of the learning model is in conformity with the objectives to be achieved. Practicality is obtained if the learning model can be used easily and appropriately. Lastly, effectiveness is obtained when the learning model delivers results in accordance with the set objectives.

The learning model motion play activities was developed according to the concepts and objectives planned from the previous needs analysis and focused on improved creative thinking skills through game activities of motion. These motion play activities were created and tested by using the experimental design of pre-testing and post-testing at kindergarten institutions. Results from these tests were collated into an analytic discussion focusing on the formulated problem, namely the validity and effectiveness of the learning model. The study investigates how to play the motion

activity games for improved creative thinking in early childhood, the practicality of the model and the development of physical activity as a facilitator of early childhood creativity.

Evaluation of the model was conducted by field experts to ensure the model's validity for use with children aged 4-5 years, or group A. Five key components of the instrument were assessed by the validators, including:

a) Pairing flops colours.
b) Inserting rope in various ways.
c) Using blocks in various forms.
d) Pairing coloured balls.
e) Pairing geometric shapes.

Results of the PNo draft assessment evaluation on the research model and its above components are presented in Table 2 below:

Table 2. Expert assessment and validation of the instrument.

Total Instrument	Component	Category		
		Very valid	Moderate	Invalid
5		3	2	0
Percentage		60.00	40.00	0.00

Table 2 indicates that of the 5 assessed components, 3 were categorised as very valid (60%), 2 were categorised as moderately valid (40%), and none were marked as invalid. These results confirm the overall model as valid for research use. Following this instrument validation, the model and its activities were applied for use with the kindergarten children over a series of 8 meetings. The results of these meetings are illustrated in Table 4:

Table 4. Test results in applying Keterlaksanaan gameplay activity motion learning model to improve creative thinking.

Meeting	Average %	Category
Meeting 1	70.83	Very good
Meeting 2	73.44	Very good
Meeting 3	78.13	Very good
Meeting 4	82.29	Very good
Meeting 5	85.94	Very good
Meeting 6	86.98	Very good
Meeting 7	89.06	Very good
Meeting 8	91.67	Very good

This data reports that the first meeting obtained an average of 70.83%; the second meeting obtained an average of 73.44%; the third obtained an average of 78.13%; the fourth obtained an average of 82.29%; the fifth obtained an average of 85.94%; the sixth obtained an average of 886.98%; the seventh obtained an average of 89.06%, and finally, the eighth meeting obtained an average of 91.67%. All meetings were subsequently categorised as very good.

A normality test for creative thinking was then conducted in small groups of 12 learners. Assessment was conducted on several aspects, including smoothness, dexterity, authenticity and elaboration each of which contained a criteria scale. Smoothness was measured according to a) very smooth, b) smooth, c) substandard, or d) not smooth; dexterity was measured as a) highly dexterous and flexible, b) flexible, c) less flexible, or d) inflexible; authenticity was assessed as a) authentic and original, b) somewhat original, c) somewhat replicated, or d) entirely mimiced, and finally, elaboration was measured as a) very developed, b) developed, c) fairly developed, or d) restricted development. The results of this normality test are depicted in Table 5:

Table 5. Normality test for creative thinking.

One-sample Kolmogorov-Smirnov test				
		Pre-test	*Post-test*	*Residual unstandardised*
N		12	12	12
Normal Parametersa, b	*mean*	10.17	13.83	0E-7
	Std. deviation	2,250	2918	1.28210943
Most Extreme Differences	*Absolute*	.220	.356	.177
	positive	.208	.229	.177
	negative	-.220	-.356	-.115
Kolmogorov-Smirnov Z		.764	1.234	.612
Asymp. Sig. (2-tailed)		.604	.095	.848

Based on the SPSS output as seen in Table 5, the Asymp. Sig. (2-tailed) value of 0.848 is greater than the required 0.05. In accordance with the conditions of the Kolmogrof-Smirnov test for normality, it can therefore be concluded that the data was normally distributed. Thus, the assumption of normality in the regression or requirements are met.

Table 6. Paired samples test table statistics for effectiveness of creative thinking.

No.	Component	***Paired samples statistics***					
				mean	*N*	*Std. deviation*	*Std. error Mean*
1	Creative thinking	*pair 1*	*Pre-test*	10.17	12	2.250	0649
			Post-test	13.83	12	2918	0842

The data in Table 6 above shows the effectiveness of the paired samples statistics testing on creative thinking. The pre-test obtained a mean value of 10.17 and a standard deviation of 2.250, with a standard error mean of 0649. The post-test obtained a mean value of 13.83 and a standard deviation of 2918, with a standard error mean of 0842. These results were used to generate the following research hypotheses regarding the learning model application for creative thinking:

Ho: There is no relationship between pre-test and post-test results in the application of the learning model motion play activities.

H1: There is a relationship between pre-test and post-test results in the application of the learning model motion play activities.

provision If Sig> α, then Ho is accepted

If Sig <α, then Ho is rejected.

Table 7. Correlations of paired sample testing on creative thinking.

NO	Component	***Paired sample correlations***					
					N	*correlation*	*Sig.*
1.	Creative thinking	*pair 1*	*Pre-test*	*and post-test*	12	0822	.000

As seen in Table 7 above, results of the paired sample testing on creative thinking show a value of 0822. As the Sig value 0.000 <α (0:05), then Ho is rejected, indicating that a significant relationship exists between the pre-test and post-test. This suggests that creative thinking with the implementation of the motion play learning activities can be significantly increased.

Table 8. Results of post- and pre-tests to determine the effectiveness of creative thinking.

NO	Component	***Paired sample test***							
			mean	*Std. deviation*	*Std. error Mean*	*95% Confidence Interval of the Difference mean*		*t*	*df*	*Sig. (2-tailed)*
						Lower	*Upper*			
1.	Creative thinking	pair 1 *Pre-test – post-test*	-3667	1,670	.482	-4728	-2606	-760711		.000

Based on the value sig (2-tailed = 0.00) <α = 0.05 presented in Table 8 above, it can be concluded that Ho is rejected as there are significant differences between the pre-test and post-test scores. This shows that creative thinking increased following treatment with the proposed learning model.

CONCLUSIONS

This study aimed to develop of a model of motion movement play activities to enhance creative thinking in early childhood. This model was subjected to expert evaluation basded on 5 key factors, and was found to be a valid instrument for use in the research. These factors, or activities, included 1) pairing flops colours, 2) inserting rope in various ways, 3) using blocks in various forms, 4) pairing coloured balls, and 5) pairing geometric shapes. The model was then implemented in groups of kindergarten children aged 4-5 years over 8 sessions, which all produced very good value averages. Children presented happy and egaged responses during the motion play activities and even reported wanting to continue the activities during break time.

Results of the learning model testing and its effectiveness were gathered from learning process-based lesson plans and classroom management, and earned high averages across the sample groups. Procedural measurements for the modelincluded observer selection, object selection and data analysis. The effectiveness of learning includes the targets or desires of both teachers and learners. The study's empirical evidence for the application of the proposed learning model's plays motion activities showed a significant positive effect on creative thinking in early childhood, thus confirming it as an effective model for achieving such educational goals and improving childhood creativity. This study presents an alternative to current play motor movement activities for early childhood students to better enhance their creative thinking skills.

REFERENCES

Abbas, MY, Othman, M., & Rahman, PZMA (2012). Pre-school Classroom Environment: Significant upon Childrens' Play Behavior? Procedia - Social and Behavioral Sciences, 49, 47-65. https://doi.org/10.1016/j.sbspro.2012.07.005

Abdussalam, A. (2005). Developing Child Creativity. East Jakarta: Student Library.

Akın, A. (2011). Social and The Validity and Reliability of the Turkish Version of the Berkeley expressivity Scale. 00, 27-33. https://doi.org/10.1016/j.sbspro.2011.10.006

Akker, JV & Bannen. B. Kelly. AE, Nieven. N, PT (2013). E. (2013). Educational Design Reseach. Netherlans: 241.7500 PO.BOX Enschede The Netherlands.

Allen. KE & Marotz. LR (2010). Child Development profile: Prenatal up to 12 years. PT Index. Jakarta.

Akyol, S., & Fer, S. (2010). Effects of Social Constructivist Learning Environment design on the 5 th grade learner's learning. Procedia - Social and Behavioral Sciences, 9, 948-953. https://doi.org/10.1016/j.sbspro.2010.12.265

Alsharif, K. (2014). How do Teachers Interpret the Term 'Constructivism' as a Teaching Approach in the Riyadh Primary Schools Context? Procedia - Social and Behavioral Sciences, 141, 1009-1018. https://doi.org/10.1016/j.sbspro.2014.05.170

Anwar, MN (2012). Relationship of Creative Thinking with the Academic Achievements of Secondary School Students. 1 (3), 1-4.

Azlina, W., & S., ZA (2012). A Pilot Study: The Impact of Outdoor Play Spaces on Kindergarten Children. Procedia - Social and Behavioral Sciences, 38 (December 2010), 275-283. https://doi.org/10.1016/j.sbspro.2012.03.349

Bagnato, SJ (2007). Authentic Assessment For Earyl Childhood Intervention. Best Practices. New York, NY10012: The Guilford Press. Adivision of Guilford Publications, Inc. 72 Spring Stree.

Beaty. JJ (2013). Observation of Early Childhood Development. Kencana. Prenadamedia Group. Rawamangun Jakarta. 13220.

Beetlestone. F. (2013). Creative Learning (Learning Strategies For Student Creativity

melesatkan.). Nusa Media. Berung tip. duo

Betzel, RF, & Bassett, DS (2017). NeuroImage Multi-scale brain networks. NeuroImage, 160 (November 2016), 73-83. https://doi.org/10.1016/j.neuroimage.2016.11.006

Brussoni, M., Gibbons, R., Gray, C., Ishikawa, T., Sandseter, EBH, Bienenstock, A., ... Tremblay, MS (2015). What is the relationship between risky outdoor play and health in children? A systematic review. In the International Journal of Environmental Research and Public Health (Vol. 12). https://doi.org/10.3390/ijerph120606423

Campbell, SB, Denham, SA, Howarth, GZ, Jones, SM, Vick, J., Williford, AP, ... Darling-churchill, K. (2016). Journal of Applied Developmental Psychology Commentary on the review of measures of early childhood social and emotional development: conceptualization, critique, and Recommendations. Journal of Applied Developmental Psychology. https://doi.org/10.1016/j.appdev.2016.01.008

Chang, H., Wang, N., Ko, W., Yu, Y., Lin, L., & Tsai, H. (2017). Taiwanese Journal of Obstetrics & Gynecology The effectiveness of clinical problem-based learning models of medico-law jurisprudence education on general knowledge for Obstetrics / Gynecological interns. Taiwanese Journal of Obstetrics & Gynecology, 56 (3), 325-330. https://doi.org/10.1016/j.tjog.2017.04.011

Chena, A., Dong, L., Liu, W., Li, X., Sao, T., & Zhanga, J. (2015). Study on the mechanism of improving creative thinking based on Extenics capability. 55 (Itqm), 119-125. https://doi.org/10.1016/j.procs.2015.07.017

Clancy, ME (2006). Active bodies, active brains: building thinking skills though physical activity. United states: Human Kinettics.

Creswell. J. (2016). Research Design (Approach Method Qualitative, Quantitative and Mixed). Student Library. UH East Celeban III / 548 Yogyakarta.

Darling-Churchill, KE, & Lippman, L. (2016). Early childhood social and emotional development: Advancing the field of measurement. Journal of Applied Developmental Psychology, 45, 1-7. https://doi.org/10.1016/j.appdev.2016.02.002

Devecioglu, S., Sahan, H., Tekin, M., & Yildiz, M. (2012). Development of Innovation Strategies for Sports Education. Procedia - Social and Behavioral Sciences, 46, 445-449. https://doi.org/10.1016/j.sbspro.2012.05.139

Dodonov, YS, & Dodonova, YA (2011). Basic processes of cognitive development: Missing component in Piaget's theory. Procedia - Social and Behavioral Sciences, 30, 1345-1349. https://doi.org/10.1016/j.sbspro.2011.10.260

Don Kauchak, PE (2016). strategy and Learning Model (Teaching Content and Thinking Skills). Jakarta Barat 11610 .: PT Index. Puri Permata Media. North Kembangan.

Dziedziewicz, D., Gajda, A., & Karwowski, M. (2014). Developing children's intercultural competence and creativity. Thinking Skills and Creativity, 13, 32-42. https://doi.org/10.1016/j.tsc.2014.02.006

Fazelian, P., & Azimi, S. (2013). Creativity in Schools. Procedia - Social and Behavioral Sciences, 82 (1989), 719-723. https://doi.org/10.1016/j.sbspro.2013.06.335

Foweather, L. Knowles, Z., Ridgers, ND, Dwyer, MVO, Foulkes, JD, & Stratton, G. (2015). Journal of Science and Medicine in Sport Fundamental movement skills in relation to weekday and weekend physical activity in preschool children. Journal of Science and Medicine in Sport, 18 (6), 691-696. https://doi.org/10.1016/j.jsams.2014.09.014

G. Morrison. (2012). Fundamentals of Early Childhood Education. PT reindexs. Puri Permata Media. North Kembangan, West Jakarta 11610.

Galdi, M., Anna, CD, Pastena, N., & Gomez, F. (2015). Gross-motor skills for potential intelligence descriptive study in a kindergarten. Procedia - Social and Behavioral Sciences, 174, 3797-3804. https://doi.org/10.1016/j.sbspro.2015.01.1115

Giconda, BD (2013). Adapting Didactic Game in Swimming Teaching at an Early Age. Procedia Physics, 76, 146-150. https://doi.org/10.1016/j.sbspro.2013.04.089

Grewal, J., Wernicke, M., & Zhang, J. (2012). Early childhood development when a second-trimester ultrasound dating disagrees with last menstrual period: a prospective cohort study.

Hadi. S. (2016). Statistics. Student Library. UH East Celeban III / 548 Yogyakarta.

Hammond, SI (2014). Children 's early helping in action: Piagetian developmental theory and early prosocial behavior. 5 (July), 1-7. https://doi.org/10.3389/fpsyg.2014.00759

Hendryadi, H., High, S., & Economy, I. (2018). Validity Of Contents: Early Stage Development Of Questionnaire Validity Of Contents: Early Stage Development Questionnaire. (June

2017).

Hergenhahn. BR & Olson. HM (2008). Theories Of leraning. Kencana Prenadamedia Group, Rawamangun, Jakarta.

Hernata. I. (2013). Complete Medical Sciences of Neuroscience. D-Medika. Sampangan. Wonosari. Baturetno. Banguntapan. Yogyakarta.

Hinkley, T., Teychenne, M., Downing, KL, Ball, K., Salmon, J., & Hesketh, KD (2014). Early childhood physical activity, sedentary behaviors and psychosocial well-being: A systematic review. Preventive Medicine, 62, 182-192. https://doi.org/10.1016/j.ypmed.2014.02.007

Hoorn, JV & Nourot, PM, Scales, B., Alward, KR (2007). Play at the center of the Curriculum. Pearson Education, Inc., Upper Saddle River, New Jersey 07458

Hudson, P. (2013). Learning to Teach in the Primary School. Australia: Cambridge University Press 477 Williamstown Road. Port Melbourne, VIC 3207.

Ibn Badr. T. (2015). Designing Innovative Learning Model, Progressive, and contextual: Concepts, Foundations and Curriculum Implementation Padda 2013. (Thematic curriculum integrative). Prenadamedia Group.Jakarta 132 200

Janjai, S. (2012). Improvement of the abilities of the students in an education program to design the lesson plans by using an instruction models based on the theories of constructivism and metacognition. Procedia Engineering, 32, 1163-1168. https://doi.org/10.1016/j.proeng.2012.02.072

Javad, S., Poor, A., & Jusan, MM (2012). Exploring Housing Selection Attributes based on Maslow's Hierarchy of Needs. 42 (July 2010), 311-319. https://doi.org/10.1016/j.sbspro.2012.04.195

Jensen, E., (2008). Enriching the Brain (How to Maximize the Potential of Each Learner). PT index. North Kembangan West Jakarta.

Jensen, E. (2011). Brain-Based Learning. Jakarta: PT index. North Kembangan West Jakarta.

Johndon. L. (2008). Creative teaching and Attractive: How to arouse interest in students through Thought. PT. Index. Jakarta.

Joyce. B. & Weil. M., CE (2016). Model Of Teaching. UH East Celeban III / 548

Yogyakarta.55167: Library Pelaj

Kemple, KM, & Nissenberg, SA (2000). Nurturing Creativity in Early Childhood Education: Families Are Part of It.

Lin, R., & Lin, R. (2012). 2012 International Conference on Computer Supported Education Future A Study of Curriculum Innovation Teaching and Creative Thinking for Picture Book Creation. 2, 30-35. https://doi.org/10.1016/j.ieri.2012.06.047

Loprinzi, PD, Davis, RE, & Fu, Y. (2015). Early the motor skill competence as a mediator of child and adult physical activity Early / Middle Childhood. PMEDR, 2, 833-838. https://doi.org/10.1016/j.pmedr.2015.09.015

Martyniuk, OJM, & Tucker, P. (2014). An exploration of Early Childhood Education students' knowledge and preparation to Facilitate physical activity for preschoolers: a cross-sectional study. 1-10.

Oncu, EC, & Unluer, E. (2010). Preschool children's using of play materials creatively. Procedia - Social and Behavioral Sciences, 2 (2), 4457-4461. https://doi.org/10.1016/j.sbspro.2010.03.711

Semiawan, CR (2008). Teaching and Learning Preschool and Elementary School. Jakarta: PT Index. Puri Permata Media.

Utesch, T., Bardid, F., Huyben, F., Strauss, B., Tietjens, M., Martelaer, K. De ... Lenoir, M. (2016). Using Rasch modeling to Investigate the construct of the motor competence in early childhood. Psychology of Sport and Exercise, 24, 179-187. https://doi.org/10.1016/j.psychsport.2016.03.001

Vazou, S., Mantis, C., Luze, G., & Krogh, JS (2017). Self-perceptions and social - emotional engagement following classroom structured physical activity among preschoolers: A feasibility study. Journal of Sport and Health Science, 6 (2), 241-247. https://doi.org/10.1016/j.jshs.2016.01.006

Yazar, T., & Arifoglu, G. (2012). A research of audio-visual educational aids on the creativity levels of 4-14 year old children as a process in primary education. Procedia - Social and Behavioral Sciences, 51, 301-306. https://doi.org/10.1016/j.sbspro.2012.08.163

Zahra, P., Yusooff, F., & Safar, M. (2013). Effectiveness of Training Creativity on Preschool

Students. Procedia - Social and Behavioral Sciences, 102 (ifee 2012), 643-647. https://doi.org/10.1016/j.sbspro.2013.10.782