



The Effect of Learning Methodology and Personality Type on Cognitive Abilities

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Abstract

This research aims to understand the influence of learning methods and type of personality on children cognitive ability, in group B kindergarten in Serang Banten Province. This study used a method of 2x2 factorials experiment with the design. The treatment is provided to present two methods of learning, they are the method of guided discovery and the method of demonstrations. This research is held in group B kindergarten in Serang Banten, from May until August 2014 with the sample which is taken through a method of multistage random sampling. The sample consisted of kindergarten students in Amalia and Al- Khautsar Kindergarten. The data was analyzed by using descriptive statistics, then the analysis and hypothesis testing requirements were analyzed by two lanes variance (Anova two-way).

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INTRODUCTION

Education in Indonesia has managed to achieve some progresses, especially in providing educational opportunities to the society, including early childhood education. In the Act of national education systems, it is stated that early childhood education is a development efforts aimed at children from birth to the age of six years which are accomplished by providing stimulation of education to help the growth and development of the physical and spiritual aspects so that children have the readiness to enter further education. Early childhood education needs to be done because the main function is to develop all aspects of child development, including the development of cognitive, language, gross motor and fine motor skills, as well as social and emotional quotients. Various studies indicate that there is a very strong relationship between the development experienced by children at an early age with his success in later life. For example, children who live in an environment that is rich with interactions using a good language manner will be used to listening to and pronouncing the words correctly. Therefore, when they enter school, these children already have the basic knowledge for reading (<http://paud.kemdiknas.go.id/>, accessed 20 November 2013).

Cognitive abilities needed by children in order to develop the knowledge of what is seen, heard, tasted, touched or smelled through their senses. So the ability of cognitive functions is fundamental to human life, then appropriate efforts were made to develop it. The establishment of various formal and non formal education is part of the basis for developing a child's cognitive ability.

Seeing the conditions in the field, based on observations in kindergarten in the city of Serang Banten, there are still many children who have low cognitive abilities. The low cognitive ability, as mentioned, can not be separated from the influence of various factors in the learning activities, both internal factors and external factors for the students. Internal factors are expected to influence the cognitive abilities that is personality, while the external factors that also affect them are the learning environment of students, the ability of teachers, facilities and amenities, and the teaching methods used by teachers who are still centered on the teacher (teacher-centered),

So far the learning activities in kindergarten are still using classical activities centered on the teachers. Appropriate learning strategies can stimulate positive interaction between students, so that students are enthusiastic to participate

in playing the activities while learning which in turn can increase students' cognitive abilities. In the learning process, students need to be trained to perform an in-depth study of the problems of learning materials. Students are guided to be able to find their own understanding or construct the concepts of knowledge according to the stages of child development. So there is a need to use appropriate methods which are guided by constructivism and student activity in learning, the method is guided discovery.

Given that cognitive ability is very important for children to take into account the type of personality of students as well as teaching methods, it is necessary to develop an experiment on the Influence of learning methods and personality types on cognitive abilities of children at kindergarten in the city of Serang Banten.

Discussion

Early childhood is a sensitive period where the child begins to receive various efforts throughout the development of children's potential. The critical period is often called sensitive period. Sensitive period is a period in which the maturity of the physical and psychological functions are prepared to respond to the stimulation provided by the environment. This period is a time to lay the groundwork or foundation first in developing children's abilities and skills.

Cognitive ability can prepare individuals to improve their quality of life, this is possible because in developing their cognitive abilities, students are guided to think critically, solve problems, and make decisions that can improve their quality of life to the communities and citizens are educated with science and knowledge.

Robbins defines the following capabilities: Ability Refers to an individual's capacity to perform various tasks in a job. It is a current assessment of what one can do. An individual's overall abilities are Essentially mode up of two sets of factors: intellectual and physical (Robbins, Stephen P. and Timothy A. Judge, 2009: 79). According to Robbins, an ability is the capacity of an individual to perform various tasks in a job. Ability is the latest assessment of what can be done by someone. The overall ability of individuals basically consists of two factors, they are intellectual and physical factors.

Keenan and Evans expressed their opinion that cognition is the study of the thought or mental activity processes by which we acquire and ideal with knowledge (Keenan and Evans, 2009: 157). Cognitive is a study of the thought processes of a mental activity that is related to

knowledge.

Jamaris suggested that cognitive processes occur internally in the brain when a human being is thinking. Cognitive abilities develop gradually and in line with the physical development and the development of nerves inside the central nervous system or brain (Jamaris, Martini, 2010: 211).

Cognitive ability is the ability to know in a deeper sense of the word as understood, understand, appreciate and remember what is known. The cornerstone is a ratio or a cognitive sense, the ability of the ratio lies in the ability to distinguish or classify, expressed quantitatively and qualitatively, and declare relations and reduce the relations (Santrock, John W., 2009: 157).

Cognitive ability is seen as an action or activity to find something in the form of conscious action, intelligent, personal intuition, rote, intellectual skills (skilled intellectual) and understanding. This understanding is the basis of cognitive abilities that will develop into an ability for decision making, rational and comprehensive decision. Dworetzky in the study of theory related to cognitive ability, he suggests that cognitive ability is a mental activity that includes feeling, thinking and problem solving. Of course, in this case it has the same thinking with the mind (John P. Dworetzky, 1988: 71).

Furthermore, Piaget, through his research suggests that the theory of cognitive development: Cognitive structure (namely, our minds) are adaptation which help ensure that our knowledge provides a good fit to the world. Piaget viewed human intelligence as an adaptation which ultimately enhanced our chances of survival (John P. Dworetzky, 1988: 43). The statement means that a person's cognitive structure is the description of the thought process that uses knowledge in the brain and is used to adapt to the world environment. Piaget regard human intelligence as a level to adapt in order to survive.

Meanwhile, Carroll defines cognitive ability as the conscious mental processing of information that enables a more or less successful performance on a defined task. It means that Carroll defines cognitive ability as conscious mental process of information that makes it easy to get the appearance of a more or less specific to the task.

Colquitt stated that Cognitive Abilities capabilities related to the acquisition and application of knowledge in problem solving (Colquitt, Jason A, et al, 2011: 339). It implies that the cognitive abilities are skills related to the application of one's knowledge in solving problems.

Cognitive ability, or the ability to think in children is a cognitive activity in which children

realized that knowledge comes from impressions or experiences gained in the past. In the process of remembering, usually associated with a variety of information or knowledge that has been owned and directly children are not exposed to the object. So the cognitive abilities of the thought processes of the brain, resulting in reasoning, understanding, remembering, classifying, observing, watching, knowledge to solve problems and adapt to its environment.

An individual's mental growth is the most important part in a child's development. Who develop cognitive aspects, will be able to develop the thinking process, responding to the object and its environment as well as reflecting experience. Along with the maturity of the child, there will be a progressive structuring in the children's cognitive processes, where the child's ability to develops thinking process becomes more complex.

During cognitive ability development at school, teachers as educators should be responsible for the cognitive development of learners, because through the development of cognitive thinking function, it can be used to quickly and precisely resolve a situation in solving problems. In detail the importance of teachers to develop cognitive abilities in children are as follows: (a) That the child is able to develop the power of perception based on what he/she saw, heard and felt so that children have a thorough and comprehensive understanding, (b) in order for children to be able to train their minds against all events and incidents that never happened, (c) that the child is able to develop his ideas in order to connect one event with other events, (c) in order for the children to understand various symbols that are scattered in the surrounding world, (d) that the child is able to do reasoning, either occurring spontaneously or through a scientific process and the process of scientific experiments, (d) to be able to solve the problems that the children face so that in the end they will be individuals who are able to help themselves (Sujiono, Yuliani Conscience et al, 2006: 1:22 to 1:23).

Of the above various opinions, it can be concluded that cognitive ability is the appearance of mental activity (brain) to acquire knowledge through children's own experiences by using rules and concepts that have been held which then represented in a wide range of abilities of cognitive development that includes memorize, understand, apply, analyze, assess, and create.

Understanding the method according to the following Cornacchia, Method is a broad term referring to the teaching in the organized and systematized ways used by teachers to achieve

ve purposes or objectives. They are often said to be the "how to" of teaching (Cornacchia, Oloson and Nickerson, 1984: 268). The definition indicates that the method is a way of teaching that is arranged and organized, which is used by teachers to achieve goals or objectives. These methods are often called how to teach.

Gagne stated that learning method is instructional processes which are repeated, and can be applied in a variety of subjects, as well as can be used by more than one teacher (Gagne, N.L., (ed), 1976: 5).

The process is repeated instructional activities which are repeated at intervals measured in many minutes or weeks. Instructional process itself is a patterned behavior of teachers, storytelling, discussion, demonstration and experimentation.

The learning method is a way to achieve the learning outcomes in the specific learning conditions. To that teachers must be able to use different learning methods. Learning methods are classified into three parts, namely (1) the material organizing strategies, (2) delivery of content strategy and (3) management strategies (Reigeluth, 1997: 21-23).

The learning method can be used to define strategies and measures for the achievement of learning objectives. Each of the methods applied will involve the ability of students and teachers, with their ability levels. Therefore, teachers are required to be able to present learning activities that match the child's development, namely in accordance with the uniqueness, characteristics and age of the child.

The learning method is selected appropriately presumed to help students in remembering, and absorb the material with ease. Students can become more active in the learning process. The purpose of learning is to facilitate the achievement of learning goals. Cruickshank explained that in order to create a learning environment that is interesting, fun and right on target for students, teachers need to perform a variety of methods (Donald R. Cruickshank, 2006: 387).

One of the methods that were developed based on the new paradigm is guided discovery learning method (guided discovery). The learning method is able to guide students to find their own knowledge development.

From the various opinions mentioned above, it can be concluded that the method of learning is an attempt to manage the learning environment intentionally in order to develop the attitudes, skills and abilities of individuals and establish themselves in a positive way.

The use of methods guided discovery (guided discovery) and demonstration method in teaching will give different results for the students, this is caused by differences in the way in acquiring knowledge, which in guided discovery, students gain knowledge through self discovery while in the method of demonstration more to acquire knowledge through information. This difference will become clearer when teachers perform measurements in cognitive abilities.

Personality of each individual is different from one another. To know the personality of someone we need to study the structure of his personality. There are several things that affect the formation of a person's personality, such as general knowledge and specialized knowledge. Thus forming some kind of unique personality of each individual, this classification is based on the existing external and internal factors.

Individuals who can not face personal and social problems that arise when he/she was a child to adulthood can cause personality disorders. Therefore, early personality should be set up so well that it did not have a personality disorder on the individual.

Matsumoto and Linda Juang try to define personality as a pattern of behavior and ways of thinking that is typical, which determines a person's adaptation to the environment (Matsumoto, David and Juang, Linda, 2013: 255). In terms of day-to-day is often interpreted as defining characteristics that stand out on the individual that designate how individuals perform or create the impression for other individuals, for example, someone who rarely expresses anger, no matter how much interference they experienced, while some others are high tempered and get angry easily.

Lawrence argued that personality is an important aspect in human life that distinguishes one individual to another (Lawrence A. Pervin and Oliver P. John, 1997: 2).

While Allport in Crow (1995: 126) suggests that personality is the dynamic nature of organizational unity of the individual psychophysics system that determines the ability of its unique adjustment to the environment. It can be understood that every individual has a distinctive personality, which is not identical with others. So there are individual characteristics on the psychological aspects, which can distinguish itself with others. Personality is a complex organization of cognitive influence which direct their behavior and make patterns in a person's life. Personality includes the structures and processes that reflect the traits and experiences. Personality is influen-

ced by past and present.

Personality is a set of properties and the physiological mechanism within the individual who organized and adapted intrapsychic and physically his/her social environment (Randy J. Larsen and David M. Buss, 1997: 4).

While Coon and Mitterer states that personality is a representative of the uniqueness of a person who shows a consistent pattern in the feelings, thoughts, and behaviors (Coon, Dennis and Mitterer, John O, 2011: 4).

While the opinion of Nevid, argued that the personality is settling characteristics and patterns of behavior that make individual uniqueness and consistency of the pattern of behavior (Nevid Jeffery S, 2012: 383).

However, Burger stated, personality is a persistent pattern of behavior and interpersonal processes of an organization of individuals (Burger, Jerry M, 2011: 4).

Based on some of the above definition, it can be concluded that the definition of personality is a unitary organization of individuals who are unique, dynamic, who presented the individual characteristics of thinking, expressing feelings, display behavior, which determines its ability to adapt to the environment.

To understand the personality type Eysenck personality type divides into two main types, namely extrovert and introvert personality type (Eysenck: 164-168). Extrovert personality is often known as extraversion-intraversi. Eysenck argued that the extrovert and introvert personality type is a continuum scale, so that everyone will move on the scale extrovert with an introvert. Both types are not strictly separated but trend towards where people have the personality type. That way, people are categorized into extrovert or introvert personality types when some properties appear leading to the dimension where they can be categorized. The term extrovert or introvert are different by definition, individual differences are extroverted and introverted indicated by the difference indicators including: the behavior of someone who is formed of seven fundamental properties, namely liveliness, sociability (friendliness), control of conscience, expression of feelings and responsibilities ,

From the above description, a personality type in this study is the personality dimension that describes the unity of individual organizations that are unique, dynamic, who presented the individual characteristics in determining its ability to adapt to the environment formed by the seven fundamental properties, namely liveliness, sociability (friendliness), control of conscience,

expression and sense of responsibility.

METHOD

The method used in this research was the experimental method. The research was done with a 2x2 factorial design. The treatments were to present two teaching methods, they are the method of guided discovery and demonstration methods, which then becomes the independent variable. While the variable is the type of personality attributes, variables are divided into two categories namely extrovert and introvert personality type. The study also involved a dependent variable, that is the cognitive ability.

The population in this study were all students of Kindergarten level B (5-6 years) who were in the city of Serang. The sampling method in this study used a multistage stratified random sampling. The sample in this study is children in group B Kindergarten Al-Kawthar District of Serang and children in group B Kindergarten Amalia Walantaka District of Serang.

RESULTS AND DISCUSSION

Data Description

First, based on data collected from respondents as many as 20 children, the data showed groups of children who were given guided discovery learning methods with the following acquisitions: the highest score of 102, the lowest score of 57, an average of 83.3, the median value of 83.7, the mode value of 84.5, and a standard deviation of 11.69.

Second, based on the data collected from respondents as many as 20 children, data group of children treated with the acquisition method of learning demonstrate the highest score of 90, the lowest score of 58, average score of 76.05, the median value of 75.91, the mode value of 75.49, and a standard deviation of 7.28.

Third, based on the data collected from respondents as many as 20 children, the data showed a group of children who have extrovert personality types with the following acquisition: the highest score of 102, the lowest score of 58, averagescore of 84.95, the median value of 84.5, the mode value of 80.9 and 77.75, and a standard deviation of 11.11.

Fourth, based on the data collected from respondents as many as 20 children, the data showed a group of children who have introverted personality types with the folloeing acquisition: the highest score of 90, the lowest score of 57, an average of 76.45, the median value of 77.5, the

mode value of 75.75, and a standard deviation of 8.27.

Fifth, based on the data collected from respondents as many as 10 children, the data obtained by a group of children learning methods that have guided discovery and extrovert personality type with the following acquisition: the highest score of 102, the lowest score of 84, an average score of 93.5, the median value of 94.75, the mode value of 93.5, and standard deviation of 5.89.

Sixth, based on the data collected from respondents as many as 10 children, data showed groups of children who were given guided discovery and learning methods that have introverted personality type with the following acquisition: the highest score of 85, the lowest score of 57, an average score of 74.5, the median value of 76, the mode value of 77.5, and standard deviation of 7.62.

Seventh, based on the data collected from respondents as many as 10 children, the data showed groups of children who were given a demonstration and learning methods that have extrovert personality types with the following acquisition: the highest score of 85, the lowest score 58, the average score of 74.3, the median value of 75, the mode value of 76.19, and standard deviation of 6.96.

Eighth, based on data collected from respondents as many as 10 children, data showed groups of children who were given a demonstration and learning methods that have introverted personality type with the acquisition highest score of 90, the lowest score of 68, an average score of 77.7, the median value of 77, 5, the mode value of 76, and a standard deviation of 6.81.

CONCLUSION

Based on the results of the study, the analysis and discussion that has been described in this study we concluded that: (a) Cognitive ability in the group of children who were given guided discovery learning method is higher than the group of children who were given a demonstration of learning methods. It is based on the calculation of two-lane ANOVA showed that the value of $F(8.99) > F \text{ table}(4.11)$ at significance level $\alpha = 0.05$, then reject H_0 and accept H_1 , (b) the cognitive ability to target children who have extrovert personality type is higher than the group of children who have introverted personality types. , It is based on the calculation of two-lane ANOVA showed that the value of $F(10,29) > F \text{ table}(4.11)$ at significance level $\alpha = 0.05$, then reject

H_0 and accept H_1 , (c) The interaction effect of learning methods and types the personality of the child's cognitive ability. It is based on the calculation of two-lane ANOVA showed that the value of $F(20.62) > F \text{ table}(4.11)$ at significance level $\alpha = 0.05$, then reject H_0 and accept H_1 , which means that the link between learning methods with influential personality type on the level of cognitive abilities (d) cognitive ability to target children who have extrovert personality type and by the teaching methods, the discovery method was higher than the group of children who were given the demonstration learning methods. It is based on the calculation that was further carried out using Tukey test $Q_{\text{count}}(7.54) > Q_{\text{table}}(4.33)$ with a significance level $\alpha = 0.05$, then H_0 is rejected and H_1 accepted, (e) the cognitive ability to target children have introverted personality types by guided discovery learning method is lower than the group of children who were given a the demonstration learning methods. It is based on the calculation that was further carried out by using Tukey test $Q_{\text{count}}(1.54) < Q_{\text{table}}(4.33)$ with a significance level $\alpha = 0.05$, then H_0 is rejected and H_1 accepted, (f) the cognitive ability to target children given a guided discovery learning methods that have extroverted personality type is higher than the group of children who have introverted personality types. It is based on the calculation that was further carried out by using Tukey test $Q_{\text{count}}(7,75) < Q_{\text{table}}(4.33)$ with a significance level $\alpha = 0.05$, then H_0 is rejected and H_1 accepted, (g) the cognitive ability to target children were given a demonstration of learning methods that have extroverted personality type is lower than the group of children who have introverted personality types. It is based on the calculation that was further carried out by using Tukey test $Q_{\text{count}}(1.33) < Q_{\text{table}}(4.33)$ with a significance level $\alpha = 0.05$, then H_0 is rejected and H_1 accepted.

Based on the above discussion and description, it can be concluded that guided discovery learning methods and personality types affect the cognitive abilities of children. Therefore, to improve the cognitive abilities of children, learning method and type of personality that children have are very helpful.

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