

The Impact of Learning Model and Classroom Management on Children's Self-Regulation (An Experimental Research on Group B Kindergarten in Banten, 2017)

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Abstract

This research aimed to find out the impact of learning model and classroom management on the self-regulation of five-to-six-year-old children of Group B Kindergarten in Banten in 2017. It used research method of factorial design 2X2 to explain the difference of children's self-regulation who got the treatment of learning model and classroom management. The research results: 1) there was an impact of learning model on self-regulation, 2) there was an impact of classroom management on self-regulation, 3) there was an interaction impact between learning model and classroom management on self-regulation, 4) children who were in the center-based classroom management and learned with learning cycle model had higher self-regulation than children who learned with scientific approach model, 5) children who learned with learning cycle model and were in the center-based classroom management had higher self-regulation than children who were in group classroom management. The implication of the research is that combining learning cycle model and center-based classroom management will support the success of the self-regulation development, which is the main provision of the early childhood school readiness.

Keywords: Learning model, classroom management, self-regulation

1. Introduction

PAUD (Early Childhood Education) is the foundation of the entire educational process. In the practice, PAUD is conducted to give children readiness in entering further education. This means that PAUD is responsible for helping the formation of school readiness, especially to five-to-six-year-old children (group B) in kindergarten who will enter education level of elementary school (SD). In regard to the school readiness, it was found that the data was quite alarming. Based on the Education Data Overview (Kemendikbud: 2015/16; Kemendikbud: 2016/17), the number of the Indonesian elementary school students who repeated grade in 2015 reached 422.882 children. Even in 2016, there were 361.215 children out of the total 25,62 billion of elementary school students. From the total number, the number of 1st grade student who repeated grade was 149.972 students, the 2nd grade was 76.816 students, the 3rd grade was 63.396 students, and the 4th, 5th, and 6th grade were

71.031 students. Apparently this condition happened with the highest percentage (42%) on the 1st grade of elementary school students. In Banten, there were 5116 (49%) of the first grade students who repeated grade in 2016 and in the previous year, there were 6.382 students (53,3%). This data is quite surprising, considering that the 1st grade of elementary school students who have just entered elementary education is assumed to have school readiness and have high learning spirit. However, the fact is that there are a lot of students who repeat grade.

One of factors which may be the cause why they repeat grade is the imperfect school readiness. It means that children are considered to be ready to study at school because they have the ability to read, write and count, but the fact is that they are not really mentally and physically ready to join the learning process at elementary school.

This unreadiness is characterized by the low ability of children's self-regulation. Rimm-Kauffman, Pianta and Cox (2000: 147-166) strengthen this assumption, it is found that more than half of the early grade of elementary school students are less in the skill of good self-regulation. It is really possible that this problem happens because in pre-school age, children do not get development stimulation of self-regulation skill.

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In Indonesia, Kaunang (2011) finds that the low self-regulation is related to Concentration and Hyperactivity Disorder (GPPH). GPPH is the most common psychiatric disorder in children. The case number is 30-40% out of the child's mental health cases. GPPH is characterized by the difficulty of focusing attention, hyperactive and impulsive. The impact of GPPH is quite broad, ranging from disturbing the child's development, emotion, behavior, academic level, to psychosocial aspect. GPPH commonly happens to three-to-five-year-old children with chronicity and risk of severe behavioral problem at school age. 76% of the GPPH symptom appears on the pre-school age children. Children with GPPH will be difficult in doing self-regulation at their age.

The symptom of GPPH often happens on pre-school age children which is characterized by children's difficulty in performing self-regulation. This will result to the negative impact of severe behavioral problem of school age children.

Ponitz in Riva (2015: 69) and Graziano (2007: 3) state that self-regulation is the most important aspect of school readiness. It is proven that children who are able to regulate themselves effectively in their early age, show better mathematical and language skill in the early grade of elementary school. LeWitt, Baker, Lin, Lawrence and Gorell (2003:225) also state that the aspect of self-regulation such as handling desire and following instruction are much more important for the school readiness than academic aspect such as knowing the letter.

Ylvwasaker, 2007 in Jamaris and Hartati (2017: 546) explained that self-regulation sometimes referred to as executive functioning, develops very gradually in children, beginning in infancy and continuing through the adolescent years. The development of self-regulation is positively influenced by: (1) Neurologic maturation, especially development of the frontal lobes of the brain, (2) Stability, organization, and predictability in the home environment, (3) Reasonable emotional attachment of children to important adults in their life, (4) Adequate opportunities for children to exercise control over events in their life, (5) A parenting style that steers between the extremes of permissiveness (at one end) and an overly authoritarian and controlling style (at the other end). Many people call this middle ground an "authoritative/responsive" style of parenting, (6) An environment that models, values, and rewards self-regulation, autonomy, and personal responsibility, (7) Reasonably effective development of language, for communication as well as for problem-solving and self-regulatory self-talk, (8) Positive adult-child interactions that include the regulatory words, procedures, and themes that will eventually be internalized by children to become their internal self-regulatory system. Adult interaction with children, if well-conceived and frequently repeated, ultimately becomes appropriated by the children as an internal self-regulation system. Adult words, if well selected and used on the right occasions, become the child's self-regulatory thoughts.

Helping pre-school children develop the self-regulation skill will prepare them for a more successful transition to study at school because self-regulation is placed on the highest ranked as the most important skill that the children should have for their school readiness. Blair, (2002: 111) proves that the level of early self-regulation has a stronger relationship with the school readiness than IQ or academic readiness. Galinsky in Florez (2011: 126) states that self-regulation that includes the regulation of thinking, emotion and behavior, is a critical thing for achieving success in school, work and the future life. Moreover, the newest research finds that self-regulation directly relates to brain maturation, a certain part of brain including cortex cingulate dan cortex prefrontalare involved in the development of self-regulation (Thompson, 2009: 33). These findings indicate that self-regulation as the determiner of school readiness needs to be developed by involving the entire aspect of children basic ability holistically and not only focusing to prepare the academic ability in the form of practicing reading, writing and counting.

Amini's research result (2015: 15) in South Tangerang, Banten found that a lot of parents, especially mother, have to always help the children taking care of themselves in everyday routine. The forms of parents' help to the children are; they are still bathed and fed, they sleep with their parents, still assisted in wearing and removing clothes and or shoes, and still need to be trained to clear their eating utensils up by themselves. This skill should have mastered by five-to-six-year-old children. This finding shows the low children's self-regulation skill. Children with low self-regulation will have difficulty in following the learning because they have not been able to concentrate and follow the instruction and they also have not been able to be independent. On the other hand, the subject material in elementary school is getting more and more difficult, so it is possible that one of the impacts is children will repeat grade.

Self-regulation refers to various characteristics and multi dimension abilities, including the ability to monitor and handle emotion, thought, mind and behavior as stated by Barkley in McClelland, et.al. (2010: 509). This is the key of school readiness which supports the children's ability to be successful in two conditions, academic situation and social situation. The formation of the self-regulation skill really depends on the stimulation effort done in educating children, which is, in this context, teacher's task in kindergarten. Unfortunately, there are still a lot of teachers use the wrong method of learning, as found by Freiberg and Driscoll (2013: 373): teacher talks too much, speaks improperly, speaks at the wrong time, and a lot of teachers are too quickly in responding question they ask or to move from one student to the next student to immediately respond the question or order. This teacher's mistake will reduce the positive atmosphere of learning.

The weaknesses of Indonesian teachers are that they have not been able to create the learning that makes the students be more active and have difficulty in

implementing scientific approach which is the characteristic of Curriculum 2013 (Web Info Guru dan Pendidikan, 2014). Out of five steps of scientific approach, namely observing, questioning, reasoning, experimenting and communicating, one that the teachers often miss is reasoning. The essence of scientific approach is that students chronologically implement the activity of observing, questioning, reasoning, experimenting and communicating. However, the guideline of Curriculum 2013 states that on every learning, the implementation of scientific approach may not be chronologically implemented (Buku Panduan Pendidik, Kurikulum 2013 PAUD usia 5–6 tahun, 2013: 12), so that the problem that arises is the scientific approach is often not chronologically done in a learning process. This condition illustrates that teacher has not understood the right step in implementing the learning activity so that it needs improvement or solution.

Designing a learning that implements learning model which serves a more structured step, is the solution of the above problem. One of learning models which can be considered is learning cycle model or cycle of learning. This model is based on Piaget's constructivism which assumes that in learning, children develop their own knowledge in cognitive structure through interaction with their environment (Renner, et.al., 1988: 39). Learning cycle model is highly suited with the thinking ability level and learning way of early childhood based on the finding of Renner and Marek (1990: 241-246).

Learning cycle is a series of learning phases which are organized in such a way so that the students can master the competency they have to achieve in the learning by playing an active role according to their learning speed. However, the implementation of learning cycle model in PAUD in Indonesia is rarely.

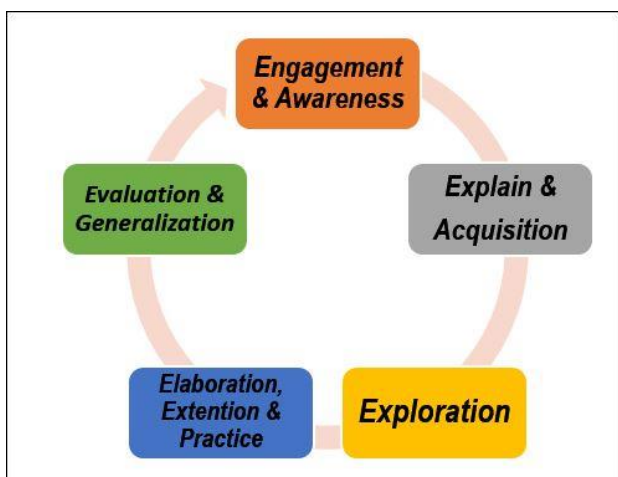


Figure 1. The Modification of Learning Cycle Model 5E Bybee-Kostelnik

Therefore, the researcher was encouraged to review the application of this model. The researcher tried to modify Learning Cycle 5-E from Bybee with learning cycle model from Kostelnik. Both of them consist of 5 phases to

develop children's self- regulation as seen in Figure 1 above.

Classroom management aims to create and maintain a conducive classroom atmosphere. Various forms of classroom management can be chosen, but the best is the one that is oriented to student-centered learning, for example center learning. Center is a learning activity which is organized with areas in the classroom which are designed to motivate children to interact with various media/learning materials based on their stage of development. In center-based classroom management, children have the choice of activities with interesting theme and learning sources. They can explore and interact with the surrounding environment because teacher does not only teach classically but also in large and small group activity even individual activity. In center, children are familiarized with dialogue, research, becoming active learner and finding the concept and understanding of a thing by themselves and solving the problem in the class.

We understand that children's self-regulation is developing time to time and also requires predictable, structured, and age appropriate environment. Teachers should be proactive in educating/teaching them based on their way of learning and able to manage the class well, thus children get the right learning experience which can develop their self-regulation skill as the determiner of school readiness and the success in the next level of education. The class should be well and professionally managed. It should also be improved with the right learning model and classroom management. Therefore, based on the above explanation, the researcher thought that it was necessary to conduct a research on the impact of learning model and classroom management in the effort to develop the self-regulation of five-to-six-year-old children in kindergarten.

Method

The method used in this research was experimental method with two subject groups, namely experimental group and control group in which the two groups were given a treatment. The research hypothesis was interaction hypothesis with factorial design 2x2. The treatment variable 1 was learning model, which was classified as learning cycle model and scientific approach model, while the treatment variable 2 was classroom management, which was classified as center-based classroom management and group classroom management.

The population in this research was kindergarten students in South Tangerang, Banten. The determined accessible population was students of group B kindergarten in the academic year of 2016/2017. The sampling technique used was cluster random sampling.

The data collecting was conducted directly by the researcher with teachers using observation technique with rating scale. The observation instrument aimed to

measure the children's self-regulation skill which was supported by documentation at the time of learning. The instrument development was conducted by creating variable indicator of learning instrument, doing expert judgment, doing try-out test, testing the instrument's validity and reliability.

The data analysis technique used was descriptive statistical analysis, in the form of data presentation with the theoretic range of mean, median, mode, frequency distribution and histogram, as well as standard deviation. Before testing the hypothesis, the researcher did normality and homogeneity test as the prerequisite test of analysis. Inferential analysis was conducted using two-way ANOVA (analysis of variance) to test the hypothesis by viewing the main impact while testing the interaction impact used Tukey test.

Result and discussion

The results of hypothesis test using two-way ANOVA and Tukey test are as follow:

1) The self-regulation of children who learned with learning cycle model was higher than that of children who learned with scientific model.

The calculation result indicates that $F_{value} = 4,137$ was greater than $F_{table} = 4,04$ ($F_v = 4,137 > F_t = 4,04$). This means that H_0 is rejected and H_1 is accepted, so that there is a significant difference. The mean score of the self-regulation of children who learned with scientific method was 61,346.

2) The self-regulation of children who learned in center-based classroom management was higher than that of children who learned in group classroom management.

The calculation result indicates that $F_{value} = 4,329$ was greater than $F_{table} = 4,04$ ($F_v = 4,329 > F_t = 4,04$). This means that H_0 is rejected and H_1 is accepted, so that there is a significant difference. The mean score of the self-regulation of children who learned in center-based classroom management (64,731) was higher than that of children who learned in group classroom management (61,308)

3) There was an interaction between learning model and classroom management on children's self-regulation.

The calculation result indicates that $F_{value} = 8,815$ was greater than $F_{table (0,05)} = 4,04$ and $F_{tabel (0,01)} = 7,21$ ($F_v = 8,815 < F_t = 4,04$ dan $F_v = 8,815 < F_t = 7.21$). This means that H_0 is rejected and H_1 is accepted, so that there is a significant difference. Therefore, there is an interaction impact between learning model and classroom management on children's self-regulation. The graph on Figure 2 clarifies the occurrence the interaction.

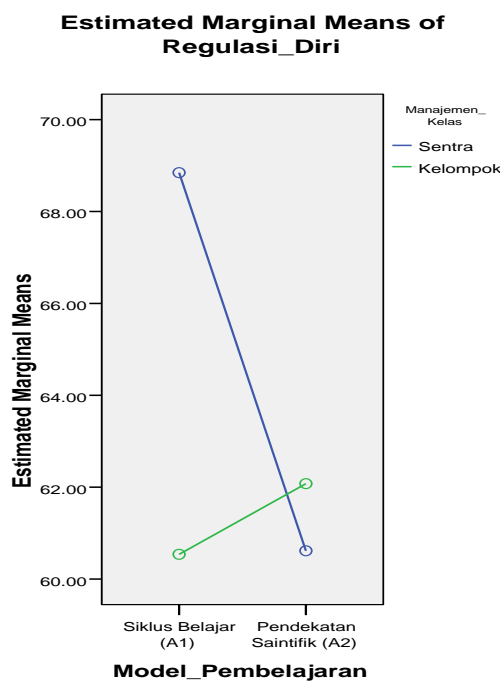


Figure 2. The Graph of Learning Model and Classroom Management Interaction

The two intersecting lines indicate that there is an interaction between the two variables, both learning model variable and classroom management variable on children's self-regulation variable. Interaction is a cooperation between learning model and classroom management. This interaction can be interpreted as the impact of learning model on self-regulation that depends on the classroom management or vice versa.

4) The group of children who were in center-based classroom management with the learning using learning cycle model and scientific model (A1B1 - A2B1).

The calculation result indicates that $Q_{value} A1B1-A2B1 = 5,04973 > Q_{table} = 3.055$ which means that H_0 is rejected and H_1 is accepted on a significance $\alpha = 0.05$. It indicates that the self-regulation of children who were in center management learned with learning with cycle model was higher than that of children who learned with scientific method.

5) The group of children who were in group classroom management with the learning using learning cycle model and scientific model (A1B2 - A2B2).

The calculation result indicates that $Q_{value} A1B2-A2B2 = 0,8883 < Q_{tabel} = 3.055$ which means that H_0 is rejected and H_1 is accepted on a significance $\alpha = 0.05$. It indicates that the self-regulation of children who were in group classroom management learned with learning cycle model was relatively the same with the self-regulation of children who learned with scientific method.

6) The group of children who were in center-based classroom management and group classroom management with the learning using learning cycle model (A1B1 – A1B2).

The calculation result indicates that $Q_{\text{value}} A1B1-A1B2 = 5,0029 > Q_{\text{tabel}} = 3,055$ which means that H_0 is rejected and H_1 is accepted on a significance $\alpha = 0.05$. The calculation result indicates that the self-regulation of children who learned with learning cycle model that were in center-based classroom management was higher than the self-regulation of children who were in group classroom management.

7) The group of children who got scientific model learning that was in center-based classroom management and in group classroom management (A2B1 - A2B2).

The calculation result indicates that $Q_{\text{value}} A_2B_1-A_2B_2 = 0.9351 < t_{\text{tabel}} = 3.055$ which means that H_0 is rejected and H_1 is accepted on a significance $\alpha = 0.05$. It indicates that the self-regulation of children who learned with scientific model was relatively the same with children who were in group classroom management and in center-based classroom management.

Based on the result of the data analysis and hypothesis test, the research findings that will be discussed are:

a) Self-regulation and Learning Model

The first hypothesis ($H1: \mu_1 > \mu_2$) which stated that the self-regulation of children who learn with scientific model is higher than children who learn with scientific model, is significantly accepted. The difference of result occurred because in learning cycle model, the learning steps done were really systematical and detail with various activities. This condition really supports the formation of self-regulation as stated by Depe, 2010 that the learning of children's self-regulation should be guided to identify, categorize and also analyze all things (objects and events) which become the basis of the cognitive process (including memorizing, solving a problem and making a decision). All the processes and directions are on the learning cycle model. This is in line with Aksela's idea that in learning cycle, each child builds knowledge in his/her brain by himself/herself. The teacher's task is to facilitate. Learning cycle model enable the creation of a learning that guides the children actively through a step to another step regularly and it is based on their level of thinking ability. This is in line with Driscoll and Nagel's opinion (2008: 60) that in the development of preschool children's self-regulation, they should get an opportunity with a more complex direction, a set of clear rule, a responsibility that is appropriate for the children's skill, an understanding of the consequence for every action and also a positive model role. Therefore, it is proven that

learning cycle model is able to meet the demand to develop children's learning skill which is part of children's self-regulation.

The weakness of scientific model occurred when the teacher experienced confusion in the implementation of ordering the five steps. The implementation of scientific steps sometimes does not fully describe a continuous process yet. Besides, the teacher's task as a facilitator often changes into conventional teacher. By the characteristic of teacher-centered learning, scientific learning model does not optimally develop the children's self-regulation yet. Although the two learning models contributed to develop children's self-regulation, the learning cycle model gave a better result than the scientific model did. Based on this finding, it can be concluded that children who get learning with learning cycle model have a better self-regulation than children who get learning with scientific model.

b) Self-regulation and Classroom Management

The second hypothesis ($H1: \mu_1 > \mu_2$) which stated that there is a difference in self-regulation of five-to-six-year-old children between children who are in center based classroom management and children who are in group classroom management, is significantly accepted. The difference of the result is due to teachers in center based classroom management facilitated the children with classroom environment that built positive experience so that they were able to master and at the end they had good self-regulation skill. Center classroom environment was managed and organized so that children had the opportunity to choose various activities based on their interest. The activity in center can motivate children to be active and interactive learner. This proves that what Coughlin (2000: 10) stated that center learning is a dynamic and changing environment with teaching material and learning experience that are designed to link the interest and development stage of each child. This is very likely to improve children's self-regulation.

The opportunity to choose the activities in center-based classroom management helped children learned to choose and build their interest and skill. Children also learned to solve problem, communicate and work with their own purpose. It proves that what Rice (2012: 3) states that one of classic examples that center-based classroom management can improve children's self-regulation is when they choose one of activity centers, so that children have to decide to go elsewhere or negotiate with other children who have a turn in the center. That is the time when children learn to train their self-regulation. What Florez in Rice (2012: 1) proposes is also proven in this research. The scaffolding in center helps children develop the self-regulation. The scaffolding encourages teachers to recognize the position of children's performance and provides the needed activity supporter which enables them to be successful. The need of scaffolding can be fulfilled through center-based

classroom management because the implementation of center includes 4 scaffoldings namely scaffolding the environment, scaffolding the pre-play experience, scaffolding the individual child's construction and scaffolding the post-play experience (Phelps, 2012: 28). It is different from group classroom management, which is a group process approach, namely socio psychological approach which prioritizes regulation and optimization of the interaction among students in a group activity without scaffolding.

The teacher's task in group classroom management is to create and maintain the group classroom's situation to be effective, efficient and productive. In group-based classroom management, children are directed to interact each other in the group activities which are deliberately arranged by teacher by implementing agreed rules to create the optimum classroom condition in achieving learning objective. Teacher is often busy and active in this group classroom management. The group classroom management needs teacher's skill to create a condition that enables the group to be productive group. Besides, teacher should also maintain the classroom in good condition. To maintain it, teacher should be able to maintain high spirit, overcome conflict, and reduce management problems. This helps children to form their self-regulation.

Both center and group classroom management can improve children's self-regulation. However, seeing the teacher's active involvement in group-based classroom management, children's self-regulation cannot be developed optimally. Not only interact with their friends, children also need to be facilitated with the right classroom environment arrangement. They also need to be given an opportunity to choose the activity and directed themselves based on their interest and capability to achieve the learning objective. Based on these findings, it can be concluded that children who are in center-based classroom management have higher self-regulation than children who are in group classroom management.

c) The Interaction of Learning Model and Classroom Management on Self-regulation

The third hypothesis which stated that there is an interaction impact between learning model and classroom management on children's self-regulation, is significantly accepted. In other words, there is an interaction impact between learning model and classroom management on children's self-regulation on the self-regulation of five-to-six-year-old children. Self-regulation includes three domain aspects namely; the ability to maintain emotion (emotion regulation), control behavior (behavior regulation), and focus on attention (cognitive regulation). Each aspect of self regulation needs the right stimulation. This is in line with Bandura's (1991: 267) opinion that the external factor namely the surrounding environment condition or the classroom atmosphere can influence children's self-regulation. Therefore, regulation stimulation can be given through

the use of learning model and classroom management so that teacher needs to look for the right learning model and classroom management based on the need of regulation development of children.

The learning process at school has a role as an interactive process for children which involves peer, adult, and environment. Children understand what happens on their surrounding by synthesizing new experience and what they have understood before. This proves that Siegal's opinion in Lundy (2012: 1) that the formation of self regulation of children involves the entire components on the children's surrounding secara integratif. Four factors that influence the self-regulation are mind and spirit, body and behavior, system and structures as well as culture. The four factors are interconnected and mutually influenced. They are realized in the implementation of learning model and classroom management in PAUD or kindergarten.

A learning model with a certain classroom management is not the only way of children's self-regulation development. The most important thing is a learning that is created based on the need of children's self-regulation development. The finding of the research that learning model and classroom management were able to improve children's self-regulation is in accordance what Rice (2012: 3) states that to develop children's self-regulation, it is needed to create a classroom environment that gives them to practice their self-regulation with various strategies in it. The classroom environment should be well-managed and combined with the right learning model and learning strategy so that it can give a lot of opportunity for children to train self-regulation. Based on the result, it can be concluded that there is an interaction impact between learning model and classroom management on children's self-regulation. This finding gives reinforcement that regulation development can be improved by learning model and classroom management used by teacher in PAUD learning.

d) Self-regulation and Classroom Management based on Learning Model

The fourth hypothesis (H1: $\mu_{11} > \mu_{21}$) which states that there is a difference in the self-regulation of five-to-six-year-old children who are in center classroom management between children who learn with learning cycle model and children who learn with scientific model, is significantly accepted. This finding indicates the importance of selecting good learning model and is appropriate to the children's development. Learning cycle model is proven to give a lot of benefit for children especially for the development of self-regulation.

Learning cycle model will be effective if it is combined with center management because there is scaffolding in it. The procedure done in implementing center approach consists of 4 scaffoldings, namely; scaffolding the environment, scaffolding the pre-play experience,

scaffolding the individual child's construction and scaffolding the post-play experience (Phelps, 2012: 28). The main scaffolding in center are scaffolding the pre-play experience and scaffolding the individual child's construction because these are the main activities of learning process through playing with various strategies, methods and steps of learning activity. This scaffolding supports the implementation of learning cycle model syntax, as Ali's (1993: 9) opinion that learning cycle is a learning process which consists of series of activities which is done appropriately and regularly. Regularity in learning cycle model and center strongly supports the formation of children's self-regulation. This is proven as the opinion of Kostelnik *et al.*, (2015: 145) which state that when teacher gives structure and plan of daily schedule, it helps children regulate themselves because they learn to understand what they expect.

One of the self-regulation indicators is that children are able to focus or give attention. This is fulfilled through center based on Isbell's (1995: 26) opinion that by creating or deciding a clear boundary for each center, children can learn to maintain their own behaviour and keep focusing on the ongoing task in the center. Center management has the characteristic of high activeness in children which is characterized by the areas in the classroom which contain various kinds of activities/learning activities through playing. The purpose of those areas are to teach specific concept, provide an opportunity for children to manipulate object actively and explore in and out of the room. Children will be more focus and enjoy the learning process because children feel happy and excited and understand what and how the activities they do in center. Based on the finding, it can be concluded that the self-regulation of children who are in center classroom management and learn with learning cycle model is higher than the self-regulation of children who are in center classroom management and learn with scientific model.

e) Self-regulation and Group Classroom Management based on Learning Model

The fifth hypothesis ($H1: \mu_{12} < \mu_{22}$) which states that there is a difference in five-to-six-year-old children's self-regulation who are in group classroom management between children who learn with learning cycle model and children who learn with scientific model, is rejected. In group classroom management, children were set in a group as a unity, in which they were given a task to be discussed in the group. This condition was able to provide enough stimulation for the development of children's self-regulation skill. This is in line with Arends' (1998: 76) opinion that group generates norm and rule in the learning environment which can improve children's learning motivation. The examples are children have high social sense and can handle the selfishness, so that it makes the act of social solidarity in the classroom. Based on the finding, it can be concluded that the self-

regulation of children who are in group classroom management between children who get the learning with learning cycle model and children who get the learning with scientific model is relatively the same

f) Self-regulation and Learning Cycle Model based on Classroom Management

The sixth hypothesis ($H1: \mu_{11} > \mu_{12}$) which states that there is a difference in the self-regulation of five-to-six-year-old children who learn with learning cycle model between children who are in center classroom management and children who are in group classroom management, is significantly accepted. Center based classroom management corresponded to the implementation of learning cycle model since the center is an area that have all equipments which could be used by children in accordance with all activities in learning cycle model. The activities were both that included in 5 phases; engage, explore, explain, elaborate, and evaluate as well as Kostelnik's 5 learning cycles; awareness, exploration, acquisition, practice, and generalization. Even the correspondence had been seen since the first phase namely engagement and awareness where children performed activity in center as their own initiative based on their interest. They were allowed to choose the activity and decide to work individually or in group. This proves that Day's (1994: 29) opinion that structured center learning can improve the development in academic, communication and social skill as well as positive and independent self-concept. It also enables the children to make decision and to have other values such as respecting, helpful and understand other people. The center makes the learning be more interesting for the skill development and basic concept mastery which will give positive impact on the development of children's self-regulation.

A much different thing was found when the learning cycle model was combined with group classroom management. In group management, a certain area for children to "work" was not provided and the scaffolding was not implemented in the learning process. The learning process even tend to implement LK task in groups only so that the phases in the learning cycle could not be implemented optimally. Therefore, Coughlin's (2000: 10) statement that in center learning, teachers prepare various stimulations or activities and provide the children an opportunity to choose their own activities to help them choose and build the interest and skill, is true. Besides, children also learn to solve problem, communicate with others and work with their own purpose.

Center management enabled the implementation of all learning cycle phases well and smoothly because in center there were a lot of group and individual activity choices with scaffolding that supports the structured learning process. This condition strongly supported the formation of better self-regulation of children because

they need help to regulate themselves through scaffolding. This proves what Vygotski in Bodrova (2007: 78) proposes that external mediator play a great role in helping children making transition from being regulated by adults to self-regulated, by providing the necessary scaffolding to semi-independent regulation. Based on this finding, it can be concluded that the self-regulation of children who learn with learning cycle model in center-based classroom management is better than children who are in group classroom management. This condition strengthens the finding that learning cycle model can improve children's self-regulation more optimally if it is combined with center-based classroom management.

g) Self-regulation and Scientific Model based on Classroom Management

The seventh hypothesis ($H1: \mu_{21} < \mu_{22}$) which states that there is a difference in the self-regulation of children who learn with scientific model between children who are in center classroom management and children who are in group classroom management, is rejected. The children's self-regulation can be well-developed with scientific model because as what Bernard in Keyes (2010: 21) states that scientific model is designed in such a way to make students actively construct concepts, rules or principles through observing (to identify or find a problem), formulating problem, proposing hypothesis, collecting data with various techniques, analyzing data, concluding and communicating concepts, rules or principles which are 'discovered'. The expected learning condition is directed to encourage students in finding out from various sources through observation, and not only being told. This certainly supports the formation of children's self-regulation.

It is understood that scientific model implemented in center-based classroom management and in group classroom management can develop children's self-regulation in balance. In scientific model, teacher can choose various methods which enable children to be more active. After teacher explained the material to the children at the beginning of the lesson, children were expected to not only listen but also continue the activity by observing, questioning, collecting information, reasoning and communicating with the teacher. Children learned to complete tasks or exercises and they were allowed to ask if they did not understand. Teacher observed the children's work individually and re-explained to the children individually or classically. The important thing to be noticed was scientific approach model should be done by teacher more systematically and completely, without forgetting one or more of all scientific stages. If the stages are not interconnected and complete, it will affect the understanding of children's learning and not support the development of children's self-regulation. Based on the above findings, it can be concluded that the self-regulation of children who learn with scientific model is relatively the same, both children

who learn in center-based classroom management and group classroom management.

Conclusion

Based on the research findings, the conclusions are: 1) overall, in developing the self-regulation of five-to-six-year-old children, the use of learning cycle model is more effective than scientific model. 2) the self-regulation of five-to-six-year-old children who learn in the classroom which uses center-based classroom management is better than the self-regulation of children who learn in the classroom which uses group classroom management. 3) learning cycle model which is combined with center-based classroom management is more effective to improve children's regulation and vice versa.

The implications of the research results are: 1) learning model is a component that is quite decisive and affect the development of children's self-regulation and learning cycle model is proven to be effective in improving children's self-regulation. 2) center-based classroom management is proven to develop the children's self-regulation skill. 3) teachers as managers in the classroom need to develop themselves by reading, trying, reviewing and applying new knowledge about classroom management and learning innovation. 4) the importance of teachers' role in selecting and combining learning model with classroom management for the development of children's self-regulation. 5) kindergarten teachers can apply scientific model which is modified with stages/phases of learning cycle model, so that the learning process of children be more effective and give the more optimum result on children's self-regulation. 6) teachers and parents need to establish a harmonious cooperation in order to improve children's self-regulation because it is the basis for the readiness of children's learning on the next level of education and is a guarantee of the success of children's life in the future.

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