



## The Improvement of Conservative Characteristic through Science for Beginner Based on Scientific Approach on Children from 5-6 Years of Age In TK IT As-Shiddiqy Jepara

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### Abstract

Conservative characteristic aims at boosting care or attention to the surrounding environment. Learning science based on scientific approach is beneficial to find out the reasons and impacts exist in the environment through the process of observation, questioning, collecting and processing information, and communicating. This study aims at finding out the difference of improvement of conservative characteristic through science for beginner based on scientific approach on children from 5-6 years of age. Research method used is quantitative method while research design is experimental design through One Group Pretest-Posttest. The sample used is 30 children on the age of 5-6. Sampling technique used is purposive sample. The result of this research analyzed with Paired Sample t-Test is that the improvement of 38,9 in percentage 38% coming from average value of pretest from 102,27 turning into 141,17 for posttest average score. The increase is started from 25 points up to 57 points. This increase is resulted from t-test with  $t_{count} = -27,422$  less than  $t_{table} = -2,045$  that is  $-2,045 > -27,422$  or  $27,422 > 2,045$  with significance value (2-tailed) by  $0,00 < 0,05$ . This means that there is such significant difference on conservative characteristic through science for beginner based on scientific approach on children from 5-6 years of age in TK IT As-Shiddiqy Jepara.

## INTRODUCTION

Environment refers to all things around humans and living creatures which enable the complex interaction on both sides exist and relate one another among the components (Daryanto dan Suprihatin, 2013). While the definition of environment according to Statute Number 32 Year 2009 about the Protection and Administration of Living Environment, living environment is the unity of spaces with all things, powers, circumstances and living creatures including humans and their behaviors which impact the ongoing life and prosperity of humans and other living creatures.

Nature and its contents are basically created by God for the necessity and prosperity of humans. Natural resources are thoroughly savoured by humans too. They are utilized not only for humans' affluence but also for humans' happiness. Therefore, means of conservation is a must for the balance and harmonious environment to support the continuing establishment.

Human's behavior towards nature can be seen concretely. The development of age through times influences the development of knowledge and technology yet ironically; humans' attitude towards nature is getting rude. Recent living environment meets the decrease since exploitation done by humans without any supporting energy of nature such as landslide and flood, the use of excessive water wastefully and carelessly that leads into water scarcity, throwing trash anywhere which leads into decreasing quality of water, land and air. Those circumstances are the examples of unwise humans' attitude towards environment.

This fact motivates us to share understanding to Indonesian next generation about the importance of care and attention towards environment. Conservative characteristic that is an essential value of caring for environment can be raised in educational world. Preserving environment, taking care and protecting environment, earth and its content are kinds of obligation and responsibility for all people. Care and attitude carried out by the government about the need of character education are written in Statute Number 20 Year 2003 about National Educational System. Article 3 of that Statute asserts that "National education runs to develop ability and form characteristic and prestige national civilization in the purpose of excelling or brightening national life, aims at developing students' potential in order to be faithful and pious people to The Almighty God, good attitude, healthy, knowledgeable, capable, creative, independent, and beco-

ming democratic and responsible citizens".

In the context of educational institutions, growing up and increasing awareness of people about the importance of living environment turn into urgent things. One of educational institutions that puts or raises conservative characteristic towards environment is early childhood education. Education is an effective tool to get individuals aware of their identities. So, it will outcome humans' quality that posses gentle mind and soul, bright thinking, body deftness, and awareness of their creation (Wakhidah: 2014). In this age, children meet very rapid development. One of the research results declares that in the age of 4 years, the capacity of cleverness has achieved 50% and turns into 80% in the age of 8 years as stated by Dr. Gutama (www.paudjateng , 2015). This shows how important to give impulse to early childhood children is. Giving stimulus to children is equal with giving strong base as the supply of next development.

Caring for environment will teach children to actively participate in keeping environment by doing basic actions such as 1) taking care and loving plants by watering plants regularly, not pulling the plants carelessly, and spreading manure efficiently 2) throwing trash in the right place and getting children accustomed to doing 3R i.e. reuse, reduce, recycle 3) using water wisely.

Therefore, caring for environment should be really planted and risen on children. In accordance with Rakimahwati (2014) she declares that character education provided to build the character of national young generation. The process of building character since early childhood is better. Those characteristic can be increased through learning science for beginner. Children can directly observe all things exist in nature such as plant growth, disaster happening due to trash, and unwise attitude in using water so children can improve their understanding. Carin dan Sund (Widowati, 2008) define science as a system to understand universe through observation and controlled experiment.

The success of improving conservative characteristic to care for environment through science can be seen from the learning success and behavioural change of children. There are some effecting factors one of which is learning approach used. Scientific approach turns into learning that adopt steps to build knowledge through scientific method. Learning using scientific approach does not only see the result but also consider the skill gained during learning process.

TK IT As-shiddiqy is one of Islamic-based kindergartens in Jepara. It exactly locates in Mar-

goyoso Street near by a highway with dense inhabitants, which is expected to be able to keep the environment in order not to harm the surrounding. Teachers in that school teach science using scientific approach yet the teaching has not been maximally carried out. Science taught there only focuses on learning activities planned by the teachers so that students' creativity and capability are not explored enough.

The expectations of improving conservative characteristic to care for environment through science based on scientific approach are: 1) children can participate in keeping environment 2) the environment becomes a learning source for children to see reasons and results happening in it 3) children can be the learning subjects who actively participate in the learning process with scientific approach. Yulianti, et.al (2014) state that the character to care for environment of children can be undertaken by keeping the toilets clean, throwing rubbish in the right place, keeping the environment clean, spending water wisely, using *tissue* thriftily, economizing electric, and using plastic bags wisely. Children should be accustomed to those things. As Hasibuan (2013) said that character education does not only use speech or talking method yet environment, examples and direct practice.

From the explanation above, the problem in this study is how and how much the improvement of conservative characteristic through science for beginner based on scientific approach for children in 5-6 years old in TK IT As-Shiddiqy is.

## RESEARCH METHOD

This research was done in Jepara City from August-September 2017. The research belongs to experimental research using method of pre-experiment design through *One Group Pretest-Posttest*. Sampling technique used for this research is purposive sample while the total number of respondents is 30 children in 5-6 years old. The method of collecting data in this research is by using questionnaire of Likert scale. There are 44 valid items of statements written on the questionnaire which has been examined in advance so that it can be used for this research. In addition, the method of data analysis is descriptive-quantitative while to test hypotheses uses the analysis of *Paired Sample t-Test*.

## RESULTS AND DISCUSSION

This research was carried out in TK IT Ash-

Shiddiqy Desa Margoyoso, Kecamatan Kalinyamatan, Kabupaten Jepara. Before conducting the research, the researcher did an observation to find out how to plant conservative characteristic which are suitable with early childhood children. Before giving treatment, pre test was done first in order to know the beginning conservative characteristic of children. After the pre-test was completely conducted, the following step was to give treatment of conservative characteristic through science for beginner based on scientific approach in 12 times. After that, post test was done to find out the result of planting conservative characteristic through science for beginner based on scientific approach for children in the age of 5-6 years.

The research result of planting conservative characteristic through science for beginner based on scientific approach for children in the age of 5-6 years in TK IT Ash-Shiddiqy can be concluded as follow:

**Tabel 1.** Analysis of Descriptive Data

Descriptive Statistics				
	N	Minimum	Maximum	Mean
<i>Pretest</i>	30	84	122	102,27
<i>posttest</i>	30	109	154	141,17

The table above shows data of descriptive analysis result which consists of 30 children (N) as the respondents. Mean of respondents in pretest is 102,7 while the posttest 141,17. Maximum score of respondents in pretest is 122 while the posttest is 154. Minimum score of respondents in pretest is 84 and posttest is 109.

The next stage was examining hypotheses by using t-test to know the difference between before and after treatment by using result data of pretest and posttest. The result of test analysis for the difference between two averages using *Paired Sample t-Test* is provided on the following table.

**Table 2.** Analysis result of Paired sample t-Test Paired Samples Test

	Mean	t	Df	Sig. (2-tailed)
Pair 1 pretest - posttest	-38.900	-27.422	29	.000

It uses reliability rank by 95% or ( $\alpha = 0,05$ ) with sample on experimental group which consists of 30 children gained  $T_{\text{tabel}} = 2,045$  while data from the table above shows score of  $T_{\text{count}} = -27,422$ . Differential test of average from pretest and posttest in experimental group using hypot-

heses is provided as follow:

$H_0$ : No improvement of conservative characteristic through science for beginner based on scientific approach for children in the age of 5-6 years in TK IT Ash-Shiddiqy between before and after treatment.

$H_a$ : There is such improvement of conservative characteristic through science for beginner based on scientific approach for children in the age of 5-6 years in TK IT Ash-Shiddiqy between before and after treatment.

Analysis between pretest and posttest by using SPSS 16.0 Paired t-test is showed by the result of t-test with  $-t_{count} = -27,422$  is less than  $-t_{table} = -2,045$  that is  $-2,045 > -27,422$  or  $27,422 > 2,045$  with significance value (2-tailed) by  $0,00 < 0,05$ . Therefore, it can be concluded that  $H_0$  is rejected and  $H_a$  is accepted. So, it means that there is such improvement of conservative characteristic through science for beginner based on scientific approach for children in the age of 5-6 years in TK IT Ash-Shiddiqy after treatment. The average of improvement by 38,9 from the mean of pretest 102,27 turns into 141,17 as the mean of posttest with percentage by 38%.

Planting values of conservative characteristic particularly to care for environment through science for beginner based on scientific approach motivates students to plant conservative characteristic of caring for environment by observing environment. Indicator of believing in The Almighty God teaches children to be grateful by praying as their own religion, loving creatures one of which is animal and keeping environment as gratitude feeling. That is in line with Buchori (Rosmiyati, 2007) that character education can be meant as extended attitude i.e.. relating aspect of knowledge, feeling and moral to students including knowledge, awareness, willingness and actions to apply good values to The Almighty God, themselves, environment, and nationality so that they will be impeccable people.

The indicator of logical thinking, which is suitable with the concept of science, invites students to think logically about the environmental damage through stories and watching videos, which consist of the result of throwing rubbish anywhere, spen-

ding water unwisely, and cutting trees. During and after that activity, there is discussion and question-answer session so that children can share experience and construct the concept of children. In accordance with Morrison (2012), teaching science is recently based on investigation i.e. science helps children to solve problems. Investigation learning is learning that involves students in the activities and process that guide them to learning process. This is equal with Desstya (2014) that science as sophisticated product is a set of knowledge consisting of facts, concepts, argumentation, principles, laws, theories and models. After the children get such understanding that environmental damage occurred due to human behavior, children will think twice to do such activities that harm their environment. As Khusniati (2014) declares as the characteristic of caring for environment arises, one would think twice whenever he will do some activities that damage environment.

In the indicator of behaving in balanced and harmonious relation among humans and environment, children are invited to behave well towards nature and humans through a discussion about organic and inorganic trash. In utilizing inorganic trash, children are asked to create wall or window decoration using the remaining of mineral water glass. This activity gives understanding to students that trash can be reused to reduce abundant trash which can lead to environmental pollution. Maria (2014) uses principles of 3R; Reduce, Reuse and Recycling which is applied regularly and in stages. Ministry of National education (2010) declares that characteristic of caring for environment is attitude and action which attempt to prevent environmental damages and develop such efforts to fix the environmental damages which have happened. On other activities, children are asked to take part in keeping environment altogether so that keeping and taking care environment

become something fun for children.

In the indicator of being sensitive to physically environmental damage, students observe school environment both inside and outside the classroom. The observation conducted by students is that whether the environment has been in tidy and clean condition or not. If it has not been tidy students are asked to tidy it up, return things to the right place, and take up trash exist inside the classroom, eating place and school yard. Astriayulita (2017) said that children are trained to discipline cleaning and health with simple thing as cleaning up the remaining rice on the plates and throwing it to the waste bin and praying, brushing teeth and washing hands after the children have already eaten. A. Doni Koesoema (Nurani, 2014) declares that characteristic is typical value (finding out good values and having willingness to do good things, being good in real life and will give good effect towards environment) which is planted within humans will arise from one's behavior or attitude.

For the indicator of taking care for living environment, children are invited to participate in keeping environment by watering plants exist in the school, not picking or pulling plants in the school, and planting plants i.e. mung bean to increase affection of children towards plants. In this indicator, children will also observe parts and functions of plants and differentiating the growth of plants getting sunlight and those which do not. In accordance with Kurniawati (2017) that natural science is very beneficial to be improved and developed particularly about flora and fauna with the splendid nature in their surroundings. The purpose of this activity is to get students care and love the environment around them. This goes in line with Machin (2014) that scientific approach is a learning process which is constructed as well in order that students can actively build understanding of concepts, laws and concepts through

some stages of observation, formulating problems, setting up hypotheses, collecting and analyzing data, withdrawing conclusion from any information and , the last one, communicating. This also goes with the explanation by Carin dan Sund (Widowati, 2008) that defines science as a system to understand universe through controlled observation and experiment.

## CONCLUSION

Based on the explanation above, conservative characteristic through science for beginner based on scientific approach significantly improves. By this result, it can be said that scientific approach meets such significant improvement on children in the age of 5-6 years in TK IT Ash-Shiddiqy, Jepara Region. Children characteristic will change into positive ones that are believing in The Almighty God, thinking logically as the concepts of science or knowledge, behaving in balance and harmonious relation among humans and environment, being sensitive towards physically environmental damage and keeping the living environment.

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