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# The Effect of Cooking Class on the Eating Behavior of Children Playing Groups in the Pesantren District of Kediri City

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## ABSTRACT

This study aims to examine the effect of cooking class on vegetable eating behavior in children. This research is quantitative approach with a quasi experimental research design with a non equivalent control group design. The total sample of 64 children were divided into two groups, namely the experimental and control groups. Data is collected through two stages, namely pretest and posttest. In the experimental group treatment was given in the form of cooking class while the control group did not. The treatment was carried out four times. Data collected by observation and documentation techniques. Indicators of vegetable eating behavior observed were consuming various vegetables, physical activity of children, drinking water. The types of vegetables used in this study were 6 types of vegetables that are close to children's daily life, namely tomatoes and leeks (group A vegetables), broccoli and carrots (group B vegetables), peas and soy bean sprouts (group C vegetables). Hypothesis testing uses the Anova test with the help of SPSS 25 for Windows Evaluation Version. The results showed that there were significant differences in vegetable eating behavior between the experimental and control groups.



## 1. INTRODUCTION

Children are a gift from God almighty with all its uniqueness and strengths. Children are an investment in human resources (HR) that requires special attention in the process of growth and development. Children who are active creatures, creative, dynamic, full of curiosity, and there are many things to be learned. The quality of a child depends on the quality of growth and development, one of which is influenced by the provision of stimulation.

Hasibuan Rachma (2017: 2) argues that the process of growth and development of children is influenced by three main pillars, namely adequate nutrition, the fulfillment of children's health, and psychosocial stimulation that is carried out as a whole. The balance of the three pillars will help optimize the child's growth and development process. Age 0-6 years is a very influential and important time for children. Because at this time laying the foundation for future life in the future. This period is called the golden age. Hasan (2009: 41) argues that at this stage, the child's brain is developing very rapidly, reaching 80% of the ability of brain development in its life span, if stimulated properly. One of the good stimulation and environment can be obtained through early childhood education (PAUD).

According to the National Education System Law Number 20 the Year 2003 article 1 paragraph 14 Early childhood education is a coaching effort aimed at children from birth until the age of six carried out through the provision of educational stimuli to help physical and spiritual growth and development so that children have readiness in entering further education. Education for early childhood is held as an effort to develop all the potentials of children and the aspects of their development, including religious and moral values, physical motor (both fine and gross), cognitive, social-emotional, language, and art. In order to achieve optimal development in the process of growth and development of children, adequate nutrition and nutrition is needed. Nutrition is needed for the child's physical and psychological growth for the development of his abilities.

Hildayani (2014: 3-8), suggested that nutritious food content is very important for children because it can influence cell growth in the brain as a basis for children's intelligence.

According to the Regulation of the Minister of Health of the Republic of Indonesia number 75 of 2013, the nutritional adequacy rate (RDA) of children aged 1-3 years requires 1125 kcal of energy per day and children aged 4-6 years need 1600 kcal per day. Lariza (2015) stated that calorie needs must be fulfilled in 5 meals by arranging two snacks (the content of about 100-150 kcal for each snack) and three main meals. The provision of good and balanced nutrition and nutrition will affect the quality of human life throughout the world and can also reduce the risk of malnutrition, stunting, obesity, and diabetes.

The fact is that currently, children in Indonesia are overweight and stunted. Basic health research data (Riskesdas) by the Ministry of Health (2014: 2) shows that 26.6% of Indonesian children are overweight, and 37.2% are stunted. While data from WHO (2016) states that Indonesian children under the age of 5 are overweight, as many as 7 million and 7.8 million children are stunted. Responding to the high obesity and stunting in children, WHO and the Ministry of Health recommend that increasing fruit and vegetable intake in children. It is also recommended to reduce instant food and sweet drinks. The fact that children are lazy to eat fruits and vegetables. Children prefer fast food and savory snacks. Schindler, Corbett, Forestell (2013) suggested that children biologically prefer energy-dense foods that are often sweet and salty compared to healthy foods such as fruits and vegetables that often taste sour or bitter. In addition, children are lazy to try foreign food. Fear of this new food is called neophobia, which is a factor in the low consumption of fruits and vegetables in children. Sandell *et al*. (2016) argue that introducing vegetables to children must be in a way that is acceptable to the child. Children need to touch, feel the texture, get involved in the processing, and finally, want to eat it.

Grant *et al*. (2014) suggested the ability of teachers to speak interestingly in explaining healthy food, combined with repetitive activities that discuss relationships, relationships, and research provides concrete understanding to children about health and food relationships. In addition, when ideas emerge from within the child, then that understanding will be more striking in the child and will be brought to the adult child later. Susanto (2016: 184) suggests raising awareness through early nutrition education in children will foster children's love for nutritious food, so they will not feel compelled to eat, because children already understand that nutritious food is needed by the child's body.

Hasibuan Rachma (2017: 7) believes that knowledge about nutrition needs to be given to children from an early age through providing knowledge about the benefits of nutritious food, skills in obtaining it, and attitudes in the application of healthy and nutritious eating behaviors. The objectives of nutrition education include a). Children know the difference between healthy and unhealthy foods so that children can choose between healthy and unhealthy foods, knowing which is more nutritious, clean, and healthy food, safe and harmless food; b). Children can know the needs of the body for the process of growth and development; c). Children know good eating procedures; children can behave politely when eating activities; and can behave in a healthy, safe, and pleasant manner according to their age. According to Ratner, Folkens, Sharma, Daro & Eidens (2016) Students' knowledge about food nutrition (fruits and vegetables) can increase the craze of children eating fruits and vegetables.

DeCosta, Moller, Frost & Olsen (2017) suggested an activity that encourages children to eat vegetables is by cooking class. Because this activity involves children directly when processing food from preparation, processing to the presentation. Through the cooking class, the child touches vegetables directly, the child observes, feels the texture, sees the color, and knows the contents in it then processes it. This hands-on experience spurs children to be close to vegetables. Sabo & Lohse (2014) suggested that the involvement of children in cooking classes where children help prepare and cook vegetable-based foods that they consume can increase children's interest in vegetables.

The cooking class offers hands-on experience for children. Through cooking classes, children can be directly involved in the process of preparing ingredients, grouping vegetables, touching the texture of vegetables directly, and processing them. This is in accordance with Piaget's theory (in Sujiono *et al*., 2014: 3.4) each child develops their own knowledge thanks to their experiences and active interactions with the surrounding environment. This is supported by the opinion of Bruner (in Susanto, 2016: 167) children learn through several stages, namely enactive, iconic, and symbolic. Enactive is the stage children interact with objects in the form of objects, people, and events. In the iconic stage, children learn to develop symbols with objects. And the symbolic stage of the child develops the concept. At the symbolic stage, the child begins to learn to think abstractly; the child is able to connect the relationships between various objects, people, or objects in a sequence of events. Children begin to develop meaning or meaning in an event.

Marty, Chambaron, Niclaus & Patris (2017) suggested several factors that influence the behavior and desire to eat in children, including a) Sensory factors. This factor is related to the sense of touch and sense of taste. Children's interest in food, especially healthy food, is when children can touch, feel, and be directly involved in serving these foods. b) Social factors are factors that relate to friends and the environment. Children will be more excited to eat healthy food if in the same environment. In addition, children like to share food with other friends. c) Psychosocial Factors are factors that are related to children's cognitive abilities. As growth and development, also develops the cognitive abilities of children, where children will find out about what is good and not good for him. Why eat healthy foods, what are the contents of the food, and their expectations by eating these foods.

According to the Ministry of Health's balanced nutrition guidelines (2014: 58) in Appendix 4, vegetables are grouped into three groups based on nutrient content. The classification of vegetables is as follows: a) Group A vegetables are a group of vegetables which has very low-calorie content. Examples of vegetables that fall into Group A: leeks, gambas, squash, cucumbers, turnips,

squash, ear mushrooms, water pumpkin, lettuce, watercress, vegetable tomatoes. b) Group B vegetables are a group of vegetables that contain nutrients per serving or per 100 grams are 25 cal, 5 grams of carbohydrates, and 1 gram of protein. The types of vegetables, including group B, are spinach, kale, winged leaves, taro leaves, mustard greens, basil, carrots, pumpkin, young corn, bitter melon, broccoli, beans, young peas, ginger, cauliflower, chayote, young papaya, young papaya, bamboo shoots, bean sprouts, chayote. c) Group C vegetables are vegetables that have nutrient content per serving or per 100 grams are 50 cal, 10 grams of carbohydrates, and 3 grams of protein. Examples of vegetables, including group C are as follows: cassava leaves, blinjo leaves, katuk leaves, red spinach, mangkoans, blinjo, soy bean sprouts, peas, young jackfruit.

## 2. METHODS

This study is quantitative research with the experimental method. The independent variable of this research is the cooking class, while the dependent variable is vegetable eating behavior. The population in this study amounted to 140 children from 5 playgroup institutions in the Pesantren District of Kediri City. Sampling uses a cluster sampling method, which is a sampling technique where the sampling is based on a predetermined population area (Sugiyono, 2017: 118). At the time of the study, an experimental group and a control group would be formed. The experimental group consisted of 32 students from the Budi Mulia Banaran Play Group, and the control group consisted of 34 students from KB Cemerlang Bangsal. This research was conducted in March 2019, consisting of 4 treatments. The implementation of treatment is when the child is at the center of natural materials.

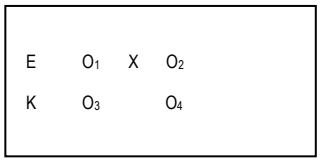


**Figure 1**. Research Design

The research design is as follows:

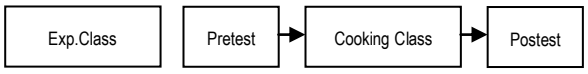


**Figure 2**. Experimental group research design

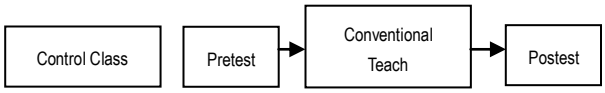


**Figure 3**. Control group research design

The study instrument consisted of 3 indicators, which were adapted from Permendikbud 137 in 2014 and the Guidelines for balanced nutrition of the Republic of the Indonesia Republic of Indonesia in 2014, which were then used as six observed child behaviors. Indicators of children can eat a variety of vegetables with instruments children eat vegetables class A / B / C, eat 2 types of vegetables (A & B / B & C / A & C), Eat 3 types of vegetables (A + B + C). Indicator of physical activity of children with handwashing instruments before eating, eating with a spoon. While the indicator of drinking water consists of instruments pouring water in glasses and drinking water.

Before use, the instrument must be tested so that the data collected can be justified, and the data obtained are more accurate, accurate, reliable, and trustworthy. Sugiyono (2017: 173) suggests a valid instrument can be used to measure what should be measured. The validity test in this study uses construct validity, which is in the form of an observation sheet of children's science abilities per indicator item. Each item of the validation indicator has been consulted with experts (judgment expert). The instrument was then tested and analyzed using the Sig formula correlation product-moment Sig (2- tailed) through the help of SPSS 25.0 for the windows evaluation version.

Reliability testing using the Cronbach Alpha formula with the help of the computer program SPSS 25.0 for Windows Evaluation Version. According to Ghozali (2013: 48), if the Cronbach Alpha (α) value is greater than 0.70, the research variables are said to be reliable to be used as input or input in the process of analyzing data to test hypotheses.

**Table 1.** Research Instrument Validation

| Instrument | *Pearson Correlation* | Description |
|---|---|---|
| Eating Behavior 1 | 0,691 | Valid |
| Eating Behavior 2 | 0,734 | Valid |
| Eating Behavior 3 | 0,889 | Valid |
| Eating Behavior 4 | 0,889 | Valid |
| Eating Behavior 5 | 0.618 | Valid |
| Eating Behavior 6 | 0,687 | Valid |

**Table 2.** Research Instrument Reliability

| Cronbach's Alpha | N |
|---|---|
| 0,820 | 6 |

**Table 3**. Results of Observation

| Group | Initial Observation | Final Observation |
|---|---|---|
| Exsperiment | 12,84375 | 22,875 |
| Control | 12,82353 | 18,64706 |

## 3. RESULTS AND DISCUSSION

### Data Normality

The data is called normal if the data distribution shows the significance of $L_{count} > 0.05$. Data normality testing is done by Kolmogorov Smirnov on SPSS 25.0 for Windows.

The normality test results in this study are as follows:

**Table 1**. Normality Test Data Pretest Vegetable Eating Behavior

**Tests of Normality**

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Exsperiment | ,146 | 32 | ,080 | ,955 | 32 | ,199 |
| Control | ,147 | 32 | ,075 | ,950 | 32 | ,142 |

a. Lilliefors Significance Correction

**Table 2**. Normality Test Data Postest Vegetable Eating Behavior

**Tests of Normality**

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | Df | Sig. | Statistic | df | Sig. |
| Exsperiment | ,153 | 32 | ,056 | ,927 | 32 | ,032 |
| Control | ,177 | 32 | ,012 | ,941 | 32 | ,082 |

a. Lilliefors Significance Correction

Based on the above table using Kolmogrov Smirnov, it can be seen that the significance value is greater than 0.05 so that the pretest and postest data of vegetable eating behavior are normally distributed.

### Homogeneity

Homogeneity testing aims to find out about the population variants that are the same or not. One of the requirements in using parametric statistics is homogeneous data. This homogeneity test uses lavena guidelines. If Levena is statistically valuable if the value of sig > 0.05 then the data is said to be homogeneous but if Sig < 0.05 then the data are not homogeneous. Homogeneity test was carried out with the SPSS 25.0 for Windows program.

**Table 5**. Homogeneity Test Pretest Data on Vegetable Behavior

**Test of Homogeneity of Variances**

| | | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Result of pretest_PM | Based on Mean | 2,381 | 1 | 62 | ,128 |
| | Based on Median | 2,352 | 1 | 62 | ,130 |
| | Based on Median and with adjusted df | 2,352 | 1 | 60,478 | ,130 |
| | Based on trimmed mean | 2,301 | 1 | 62 | ,134 |

Based on the results of homogeneity testing of vegetable eating behavior in table 5 above it can be seen that the significance value or p value of 0.134> 0.05 so that the variant of homogeneous data, the assumption of homogeneity is met.

**Table 6.** Homogeneity Test Data Postest Vegetable Eating Behavior

**Test of Homogeneity of Variances**

| | | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Result of _Postest_PM | Based on Mean | 2,669 | 1 | 62 | ,107 |
| | Based on Median | 2,197 | 1 | 62 | ,143 |
| | Based on Median and with adjusted df | 2,197 | 1 | 61,481 | ,143 |
| | Based on trimmed mean | 2,612 | 1 | 62 | ,111 |

Based on the results of homogeneity testing of vegetable eating behavior in the table above it can be seen that the significance value or p value of 0.111> 0.05 so that the variant of homogeneous data, the assumption of homogeneity is met.

### Hypothesis testing

To test the hypothesis of the influence of cooking class on vegetable eating behavior in children playing groups in the Pesantren District of Kediri City using Anova with the following conditions:

If F Count < F table then Ha is rejected H0 is accepted

If F Count > F table then Ha accepted H0 is rejected

In this hypothesis test using data in the final observation activities of the experimental group and the control group. The following is a hypothesis test:

**Table 7**. Description of Hypothesis Test Results

**ANOVA**

Result_Postest_PM

| | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 228,766 | 1 | 228,766 | 144,960 | ,000 |
| Within Groups | 97,844 | 62 | 1,578 | | |
| Total | 326,609 | 63 | | | |

Based on the One Way Anova test results in the above table, it was obtained that the Fcount was 144,960> FTabel value that was equal to 3.15 and the significance value of p value 0,000 <0.05 then Ha was accepted H0 was rejected. It can be concluded that cooking class influences the eating behavior of vegetables in children playing groups in the Kediri City Boarding School.

## 4. CONCLUSION

Cooking classes that have been implemented in the experimental group have an influence on vegetable eating behavior. Especially in the number of vegetables consumed, types of vegetables consumed, recognize healthy lifestyles by washing your hands properly, and want to drink water. This is in line with the opinion of Schultz and Danford (2016), which states that the child's eating behavior is obtained from the child's daily experience with objects, events, or people. In addition, eating behavior is also influenced by the child's sensory experience, beliefs, habits, and actions of those around.

Cooking class that is applied to children playing groups in the Pesantren District of Kediri City places more emphasis on the introduction of the diversity of vegetables consumed and their numbers. According to Bandura's cognitive theory (in Overcash et al.,: 2018), cooking activities and food preparation activities, increasing children's closeness to vegetables and confidence in eating vegetables, and this affects the fondness of eating vegetables and the variety of vegetables consumed.

Thus, the application of cooking class to children playing in the Pesantren District of Kediri City is very useful, especially in developing vegetable eating behavior. In further research, it is recommended to add a variety of vegetables so that more knowledge is obtained by children about vegetables and the variety of vegetable nutrients that enter the child's body.

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