



# Health Education Media “Smart with Your Foods” Increasing Selection of Foods Knowledge for Elementary School Students

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## ABSTRACT

The importance of the application of healthy behaviors in elementary schools need serious attention. Results of a preliminary study revealed the low student behavior, especially on the selection of healthy foods. Efforts to do one of them by conveying this information by using the right media health education. This study aimed to increase the knowledge of elementary school students through health education media "Smart with Your Foods". Implementation has been performed using a quasi-experimental design with non-equivalent control group pretest-posttest design. Research subjects are elementary school students. Respondents were divided into the experimental class and control class. This research reveals that "Smart with Your Foods" media effectively to enhance students' knowledge about the selection of healthy foods. Conclusion: This media is effective in improving the selection of foods knowledge for elementary school students.

## 1. Introduction

Efforts to improve the quality of human resources is an ongoing activity. One form of such efforts including with regard to nutrition and health of school children. School-age children are the future generation. The quality of a nation in the future is determined quality of children who grow up at this time. Growing development of optimal child nutrition depends on the amount and kind of correct.

Elementary School Students generally meet the needs of snack and lunch is done by way of purchase of a school cafeteria. But the fact that not all school canteens facilitated with adequate, namely canteens that provide healthy food in sufficient quantities for their students. Thus many students bought food at merchants outside of school.

Snack is usually done by children, because of the lag time between breakfast and lunch are relatively long so that children require additional nutrient intake between the two meals (Khomsan, 2006). Snack food or commonly known as street food is the food and beverages prepared and / or sold by sellers and hawkers

especially in streets and other public places (Fellows and Hilmi, 2011). Snack food plays an important role in providing an additional contribution to the nutritional adequacy, in particular energy and protein. Habit of eating snacks at school occurred because 3-4 hours after breakfast stomach feels hungry again (Sahadi, 2004). But also street food health risks. This is because often unhygienic handling and no additional food additives that are not permitted (Saparinto and Hidayati, 2006). Snacks snacks school children who do not qualify continuously increased to 80.79% in 2013 and Central Java has the highest exposure of morbidity and mortality in extraordinary events that 4,935 cases of food poisoning (BPOM, 2014).

The results study of Food and Drug Supervisory Agency (BPOM) on students Snacks Profile reveals a lot going on foodborne diseases and the spread of waterborne diseases (Trianto A.A, 2016). Results of research on student snacks found that 45% are in the hazardous category. About 19% occurred extraordinary events occur as a result of these snacks and 78.57% in case of poisoning affecting the students due to the dangerous snacks (Kristianto et al, 2013).

Less ensuring the quality of street food can harm the health of students. Students are more interested in buying snacks containing artificial flavoring and coloring compared to the healthy food made from home industry. (Trianto A.A, 2016). They rarely pay attention to the health aspects of food. They choose snacks based on preferences, even though these foods are many who do not meet the health standard.

This bad behavior was influenced also by the students' knowledge of good snacks. Knowledge is one of the factors that influence the selection of foods. Knowledge is the result of the idea that occurs after the individual performing the sensing of an object. Most people's knowledge gained through the senses of sight and hearing (Notoatmodjo, 2012).

In fact there are many students who do not have good knowledge about healthy snacks. Results of research on knowledge of healthy snacks to children of SDN Pekunden Semarang, revealed that only 24.7% of students who have a good knowledge (Ariandani, 2011). Results of research conducted by Agus and Budiman (2013) revealed that only 45.2% of students who have good knowledge of nutrition and snack food. Knowledge of individuals influenced several factors: education; information/media, social and cultural (Budiman and Riyanto, Agus (2013).

Students' knowledge can be obtained either internally or externally. Internal knowledge is derived from his own life experiences. External knowledge which is derived from the others so that the children's knowledge about nutrition increases (Solihin, 2005). On the basis of the need for education that is specifically focused on the selection of healthy food for school children. One effort that can be done is to improve nutrition and health education.

Health education is one form of intervention aimed at changing health behavior. Done in the form to invite and to increase public knowledge in order to carry out a healthy lifestyle (Notoatmodjo, 2012). Families, schools and communities to give effect to the knowledge, skills and attitudes of children (Lytle, et al., 2000 and Levinger, 2005).

In order for health education purpose is achieved then this needs to be supported with various devices. One of them using appropriate educational media. The process of giving health education requires an attractive media for influencing the understanding and changing behavior of target groups (Setiyowati, 2011).

In the course of Educational Communication and Information reveals that the print media is more effective to convey information and nutrition education. The print media is a medium that promotes static visual messages. Generally consist of a description of a number of words and images in the form of posters, leaflets, brochures, magazines, modules, and pocket books (Zulaekah, 2012).

"Smart with Your Foods" is one of the topics that have been developed print media researchers in the form of a card game that contains images and messages about food knowledge of healthy snacks in schools. The media contains material introduction food groups, food additive that is often used in snacks, components that must be considered in the label snack foods.

The game is carried out following types of games Picture Card that has been known previously by the students. But the message contained therein is replaced with the vital information they need to remember and are read aloud when they make the game. Each student gets a turn to read the information repeatedly to get a pair of cards that they read earlier. It is continuously performed until the cards run out and get a couple complete all the cards in accordance with the group.

On the basis of this background, this study aims to determine the increase knowledge of healthy food choices at the elementary school students through health education media "Smart with Your Foods".

## 2. Method

### 2.1 Research Method

The method used in this research is quasi experiment with non-equivalent control group pretest-posttest design. Research subjects are elementary school students. Respondents were divided into the test and control classes. In Shadis, Cook, and Campbell (2002), kind of quasi-experimental designs can be seen from the use of pretest and the use of the control group.

### 2.2 Research Design

This study uses a study design non-equivalent control group design also called models pre-test post-test control group design in one experimental group and one control group. Dantes (2012: 97) reveals that the design is very often used in educational research and research behavior (behavioral) others.

O1 x O2

O1 O2

O1 = Pretest experimental and control group

O2 = Posttests experimental and control group

X = Treatment with SWF media implementation  
on an experimental class

### 2.3 Population and Samples

The population in this study were students of SDN Isola. Samples to be used as research subjects taken two classes of Grade 4 by 2 class. With the number of each student as much as 35 and 37 people. Furthermore, students were grouped into experimental class and control class. Sampling was done by using purposive sampling cluster where the class is used as a research class is determined by certain considerations. Based on consideration of the school that the sampled classroom more conducive classroom environment quiet and adequate classrooms and have the same hours of lesson time is starting at 07.30 am.

### 2.4 Hypothesis

H0: Experiment = Control, meaning that there is no difference rerated increase student's knowledge of learning outcomes using the media SWYF with conventional learning.

H1: Experiments > Control, meaning that there are differences increased knowledge student about selection of food on the average student learning outcomes using SWYF media compared to conventional learning models.

Tests using parametric statistical tests, namely through the t-test with a standard error of 5%, when data showed normal distribution and homogeneous.

### 2.5 Instrument and Techniques of Data Collection

The instruments used in the form of a questionnaire to test techniques to determine the results of learning about healthy food choices. Instruments tested beforehand to determine validities and reliability. The researcher also reliability testing to determine the level of difficulty and the distinguishing power.

Experiments conducted in March 2016, with "Health Food Selection" subject. Before the experiment is performed a pretest beforehand in both classes (experimental class and control class). Furthermore, the learning is done by using the SWYF media the experimental class. While the control class is done without using the SWYF media. After the learning is done posttest in both classes.

### 2.6 Data analysis

The instrument analyzed to measure the validity, reliability, level of difficulty and quality of level differently. The reliability tests performed with Cronbach alpha formula. About the difficulty level is really an opportunity to answer the question on the level of certain capabilities that are usually expressed in the form of an index. The difficulty level of the index is generally expressed in terms of the proportion of the amount

of about 0.00 to 1.00 (Aiken 1994: 66). The greater the difficulty level of the index derived from the results of the count, meaning the easier about it.

Collected Data is processed to determine differences in learning outcomes in the treatment group and the control group. If the data showed normal distribution and homogeneous, then testing using parametric statistical tests, namely through the t-test with a 5% error level. Gain test was conducted to see the effectiveness of SWYF media at Sanitas Hygiene lessons.

### 3. Results and Discussion

The research instruments were tested this time in the form of multiple choice objective test consisting of 10 items with 5 possible answers, followed by 35 people. Test results validity of knowledge about healthy snacks election showed the validity coefficient of 0.74. These values indicate that the validity of questions that are in the middle criteria.

Results of the analysis showed that the coefficients of reliability test reliability of 0.81. These values indicate that the level of reliability problems are the criteria for "high". Difficulty level test analysis results obtained hardship index items amounted to 0.69 with the criteria of "moderate"

Then test the level of difficulty, obtained difficulty index of about 0.68 pretest so that it can be concluded that the criteria for the level of difficulty instruments of knowledge about food hygiene is "moderate". Further distinguishing quality analysis results from the instrument obtained a value of 0.69. These values indicate that the distinguishing quality of the items have quality distinguishing "good".

Normality test knowledge of healthy food selection shows that the normal distribution of data with a probability value electoral knowledge food healthy snacks selection are as follows:

- Score Pretest class Experiment = 0.215 > 0.05.
- Score Posttest class Experiment = 0.173 > 0.05.
- Score Pretest class Control = 0.021 > 0.05
- Score Posttest class Control = 0.176 > 0.05.

All data probability value is above 0:05 so we can say with normally distributed data.

Processing homogeneity tests were performed with SPSS 16 and obtained the significance of grades pre electoral knowledge test healthy food class experiments based on the variable value Pre Electoral Knowledge Test Healthy Food Grade Control of 0.601 > 0.05, meaning that the same variant of data variables.

The results of data retrieval from the value pretest and posttest in the experimental class is as follows.

Table 1. Distribution of the level of knowledge of the selection of healthy snacks on the respondents before and after health education with media SWYF

	Pre		Post	
	f	%	f	%
Good	2	6,7	21	70
Sufficient	9	30	9	30
Less	19	63,3	0	0
Total	30	100	30	100
average	53	100	83	100
stdv	12.114		10.34	

Based on data in Table 1 it can be seen students who have a good knowledge category only 6.7% experienced improvement after being given education about knowledge of healthy snack foods. The existence of new information on healthy snacks provides the foundation for the formation of new cognitive knowledge in the selection of healthy snacks (Ariandani, 2011).

Furthermore, the t test to determine distinguishing the learning outcomes in second grade after SWYF media given using the experimental class and without the use of SWYF media the control class, as listed in the table below.

Table 2. T test Result of Food healthy Snacks Selection Knowledge

	Class	T test		Conclusion
		t	t <sub>table</sub>	
Pre test	Experiment	0.915	2.113	H <sub>0</sub> : accept
	Control			
Posttest	Experiment	5.463	2.113	H <sub>0</sub> : rejected
	Control			

Based on table 2 known that pretest Food Healthy Snack Selection knowledge,  $t = 0.915 < t_{table} = 2,113$  can be concluded that there is no significant difference between the value pretest the experimental class and the control class pretest score. That means either the initial state students in the experimental class and control class before implemented SWYF media have the same capabilities. As for the post-test,  $t = 5.463 > t_{table} = 2113$  so that it can be concluded that there are significant differences between the experimental and control classes posttest. That means the state student experiment class and control class after the implementation of the SWYF media turned out to have different capabilities.

These results are similar to results of research on the effectiveness of health education media in the form of booklets in the Makamhaji village which indicates that there are differences in knowledge between before and after the health education of dental caries in respondents with media booklets and audiovisual media. (Agustin, Maria Irdawati & Endang Zulaicha Susilaningih, 2014). Similarly, research on the effects of health education through the medium of picture books that showed an increase of knowledge in media group picture books and leaflets (Jannah, Heru, Yuli, 2016).

Some functions especially print media based visual proposed by Levie and Lentz (1982) are: 1) The function of attention, which attract and direct attention to the students to concentrate on the content related to the meaning of the displayed image or text accompanying the subject matter; 2) affective function, seen from the enjoyment level of students when studying or reading a text display. Image or visual symbol can arouse emotions and attitudes student; 3) cognitive function, visual image or symbol can facilitate the achievement of the objectives to understand and remember the information or message contained in the image.

Table 3. Result of Gain of Food healthy Snacks Selection Knowledge

Class	Gain Value	Category
Experiment	0.89	good
Control	0.47	less

This research reveals the average score on the posttest experimental group increased to 89.47 with a value of N-gain = 0.89. Results N-gain knowledge kasil learn healthy food selection in a control class is 0:47. This shows that the media "Smart with Your Foods" effectively enhance students' knowledge about the selection of healthy snacks.

#### 4. Conclusion

The results of the pretest value t test revealed that there is no difference between the experimental class students and grade control prior to the implementation of learning in both classes. But the results of the analysis of the t test values occur posttest knowledge gaps in both classes after SWYF media applied the experimental class. Gain index results showed N-gain experimental classes that are in both categories compared with N-gain the control class. Thus it can be concluded that the use SWYF media effective in improving the selection of foods knowledge for Primary School Children.

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