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Knowledge and Actions Regarding Consumption of Instant Noodle in Elementary School Student Before and After the Provision of Educational Video

Novi Hardiyanti [1], Rina Maryanti [2], Verra Wulandary [3], Asep Rudi Irawan [4]*

[1]Departemen Pendidikan Teknologi Agroindustri, Universitas Pendidikan Indonesia, Indonesia
[2]Departemen Pendidikan Khusus, Universitas Pendidikan Indonesia, Indonesia
[3]Graduate school of International Development and Cooperation, Hiroshima University, Japan
[4]School of Human Sciences, University of Tsukuba, Japan
Correspondence: E-mail: maryanti.rina@upi.edu

ABSTRACTS

Instant noodles are very popular with people of all ages as a popular food for the reason that noodles are delicious, practical and filling, especially for children. Apart from being delicious, instant noodles are also easy to find anywhere. The purpose of this study was to determine the extent of knowledge and actions of elementary school students regarding instant noodles, as well as to increase students' knowledge of instant noodles through educational video media. To support the research, we used qualitative research methods to students in elementary schools with data collection techniques used, namely giving pre-test and post-test using google form. The results showed that the average pre-test score was 26.15% and the average post-test score of students was 52.25%, which means an increase of 26.1%. Hence, students' knowledge of instant noodles can be increased by providing material through video media provided through the Whatsapp application.

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1. INTRODUCTION

At this time, instant noodles have become a favorite food for many people. The World Instant Noodles Association (WINA), stated that globally as many as 100.1 billion servings of instant noodles were consumed in 2017 with the number of instant noodles consumed per day as many as 270 million servings. Indonesia itself ranks second after China in consuming instant noodles. Research conducted by United States scientists found dangerous health risks if you consume instant noodles 2-3 times a week. Dr. Shin, who led the study, said instant noodles can increase the risk of cardiometabolic syndromes such as heart disease, stroke and diabetes. However, this disease is the leading cause of death worldwide. "In addition to containing preservatives, instant noodles also contain a chemical called bisphenol A (BPA) which is used to package noodles in Styrofoam containers," said Shin in (Katmawati & Ulfah, 2016). Knowledge is the result of human sensing, or the result of someone knowing about an object through the senses he has (eyes, nose, ears and so on). Children's knowledge about the consumption of instant noodles is still very minimal, there are still many who do not know what the content in instant noodles is, how the deficiencies in instant noodles are, what are the consequences of frequent consumption of instant noodles. There are many kinds of learning media, one of which is learning media in the form of educational videos. Educational videos with a few additions of unique animations make it possible to be more liked by elementary school students compared to the use of other learning media such as reading books because of their more attractive shape.

From the research (Katmawati & Ulfah, 2016) it is stated that instant noodles have been consumed by most families, both from the ordinary and the upper class, most of whom are children. Another study conducted by (Ratnasari *et al.,* 2012) also revealed that most children consume instant noodles 2-3 times a week. With parents who give the reason that to cook instant noodles the way is practical, easy to cook and does not require a long time to cook. As in the study (Sarkim *et al.,* 2010) it was stated that the main reason for consuming instant noodles was because the presentation was easy and did not take long, and the price was very affordable. Instant noodles are also very often used as an alternative to deal with children who don't want to eat or who have difficulty eating. And it is also mentioned that there are (62.5%) people who consume instant noodles without adding other food ingredients as a complement such as vegetables, animal side dishes and vegetable side dishes (Sarkim *et al.,* 2010).

According to a nutritionist and dietitian, saying that consuming instant noodles every day is not recommended because of its incomplete nutritional content, even though it is filling. He suggested consuming instant noodles once a week. Also said to consume instant noodles a maximum of once a week and should be added with various vegetables, tomato pieces and eggs as protein. Currently there is research that discusses the description of knowledge, mother attitudes and habits of consuming instant noodles in kindergarten children, as well as research that discusses the description of students' knowledge and attitudes towards snacks before and after giving quartet card education to children (Wandasari, 2014).Elementary school age in the study, as well as research on the effect of instant noodles on the health of boarding children in the city of Padang and research on the description of the level of student knowledge about the dangers of consuming instant noodles at the Jakarta nursing academy (Ratnasari *et al.,* 2012).

But research on the consumption of instant noodles in elementary school students is still not found, so we are interested in conducting research on the description of knowledge and

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actions of elementary school students on instant noodles before and after being given an educational video about instant noodles.

2. THEORITICAL FRAMEWORK

2.1. Knowledge

Knowledge is the result of knowing someone after sensing an object which is influenced by the intensity of attention and perception of the object. Knowledge has several levels, namely: knowing, understanding, application, analysis, synthesis and evaluation. Action (practice). Practices or actions are carried out to manifest attitudes into actions under conditions that allow (Tindal *et al*., 1997).

2.2. Action

Action (practice). Practices or actions are carried out to manifest attitudes into actions under conditions that allow (Tindal *et al*., 1997). The levels of action include: perception, guided response, mechanism and adoption.

2.3. Instant noodles

Instant noodles are foods such as pasta with the main raw material being wheat flour, boiled in hot water and served according to taste (Sudarmiati & Hatta, 2015). According to the Indonesian National Standards Agency (SNI) (2012) instant noodles are products made from the main raw material of wheat flour with or without the addition of other food ingredients and permitted food additives, steamed, fried or dried, and cooked after cooking or brewing using boiling water or hot water in a short time along with the spices and or without the accessories contained in the packaging. According to a nutritionist and dietitian from the University of Sydney, Leona Victoria Djajadi, consuming instant noodles every day is not recommended because of its incomplete nutritional content even though it is filling. He suggested consuming instant noodles once a week. The same thing was also said by a health expert and lecturer at the Faculty of Medicine, Diponegoro University, Niken Puruhita, to consume instant noodles a maximum of once a week and should be added with various vegetables, tomato pieces and eggs as protein (Le *et al.,* 2007).

Instant noodles have not been recognized as a staple food because they have not met the nutritional needs of the body. Noodles are made from wheat flour with a large carbohydrate content, and contain little protein, vitamins, and minerals. Instant noodle nutrition can be fulfilled when added with vegetables and protein sources. The results of Juyeon Park's research (2011) state that consuming instant noodles can lead to excessive intake of energy, fat, and sodium but can also lead to increased intake of thiamine and riboflavin (Park, Juyeon *et al*., 2011).

2.4. Instant noodle ingredients

The process of making instant noodles requires a number of main ingredients and additional ingredients that have certain roles such as increasing volume, weight, improving quality, color and taste. The degree of mixing varies greatly according to consumer demand and economic calculations. Here are the ingredients for making noodles:

(i) Flour. Derived from ground wheat (Triticum vulgare). Its ability to form gluten when the noodles are moistened with water so that the noodles are not easily broken during printing and cooking is the specialty of this wheat flour among other cereals.

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(ii) Water. The water added is generally about 28-38% of the total mixture of ingredients used and is also used as a reaction medium between gluten and carbohydrates (will expand), dissolves salt, forms gluten rubbery properties, with a pH between 6-9.
(iii) Kitchen salt. Used to inhibit amylase and protease enzymes so that the pasta does not expand excessively and is not sticky, besides that it is also to strengthen the texture of noodles, give flavor, to bind water, and increase the flexibility and elasticity of noodles.
(iv) Egg. Used to create a dough that is tougher so it doesn't break easily and improves the protein quality of noodles
(v) Carboxymethyl Cellulose (CMC). Serves as a developer, affects the properties of dough, maintains tenderness during storage and improves water resistance.
(vi) Dye. Noodles usually use a yellow color (tartazine yellow) to form a distinctive color and look homogeneous.
(vii) Sodium Benzoate. Used as a preservative because it can kill microbes.
(viii) Peanut oil. It is used to prevent stickiness between the noodles and smoothen the texture of the noodles.
(ix) Acidity regulator. Used to make noodles last longer and more durable.
(x) Chicken seasoning. It is used to make the noodles more delicious by eating the taste of chicken broth in it (Katmawati & Ulfah, 2016).

There are about three or four components in a packet of instant noodles, namely noodles, spices, oil, and sometimes added dry vegetables. The spices contained in instaran noodles are made of salt, sugar, Monosodium Glutamate (MSG), vegetable protein hydrolyzate, flavorings (chicken, vegetable, oxtail soup, beef meatballs, chicken soup, chicken kalio, shrimp, rawon, and others), onion powder, garlic powder, pepper powder, chili powder, and dried scallions. The oil component is made from vegetable oil and shallots. Dried vegetables consist of fried onions, mushrooms, leeks, carrots, and others (Katmawati & Ulfah, 2016).

2.5. Instant noodle making process

The process of making instant noodles include:

(i) Stirring. Tapioca flour, wheat flour and other additives are mixed and stirred for 15 minutes in a mixer with a capacity of 125 kg or more, then a solution of egg and developer is added for certain types of dry noodles and this dough is stirred until it is cooked which is characterized by a shiny appearance, compact structure, elastic, smooth, not easy to fall apart soft and soft and not sticky. The added water is generally 28-38%. A good total stirring time is about 15-25 minutes. A good dough temperature is around 25-40˚C because the temperature of the dough can also be affected by the friction between the dough and the mixer.
(ii) Rolling. The cooked dough is dropped from the feeder into the roll press machine with the aim of smoothing the gluten fibers and making the dough into slabs or sheets that are brittle with a thickness of 1.5 cm, passed again with 5 pairs of cylinders of different thicknesses to form slabs. homogeneous, smooth, and unbroken and has a thickness of about 1.5 mm. The formation of a good slab is influenced by the heat generated by the engine.
(iii) Noodle printing. The function of this noodle slitter is to change the noodle sheet into wavy noodle strands which are then cut into noodle strands with a width of 1-2 mm and wavy arranged with a net steam machine.

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(iv) Early ripening. The noodles are then put into the oven using a conveyor belt to steam for 135 seconds. The heat used comes from steam with a pressure of 2.4 kg/cm2 which makes the noodles that come out are cooked, low in water content, and solid. When the steaming occurs, starch gelatinization and gluten coagulation occur so that the bond becomes strong and hard, the noodles do not absorb too much oil and are soft, and the noodles become chewy.

(v) Initial cut. The noodles are temporarily cooled with the help of a fan to remove the remaining moisture that is still attached to the surface of the noodles. Next, the noodles are cut with a rotating noodle cutter equipped with a hoe or a spoon that functions to fold the noodles into two folds, then enter the distributor to be printed with a length of about 12 cm and a weight of 80 grams, at a certain time these noodle pieces are weighed to control the weight.

(vi) Frying. After being weighed, the noodles are then transported using a conveyor to the frying machine. In this frying process, cooking oil at a temperature of 150ºC is used to make the water evaporate quickly and form fine pores that can accelerate the rehydration process for 109 seconds so that the noodles become dry and dense and the water content decreases.

(vii) Cooling. The fried noodles are cooled using a fan in a cooling machine which works by blowing air towards the hot noodles moving through the conveyor and causing the oil to harden that is absorbed and sticks to the noodles so that the noodles become hard. If the remaining moisture condenses and sticks to the surface of the noodles, it can cause mold to grow.

(viii) Packaging. Before being packaged, the noodles are sorted or only neat and whole noodles are selected. In addition, noodles are packaged to protect the product and extend the shelf life of the product (Katmawati & Ulfah, 2016).

2.6. Educational Video Learning Media

Learning media is one of the components in the learning process that is indispensable, given that the position of the media is not just a teaching aid, but is an integral part of the learning process. Learning media in addition to being able to replace some of the teacher's duties as presenters of material, media also has unique potentials that can help students learn (Tindal *et al*., 1997).

Audio-visual media is media that has sound and image elements. This type of media has better capabilities because it includes sound and images (Tindal *et al*., 1997). Audio-visual media is a medium used to convey learning messages. In audio-visual media, there are two elements that unite, namely audio and visual. The existence of the audio element allows students to receive learning messages through hearing, while the visual element allows the creation of learning messages through the form of visualization. Video as an audio-visual medium that displays motion is increasingly popular in our society. The message presented can be factual or fictitious, can be informative, educative or instructional. Most movie assignments can be replaced by videos. But that doesn't mean that video will take the place of film. Video media is one type of audio-visual media, in addition to films that are widely developed for learning purposes. According in (Tindal *et al*., 1997), video is a suitable medium for various kinds of learning, such as classes, small groups, even one student alone. Therefore, videos with a duration of only a few minutes are able to provide more flexibility for teachers

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and can direct learning directly to the needs of students. Videos can also be used for almost all topics, types of learning, and every domain of cognitive, affective, psychomotor, and interpersonal (Tindal *et al.*, 1997).

3. METHODS

This research was conducted in elementary school. The type of research used is quantitative research using experimental methods. The research design was a pre-post one group, namely a group of fifth grade students who were given an educational video about instant noodles. The data collection technique used was giving pre-test and post-test using google form to describe students' knowledge and actions about instant noodle consumption. The sample in this study were fifth grade elementary school students, as many as 11 students.

4. RESULTS AND DISCUSSION

4.1. Demographics

This research was conducted in elementary schools. The first stage in this study was to ask for permission to carry out Community Service Program activities in schools. After being given permission, we conducted a survey of students at the school with the teacher. Then the researcher chose a sample from a population of 11 students with details of 3 male students and 8 female students. As many as 6 out of 11 students have good communication and concentration skills, while the remaining 4 students look not very active, a little quiet, but have better knowledge than other students.

4.2. Phenomena in the learning process

The first stage in the learning carried out is to see how active students are in learning. Some students look very active and interested in the learning process. After that, pre-test questions were given to find out how students' knowledge about instant noodles was. Then it can be seen how the level of students' understanding of instant noodle knowledge. After that, the material is given through educational videos that are shared via Whatsapp. Some students looked enthusiastic watching the video. Then an evaluation was given using post-test questions to see the students' knowledge abilities after being given material through video.

4.3. Pre-test and post-test results

The learning process in elementary school is done online. The media used in the learning process is in the form of educational videos through the Whatsapp application. This video media is an interesting thing, because in addition to displaying moving images, the messages presented can also be factual or fictitious, can be informative, educative or instructional. We also distributed online questionnaires through google forms which were distributed through the Whatsapp application to find out whether there was an increase in students' knowledge about instant noodles through educational video media.

Table 1 contains the questions in the pre-test and post-test. This questionnaire was distributed to 11 grade 5 elementary school students, by filling out a questionnaire containing 8 questions. After that, we will provide additional material through several posters containing material about instant noodles. After being given the material, we will give another questionnaire in the form of a post-test to students through the Whatsapp application.

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The results show several discussions points:

(i) For question number 1 the results increase by 45.5% when the material about instant noodles is given.

(ii) For question number 2 the results increased by 36.3% when a video about the process of making instant noodles was given.

(iii) For question number 3 the results increased by 54.5% when the material on the nutritional content of instant noodles was given.

(iv) For question number 4 the results increased by 63.6% when understanding the dangers of instant noodles was given.

(v) For question number 5 the result slightly increased by 27.2% when the material about instant noodles was given.

(vi) For question number 6 the result is at most increased by 81.8% when an understanding of the dangers of instant noodles is given.

(vii) For question number 7 the result is quite increased by 9.1% when an understanding of the dangers of instant noodles is given.

(viii) For question number 8 the results are quite increased by 54.5% when a video on tips for processing instant noodles is given.

Table 1. Students pre-test and post-test result.

Number	Question	*Pre-Test*	*Post-Test*	*Gain*
1	Do you know what instant noodles are made of?	36.4%	81.8%	45.4%
2	Do you know how the process of making instant noodles?	18.2%	54.5%	36.3%
3	Do you know what is contained in instant noodles?	9.1%	63.6%	54.5%
4	Do you think instant noodles are a healthy food?	27.3%	90.9%	63.6%
5	Do you know how long instant noodles can be digested by the body?	45.5%	72.7%	27.2%
6	Do you think it's okay to eat instant noodles every day?	9.1%	90.9%	81.8%
7	Do you know the dangers of frequent consumption of instant noodles	63.6%	72.7%	9.1%
8	Do you know how to increase nutritional intake in serving instant noodles?	0%	54.5%	54.5%

From the results of the pre-test of elementary school students regarding knowledge of instant noodles, it was revealed that 9.1% of elementary school students did not know the content of instant noodles and as many as 36.4% did not know the dangers of consuming instant noodles. And after students were given material in the form of videos and posters about instant noodle knowledge, students' knowledge about the content of instant noodles increased by 81.8% and students' knowledge about the dangers of consuming instant noodles increased by 9.1%. Based on these results, there was an increase in the knowledge of most students after being given video material about instant noodles. This is in line with the fact that the use of all types of multimedia currently used, digital video can provide an interesting learning environment for students and increase students' knowledge (Tindal *et al.*, 1997).

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5. CONCLUSION

The conclusion of this study is that there are still many elementary school students who do not know about the content of instant noodles and the dangers of consuming instant noodles. The results showed that the average pre-test score of students was 26.15% and the average post-test score of students was 52.25% so the difference was 26.1%. Therefore, knowledge about instant noodles can be increased by delivering material through video media and through the Whatsapp group application, as well as giving assignments through google forms which are carried out online to carry out this distance learning program.

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