

Development of Flash Player Media to Improve Environmental Health Knowledge of Elementary School Students in Semarang

1st Sofwan Indarjo
*Department of Public Health
 Universitas Negeri Semarang
 Semarang, Indonesia
 sofwan_indarjo@yahoo.com*

2nd Efa Nugroho
*Department of Public Health
 Universitas Negeri Semarang
 Semarang, Indonesia
 efa.nugroho@mail.unnes.ac.id*

3rd Gusti Sesanti Sandra Nastiti
*Department of Public Health
 Universitas Negeri Semarang
 Semarang, Indonesia
 sandranastiti97@gmail.com*

4th Farah Azizah Mukti
*Department of Public Health
 Universitas Negeri Semarang
 Semarang, Indonesia
 farahazizah@gmail.com*

5th Maudy Agustina
*Department of Public Health
 Universitas Negeri Semarang
 Semarang, Indonesia
 maudy_agustina@yahoo.com*

Abstract — The role of students in the meaning of the attitude, behavior, understanding, and participation in environmental problems needs to be fostered and developed, because students have an important role in creating a healthy environment. Understanding of student behavior is the first beginning to create a clean environment, because with the presence of science there will be a feeling, awareness, caring, even feeling will want to create a clean and comfortable environment. The purpose of this study was to develop an environmental health education multimedia for elementary school students in the city of Semarang. This research used Research and Development design. The population in this study were all public elementary schools in the city of Semarang. For the study sample were 8 elementary schools in the city of Semarang. The intervention and control groups were selected for class 1, class 2, and class 3 students from 4 elementary schools which were considered to represent the characteristics of elementary school students in Semarang City. Data analysis using univariate, bivariate, and multivariate. From the results of the study data obtained 77% of class 1 students, 25% of class 2 students, and 20% of class 3 students had low knowledge regarding environmental health. Data also shows that 48% of class 1 students, 54% of class 2 students, and 18% of class 3 students have a low attitude. For the results of the practice measurement data obtained 36% of class 1 students, 14% of class 2 students, and 49% of class 3 students had bad practice. From these results it is necessary to develop a multimedia environmental health education to improve the knowledge, attitudes, and practices of elementary school students.

Keywords -- *Development, Multimedia, Education, Environmental Health, Elementary School.*

I. INTRODUCTION

The Ministry of National Education, the Central Curriculum Research and Development Agency states that

there are eighteen values of cultural education and national character that need to be developed in school-age children [2]. 2013 curriculum is a competency-based curriculum. In it is formulated in an integrated manner, knowledge, and skills competencies that must be mastered by students. Also formulated the learning process and assessment needed by students to achieve the desired competencies.

The eighteen character values are religious, honest, tolerance, discipline, hard work, creative, independent, democratic, curiosity, communicative spirit, peace of mind, love to read, care for the environment, social care, and responsibility. Of the eighteen character values, one of the character values that needs to be strengthened in children is the character of environmental care. The number of school age is quite large, 30% of the total population of Indonesia is a golden period to instill Clean and Healthy Life Behavior (PHBS) so that school children have the potential as agents of change to promote PHBS, both within the school, family and community. Some of the activities of students in implementing PHBS in schools include snacks at school stalls / canteens because they are more secure; wash hands with clean water and soap; use latrines in schools and maintain the cleanliness of latrines; participate in sports and physical activities so as to improve students' fitness and health; eradicate mosquito larvae at school regularly; do not smoke, monitor the growth of students through measurements of BB and TB; and dispose of garbage in its place.

The quality of the environment is currently decreasing. This is because human behavior does not protect the environment. A simple example of behavior that damages the environment is littering. In fact, many appeals not to dispose of litter have been installed in various places. Waste that accumulates can

damage the environment. In addition to causing unpleasant odors, garbage piles can be interesting places for animals such as flies and cockroaches. Flies and cockroaches can spread bacteria that can cause disease to humans. According to Suranto and Kusrahmadi, environmental damage due to human activities is generally caused by ignorance of the community on the consequences of their actions, insistence on living needs, lack of knowledge about ecosystems, low awareness of environmental sustainability, and lack of environmental laws [5]. One way to overcome this problem is to instill character values of environmental care to children.

The character value of environmental care is an attitude and action that always strives to maintain and preserve the surrounding environment [6]. The character of environmental care must be formed in each individual so that individuals can maintain and preserve the environment [7]. The attitude of caring for the environment can be started from yourself through simple actions such as throwing garbage in its place. Dispose of garbage in its place must be done because the result of littering can damage the environment and disturb health. Dispose of garbage in its place is actually easy to do, but it becomes difficult because it has become a habit of the community. The behavior of littering must be stopped. A thing that often happens and is considered a thing that is inherited from generation to generation will build a new mindset for future generations. They will adopt a pattern of environmental damage and make it more severe because they get an example from their parents' generation [4]. Character care for the environment must begin at an early age. According to Rifa'I, et al (2009: 68), elementary school age is a time for children who are expected to be able to obtain the basics of knowledge to successfully adjust to adult life and gain certain interests. Elisabeth B. Hurlock suggests that elementary school age is a critical period in encouraging achievement, a time when children form habits to achieve success, not success, or very successful [1]. Once formed, the habit of working below, above or according to ability tends to settle into adulthood.

This is in accordance with the recommendations of the Ministry of National Education that the development of national culture and character can be integrated into subjects, self-development, and school culture [2]. Learning materials related to the values of each subject need to be developed, made explicit, and related to the context of everyday life. Giving the basic foundation at the earliest stage has a huge effect on the development of students in the future. Learning activities can run optimally if students are in good physical and spiritual condition. Health is something that is very important and very valuable in life, health is a component that strongly supports most human activities, but to achieve healthy conditions both physically and spiritually, then there must be concrete steps to achieve it

Kemendikbud said the results of a preliminary study of the syllabus and lesson plans for all subjects, the character values of environmental health care can be integrated into subjects such as Physical and Sport Education (Penjasorkes). Integration of integrative thematic learning is carried out in two

ways, namely the integration of attitudes, skills, and knowledge in the learning process and the integration of various related basic concepts. The theme of knitting the meaning of various basic concepts so that students do not learn the basic concepts partially. Thus, learning provides students with a full meaning as reflected in the various themes available.

In integrative thematic learning, the chosen theme relates to nature and human life. For classes I, II, and III, both of them provide substantial meanings for PPKn subjects, Indonesian Language, Mathematics, Arts-Culture and Craft, as well as Physical Education, Sports and Health. Health problems have very complex dimensions, ranging from knowledge, understanding, circumstances to student behavior in life. The surrounding environment can affect the health condition of its inhabitants, the interaction between humans and their environment is an important component of public health. Environmental health is essentially an optimum environmental condition or condition so that it has a positive effect on the realization of optimum health status as well as.

The role of students in the meaning of the attitude, behavior, understanding and participation in environmental problems needs to be fostered and developed, because students have an important role in creating a healthy environment. Understanding of student behavior is the first beginning to create a clean environment, because with the presence of science there will be a feeling, awareness, caring, even feeling will want to create a clean and comfortable environment. Student science is very concerned with the personality of the students themselves and all students to be able to support the personality in the classroom and outside the classroom.

As mentioned in the results of research released by Hofstetter Computer Technology Research that a person only gets 20% of what is seen and 30% of those heard. While through multimedia, someone will get 50% of what is seen and heard. Someone will get 80% of what is seen, heard, and interacted at the same time. For that multimedia must be designed as attractive as possible, interactive, and usable so that it can truly teach users.

Health cannot be separated from environmental conditions. Teaching and learning activities will be disrupted if you are in an unhealthy environment. On the other hand, in a clean and comfortable environment will support the smooth implementation of teaching and learning activities. Improving the quality of education is one concrete element that is very important in an effort to improve the quality of human resources. In line with that, the most important thing to note is the problem of learning achievement. Multimedia also provides opportunities for educators to develop learning techniques to produce maximum results. Likewise for students, with multimedia they are expected to be easier to determine with what and how students can absorb information quickly and efficiently. The source of information is no longer focused on the text of the book solely but wider than that. The ability of multimedia technology that is getting better and developing will add convenience in gaining student knowledge. What is

the effectiveness of the development of multimedia environmental health education on the knowledge, attitudes and practices of elementary school students in grade 1-3 about environmental health in Semarang?

II. METHODS

Research and development – R & D – is the process by which a company works to obtain new knowledge that it might use to create new technology, products, services, or systems that it will either use or sell. The goal most often is to add to the company’s bottom line. R & D is a process used to develop and validate educational products. The steps in the R & D cycle, which were found in the settings where it would be used eventually, and revising it to the deficiencies found in the field-testing stage. In more rigorous programs of R & D, this cycle until the field test shows that the product meets its behaviorally defined objectives [3].

This study examines the development of learning models Developing MULTIMEDIA learning models as Learning student awareness of self and environmental health in elementary school students. The design of this study can be seen in the following figure:

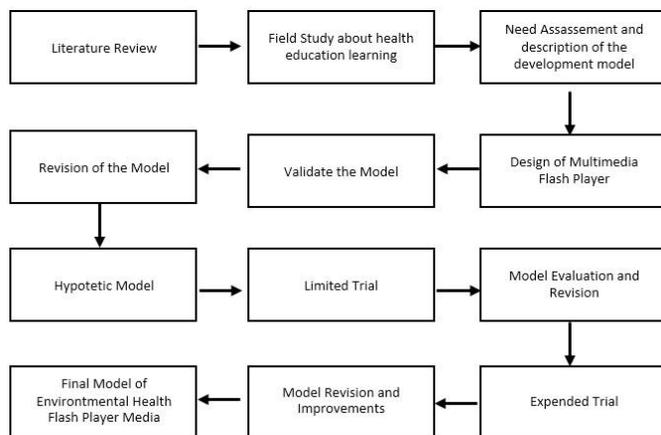


Figure 1. Design of RnD study

The quote can be interpreted that the R and D research design begins with a needs analysis and evaluates the resulting product to meet the same quality, and standard. chosen this method because it relates to the general goal of developing the multimedia learning model as Learning student awareness of self and environmental health in elementary school students. This study provides a form of intervention in a selected group and measures markers with pretest and after intervention is applied in a certain period of time. In this study the intervals of interventions used were six (6) months, taking into account the results of research on the development of learning outside the classroom with school health education.

The sample size used in the research and development stages starts from potential data collection and problems in 16 schools representing all sub-districts in Semarang City, 8 school information collection, 4 school design validation, limited testing 4 schools, 4 primary school field tests, test try

out 4 operational schools and 4 control schools divided into 4 regions, namely North, South, East and West Semarang.

Sources of data in this study include primary data and secondary data. Primary data is obtained through questionnaires. The quantitative data taken is the knowledge of grade 1, 2, and 3 students before and after the intervention is given. The components of environmental health knowledge measured are based on thematic material that has been determined by the Ministry of Education and Culture. The secondary data is obtained through document review related to the focus of the research.

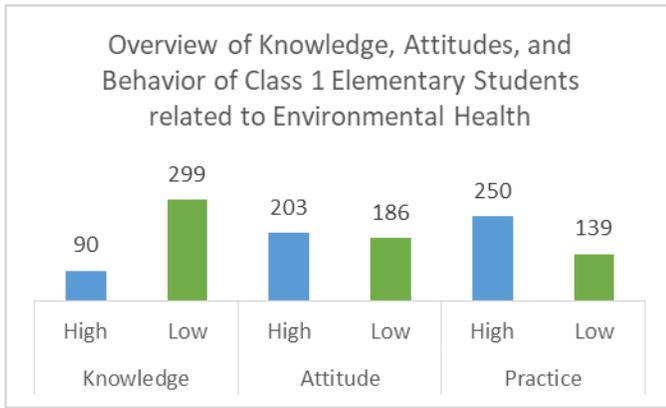
Before collecting data, the researcher first: (1) manages permits to the relevant parties (2) prepares research instruments, (3) recruits enumerators, (4) trains enumerators, (5) tests the validity and reliability of instruments. Data collection is done by enumerators by using a structured questionnaire that has fulfilled the requirements for validity and reliability. Before the respondent fills out the questionnaire, the researcher and / or enumerator first provide an explanation regarding how to fill out the questionnaire.

The first data collection is related to secondary data which includes school data consisting of school types, status, student data, teacher data and education staff, school health related programs from related institutions such as the Semarang City Education Agency. The first data collection is related to secondary data in accordance with the instruments that have been adjusted to the needs that include potential and problems, information gathering, design validation, limited trials, main field tests, and operational field trials.

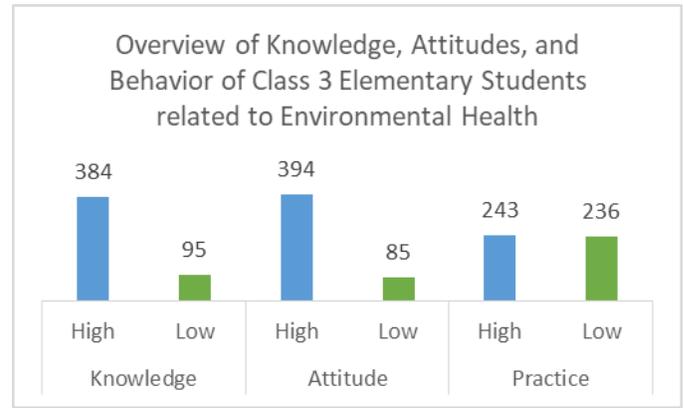
III. RESULT AND DISCUSSION

The researcher conducted a need assessment activity in 16 elementary schools in the city of Semarang. Elementary school was chosen using cluster sampling so that it was selected SD Peterongan, Sarirejo Kartini Elementary School, Polaman Elementary School, Wates 01 Elementary School, Krapyak Elementary School, Sekayu Elementary School, Ngijo 02 Elementary School, Purwosari 01 Elementary School, Jomblang 02 Elementary School, SD Sampangan 02, SD Tugurejo, SD Tugurejo, SD Tugurejo, SD Tugurejo, SD Banyumanik 01 SD Pandenlamper, SD Sambiroto 01, SD Pedurungan Kidul 04, SD Genuksari 01 as a place for base line data collection. In this need assessment activity, researchers want to know the description of knowledge, attitudes, and behavior of elementary school students before being given an intervention. The number of students who were used as the study sample were 389 class 1 students, 486 class 2 students, and 479 class 3 students from 16 schools.

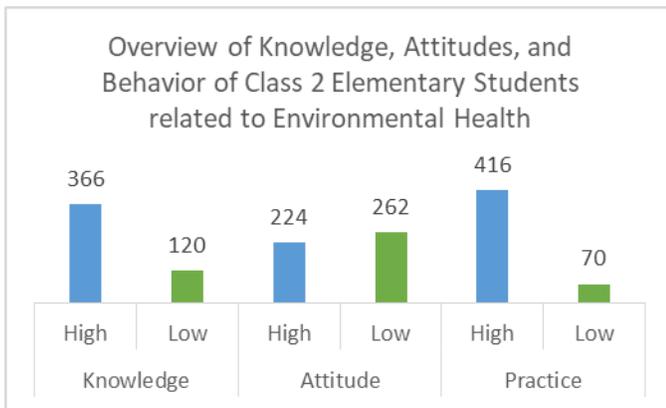
The results of the descriptive analysis of the knowledge, attitudes, and practices of class 1 students regarding environmental health can be seen in the following graph:



From the graph it can be seen that the level of knowledge of class 1 students related to environmental health 23% at a high and 77% at a low level. The attitude of class 1 students related to environmental health 52% at high levels and 48% at low levels. For the practice of class 1 students related to environmental health 64% at a high level and 36% at a low level.



From the graph it can be seen that the level of knowledge of class 3 students related to environmental health 80% at a high and 20% at a low level. The attitude of class 3 students related to environmental health 82% at high levels and 18% at low levels. For the practice of class 3 students related to environmental health 51% at a high level and 49% at a low level.



From the graph it can be seen that the level of knowledge of class 2 students related to environmental health 75% at a high and 25% at a low level. The attitude of class 2 students related to environmental health 46% at high levels and 54% at low levels. For the practice of class 2 students related to environmental health 86% at a high level and 14% at a low level.

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