

Science In Everyday Life To Build Science Literacy

Friska Octavia Rosa, Mundilarto, Insih Wilujeng, Anggraeni M. Sulistyani

Abstract: Science exists in everyday life, as a habit, behavior, belief, technology, and everything close to life. Reviewing everyday life and relating to science learning will give importance to the learning process because it provides meaningful value to the learners. It is able to strengthen the application of learned concepts. This study used a sample of prospective students in the 5th semester to analyze competencies in the curriculum, analyze concepts and determine the things in everyday life that use the concept. The results of the research showed that the ability is very good in analyzing the competence and good ability to determine aspects and themes. To build awareness of science literacy in teachers, it is necessary to make training materials based on daily life as stock or basic since the time of the pre-service teachers.

Index Terms: Science, Literacy, Science in Everyday Life

1. INTRODUCTION

Natural science is one of the subjects that had been given to the learner since elementary school. Learning about science will be closely connected with daily life (Setiawan, et.al.). So in the learning process is very important to make meaningful learning and give value for learners. At the elementary school level, learners have been introduced to science through the surrounding environment. From the things that are often done, heard, and seen, teachers should be able to relate to science learning. Many people do not know, that in daily life that was done much involved the concepts of science. There is a correlation between science and real life learning of learners (Sugiono & Purwastuti, 2017; Dewi, Poedjiastoeti & Prahani, 2017; Paul, 1997). This is what should be considered by prospective elementary school teachers. Where learning science will be more fun and interesting for learners if it is directly related to what they find or do in everyday life. Learning will be like the real situation so that it will give meaningfulness to the learners themselves.

An occurred education in Indonesia is formal education where education has been designed in a curriculum. The curriculum has been structured in a systematic and clear design of learning that must be done with the purpose of education. The existence of curriculum in education of Indonesia is very central. Because the main guidelines of the educational process are systematically arranged in the curriculum, so the socialization of the curriculum is very important, because to unite the perceptions and goals that will be done later on the learners. As an main weapon in the field, the role of teachers is very central, teachers interact directly with learners. The role of a teacher is demanded being professionals, not just as a knowledge transfer but also as a good designer for the learning process and achieve the educational goals as contained in the curriculum. Requisition of 2013 curriculum, the ongoing curriculum in Indonesia, is a meaningful learning and value for learners. This is a challenge for teachers in the

learning process. With the standards described in the curriculum, a teacher must be able to design meaningful learning activities. The first step to do is to assess the competencies that exist in the curriculum. Specifying the concepts that include the competencies that become the ultimate goal of the educational process. The situation in the field, most of the teachers still principled that the most important thing is to complete the delivery of material according to the curriculum, regardless of how meaningful obtained later by learners. Many learners after completing a class of science learning about a material, do not understand what concept has been learned. So when the concept is encountered in daily life, they do not understand that there is an application of science concept. This should be re-awakened for teachers, especially candidate of teacher who will directly jump into the field to interact directly with the learners. These candidate of teachers must be guided and accustomed to science literacy in daily life. A science teacher should be able to provide meaningful value to the learners. Learning not only stops the face-to-face process between teachers and learners in the classroom, but sustains on real daily life. Teachers should familiarize the learning with case study to find out the application of the concept of a material, not by providing information that will be a memorization for learners. Other supporting factors in the learning process are the source of learning. Traditional learning makes teachers as the only source of learning. But with a variety of curricula changes and educational outlook, now learning must be centered on learners. Learning resources can be interpreted as anything that can be used and facilitated in the learning process. The results of the study (Yeliz, 2016) revealed that the demands of a teacher include the science class has a laboratory. This reinforces that science must be taught in real conditions indeed. When learning is centered on learners, then a good teacher should be able to design a learning companion for learners. One of them is a textbook that can help students learn independently after meeting in school. Teachers should be able to innovate in developing teaching materials or learning resources. Utilization of learning resources need to be more varied so that the learning process will be more meaningful for learners (Faizah, 2012). By utilizing the environment in everyday life, it is also an interesting topic to be reviewed again. This study will try to examine the concept of science in daily life that can be explained scientifically with the concept of science.

- Friska Octavia Rosa, Yogyakarta State University, friskaoctaviarosa.2017@student.uny.ac.id
- Anggraeni M. Sulistyani, STKIP Majenang, amashinta@gmail.com
- Mundilarto, Yogyakarta State University, mundilarto@uny.ac.id
- Insih Wilujeng, Yogyakarta State University, insih@uny.ac.id

2 METHOD

Detailed This research was conducted on prospective elementary school teachers at STKIP Majenang where the 5th semester students who attended the integrated thematic learning courses were 23 candidates. This research applied descriptive analysis method. They analyzed things in daily life related to science. The process of analysis was done by 3 methods, namely observation, interview and literature review. The results of the analysis is used to develop textbooks. In this study also used a questionnaire that seen the response of students after the lecturing of thematic learning integrated in the daily life with the relationship of science.

3 FINDING AND DISCUSSION

The first step of data collection in this research was observation, interview and literature review by students about science in daily life. At this stage, the data obtained in the form of students' ability to analyze the competence of science learning that occurs in daily life. In table 1 presented data on mapping the ability of students in analyzing the interrelation of the concept of science in daily life.

Table 1. Students' Ability to Analyze the Concepts of Science in Everyday Life

Aspect	Category
Determine the concepts in the basic competencies that exist in the curriculum	Very Good
Determining things in daily life related to science concept	Good
Determining integrated theme for each competence	Good

good category. These results certainly provide a good effect on other aspects. One of the most important aspects of teacher achievement is to determine the right topic in a way that can arouse the curiosity of learners (Erdal, et.al, 2016). How the learner will be taken is planned from the outset by the teacher before determining the topic or theme. Then on the aspect of determining the things in everyday life related to the concept of science is in the good category. In this situation students, still in the good category where they can analyze the concept of science that exist in daily life, but only limited activities that are often used as examples in learning activities or general and not specific to the activities that exist around them. Whereas in this aspect it is hoped they can identify the things that are often encountered in the surrounding start from the smallest things that can be explained by the concepts of science. In prospective teachers, thinking skills should be developed (Orhan & Yasemin, 2016). Identification at this stage is done not only through observation, but also interviews and literature studies for data obtained more valid. The third aspect is the ability of students to determine the theme of integration in each competence and can be linked later with events in daily life. Understanding the competencies to be conveyed is very important for prospective teachers, as it will determine the theme to be conveyed to learners and stimulate their curiosity from the beginning of the theme (Erdal et.al., 2016; Pauline, 2017).

At this stage, students were made in groups of 5 to 6 people. They began to search for themes that fit the various things in daily life. The theme was a composition of several words that can represent things in daily life related to science theory. The selection of words for the theme in this section was made in a popular non-formal or scientific language, because at the end

Table 2. The result of identification of themes and things in daily life

Theme	Aspect in Daily Life
Myth and Folklore	a. Legenda pelangi dan bidadari
	b. Hilangnya Bulan & Matahari oleh Batara Kala
	c. Mantra Penangkal Petir
	d. "Ubo Rampe" Si Pawang Petir
	e. Diantara Senja
	f. Sebuah Harapan pada Bintang Jatuh
	g. Sang Naga dan Gempa Bumi
Traditional games	a. Egrang
	b. Gasing
	c. Gundu
	d. Jungkat-Jungkit
	e. Layang-layang
	f. Yoyo-Yoyo
Science in our surrounding	a. Mengapa Pisau Dibuak Tipis?
	b. Mengapa nyala Api Memiliki Warna yang Berbeda-Beda?
	c. Mengapa Langit Berwarna Biru?
	d. Mengapa Bintang berkelap-kelip?
	e. Jalan Berkelok di Pegunungan
	f. Cermin di ATM yang Terabaikan
Science in movie and game online	a. Stand by Me
	b. Angry Bird

of this stage a popular scientific textbook will be created as the final output. The results of the identification can be seen in table 2. At this stage, students were made in groups of 5 to 6 people. They began to search for themes that fit the various things in daily life. The theme was a composition of several words that can represent things in daily life related to science theory. The selection of words for the theme in this section was made in a popular non-formal or scientific language, because at the end of this stage a popular scientific textbook will be created as the final output. The results of the identification can be seen in table 2. Upon completion of this stage, students undertaken product design in the form of a popular scientific textbook based on the theme presented in Table 2. Each group created a theme with sub topic they had selected and described in table 2. Because this textbook was scientifically popular, the language to be used was not a difficult scientific language but used a language that is light and easy to understand by the laity to science. After the product design was completed, then proceed with the development. Where for 3 meetings each group reported the progress of the book made. This was one of the validation stages with a friend and scholar, that is the lecturer of course lecturer. Once the book was finished it put together into a

popular scientific textbook. After completing the popular science textbook with the theme of science in everyday life, students were given a questionnaire response to the assignment of courses of integrated thematic learning that has been done. The results of the questionnaire can be seen in table 3. Based on table 3, it can be seen that most students agree that science is closely related to everyday life. From cultural things like myths, folklore. It turns out that such things can also be explained simply using the concepts of science. In addition, traditional game, events in the surrounding environment that often occur but without realizing these activities contain the concept of science. Daily life gives many opportunities to teachers to make contextual learning so as to provide meaningful value to learners. All students also agree that the first step to the concept is to examine the competence of the curriculum. Identifying things in daily life is one way that not only learners are required to "science literate" but also teachers, so this is very important for prospective teachers. Identification is done not solely by observation, but also conducting interviews with local residents, such as about myths and folklore, many myths circulating and trusted by certain groups of people. So it is necessary to check through interviews and strengthening and review through literature studies. This research is not only to produce output in the form of popular science textbook about science in daily life, but also prepare the prospective teachers to understand the environment as a source of learning. Prospective teachers are required to be creative in designing a contextual learning resource and giving meaning to learners. The 21st century science learning school is not just a place to transfer the knowledge that teachers have to their learners, but it also demands for more active learners, develops creativity, and being meaningful. Learning with daily life-based will greatly help learners receive materials and concepts of science easily. In addition, as well as an introduction to the local cultures that become the nation's assets. Like myths, folklore, traditional games are now beginning to disappear among children and adolescents. Where in the present time, gadgets and technology have dominated. The results of this study are expected to give contribution to the preservation of local culture and used by many people in addition to teachers.

Table 3. Students' Response after Integrated Thematic Learning Course Doing Science Concept Learning in Daily Life

Statement	Number of Answering Participants	
	Agree	Disagree
Reviewing competencies in the curriculum is useful for deepening the concepts of science	23	-
The study of competence in the curriculum does not help in determining the concept of science to be delivered	-	23
The theme of learning will be easier to determine if lifted from everyday life	23	-
Submission of material needs to be linked to daily life to gain meaningfulness	19	4
Daily life is used as a source of learning	20	3

between reality and learned theories, will be more easily stored in the memory of learners.

4 CONCLUSION

Based on the previous elaboration, it can be concluded that teachers candidate of 5th semester in STKIP Majenang have good ability to analyzing the concept in curriculum competency and have good ability to determine science concept in daily life and determine learning theme.

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