ANALYSIS OF TEACHER'S LEARNING DESIGN AND ATTITUDES TOWARDS ENVIRONMENTAL LITERACY

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Abstract - This research aims to analyze the learning design profile used by science teachers and explore teachers' attitude towards environmental literacy. The type of this research is descriptive research. The subject was comprised of 35 teachers from several junior high schools in South Sulawesi, Indonesia. The sampling technique was cluster random sampling. Instruments used is an analysis sheet of environmental literacy components as well as problems adapted from Middle Schools Environment Literacy Survey/ Instrument (MSELS/ I) and teacher's lesson plan draft. The result showed that generally teachers' learning designs have contained the aspect of the environmental literacy. In addition, teachers had good attitudes towards environmental literacy.

Index Terms - Attitudes, environmental literacy. Learning design,

I. INTRODUCTION

The process of learning in the 21st century is very important to emphasize knowledge about environmental issues to students, because the century is synonymous with technological developments. The rapid development of technology must be balanced with the knowledge of the environment, because the amount of environmental damage along with these developments. Technological developments in question is the development of technology that is not environmentally friendly such as air pollution by factory / industrial waste, vehicle fumes and burning waste. Causes of environmental damage and pollution are: First, human activities, for example, excavation of sand or rocks that contain the risk of landslides and logging trees without replanting. Second, natural factors such as lightning, heavy rain, tornadoes, and dry season [1].Environmental problem in Indonesia poses a poblem that must be well considered, as this issue could disturb the balance of ecosystem and lead to climate change.

Based on those problems, it is necessary to be given an understanding about the environment. When students understand it, they would reluctant to damage the environment. This is supported by the research [2], had hold the researh in Finland, the result shows that students' environmental knowledge affects positively on attitude towards the environment. The result illustrates that environmental learning could cause an individual's positive influence on the environment [3]. The same result is also obtained students who are given several environmental education activities could enhance their motivation on environmental issues so that by giving early environmental understanding, students' environmental literacy would be better[4]. This is accordance with the result showed that university students' environment literacy level is higher than Middle School and High School students' score[5]. One of the causes is influenced by education level as well as life experiences about behaviour and attitude toward the environment. So when it is taught earlier, knowledge and experience about the environment would be in great quantities.

Environmental literacy aims to instill care behaviour on the environment in daily life so that it could be prepared by pressure groups which have positive attitude and behaviour on the environment, since with it, students could act more wisely to the environment. Environmental literacy components consist of knowledge, cognitive skill, attitude and behavior [6].

The Indonesian government is intensively launching environmental literacy in learning. Students are required to be students who are literate on the environment. But what matters is the extent to which environmental literacy attitudes teachers possess can serve as examples for students. Teachers are role models for students so that if they want to apply environmental literacy it should automatically start by the teacher. In addition, to produce lessons with insight into environmental literacy requires appropriate preparation. One form of preparation of learning that must be done by a teacher is to make a lesson plan. So, to find out if a teacher oriented to develop the students' environmental literacy can be analyzed from the lesson plan. Based on the problem, the purpose of this research is to produce information about teacher's literacy attitude and teacher learning plan profile in developing environmental literacy.

II. METODOLOGI PENELITIAN

The research method used in this research is descriptive method, that is research method that does not give treatment, manipulation, or alteration to sample used so that does not require control class or experiment class [7]. Participants in this study were 35 teachers from 15 different schools located from 7 districts in the province of South Sulawesi, Indonesia.

The sampling technique was taken by cluster random sampling.

The research instrument used there are two. First, an environmental literacy component analysis sheet that has been validated by an expert. This instrument is used to analyze teacher skill aspect in applying environmental literacy in the learning contained in RPP so as to obtain the learning design profile. Second, a matter of environmental literacy test adapted from the question of Middle Schools Environment Survey / Instrument (MSELS / I) [8], [9] examines teacher attitudes toward environmental literacy, including affective and action aspects. The Likert-scale problem consists of 31 questions. Descriptive data analysis is done on the Likert scale consisting of 4 components (strongly agree (SS), agree (S), disagree (ST) and strongly disagree (STS) .For positive statement used quantization of data in the form (SS = 4, S = 3, TS = 2 and STS = 1) and for negative statements in the form (SS = 1, S = 2, TS = 3 and STS = 4) Data processing Sheet analysis is done by using guttman scale where if there is component literacy is given a value of 1 but if there is no literacy component then it is given a value of 0. This data is then made in percentage and then interpreted with reference to criterion [10].

Table I. kriteria interpretasi skor

Rentang presentase (%)	kategori
0-20	Sangat tidak baik
21-40	tidak baik
41-60	cukup
61-80	Baik
81-100	Sangat baik

III. RESULTS AND DISCUSSION

The results section describes the learning design profile used by the science teacher of SMP and the teacher's attitude toward environmental literacy.

a. The learning design profile used by SMP science teachers

The results of data analysis obtained from the analysis of learning implementation plan (RPP) using environmental literacy indicator (skills) are described in Table I which comprises the components and sub-components of environmental literacy according to [11]:

Table II. Percentage of environmental literacy component (skill aspect) in Rpp

component indicator	Sub-component indicator	Percentage (%)
Skills	Ability to identify problems and issues	64
	Ability to analyse the issues	45
	Ability to determine variability and research question	36
	Ability to collecting data	82
	Ability to analyse data	82
	Skills performs	82
Average		65

Table II shows the percentage of environmental literacy components in rpp with the highest percentage indicated by the skill sub-component of data collecting skills, the skills of analyzing the data and skill of taking the act of obtaining 82% percentage so that it is categorized very well. This is evidenced from the RPP that analyzed there are learning activities in the form of activities to collect and analyze data to prove environmental problems. The data is analyzed from the search of information in the form of books, internet and other teaching materials. In addition, in student learning is also required to indicate a solution of action that must be done to overcome the problem

The percentage of skills to identify problems and issues of 64% is categorized well, and the percentage of skills to analyze the issues by 45% is sufficiently categorized. It is evident from the RPP that learning focuses only on identifying the issue activity, not to the extent of analyzing Master issues more tend to give issues directly and students directly prove it through literature search.

The subcomponent of determining variable skill and research question is 36% then categorized. Less. This is evidenced by quite a few that show determine the variable when the aspect of variable determination is one important aspect because when students are able to determine the variables that cause environmental problems then the students are able to overcome the problem. The average of the sub skill component indicator is 65% so it is categorized well so that it can be concluded that the teacher has been able to apply environmental literacy in learning well.

The average of sub-component indicator is 65% then categorized well. this is evidenced in the analysis of this research teacher's RPP refers to the scientific approach which is the demands of the 2013 curriculum and student-centered learning process. The learning process used is learning through the process of discovery. In general, the aspect of environmental literacy in learning has been using the discovery process. It is clearly seen with the high value in three aspects, namely the skills to collect data, the skills to analyze the data and the skills to perform, but still less in determining the variable, although the research question has been grown by the teacher in the learning . so it can be concluded that the teacher's design learning profile has been categorized well although there are still shortcomings in the aspects of the determination of variables and research questions.

b. Teacher's attitude towards environmental literacy

There are two components studied related to this teacher's attitude, that is affective aspect and action. Data The percentage value of environmental literacy

attitudes is shown in Table III below.

Table IIIpercentage of attitudes of environmental literacy of science teachers SMP

No	komponent	Sub komponent	Presentase	average presentase
1	Afektif	1. Appreciation and environmental sensitivity	81%	79%
		2. Attitude to the environment to the environment	72%	
		3. Environmental values	75%	
		4. Ethical and moral considerations	85%	
		5. Success and locus of control	63%	
		6. Personal responsibility	92%	
		7. Will / motivation / purpose of action	85%	
2	tindakan	1. Conservation and ecological management	80%	83%
		2. Consumption and economic action	76%	
		3. Invitations to individuals and communities	84%	
		4. Legal action and law enforcement	92%	
		5. Another form of community participation	81%	
Rata-rata				81%

TableIII, showed that the affective component of the first sub component of awards and sensitivity to the environment received an 81% percentage in very good categorization. This is due to the teacher's considerable sensitivity to environmental issues. In the second sub component of attitudes toward the environment, a percentage of 72% is categorized well. This is because teachers plan lessons with more inculcated environmental care attitudes. In the third sub component of environmental values obtained a percentage of 75% is categorized well. This is because teachers inculcate environmental values in everyday life. The planting of the value starts from the book, watches the environment-related impressions and visits the natural attractions. The fourth sub-component on ethical and moral considerations obtains a percentage of 85% is categorized very well. This is seen from teachers who agree to provide ethical and moral considerations of cases occurring in the environment. The fifth sub-component on the success of locus of control gets a 63% percentage of good categorized, this is seen from the teacher's answer to the failure of the students who do not care about the environment due to teacher's mistake in educating. The sixth component of personal responsibility obtains 92% percentage is categorized very well, the teacher gives the students responsibility to maintain the cleanliness of the class and not to litter. sub component ketuju that is willingness / motivation / purpose to take action 85% percentage is categorized very good. This is seen from teachers motivating students through various events or problems to reduce pollution and most responded strongly agree. On average all sub-affective components acquire a percentage of 79% so that affective components are categorized well.

The action component consists of five sub component aspects. The first sub-component of Conservation and ecological management obtains an 80% percentage rating is categorized very well. This is because the answer agrees to the statement "I have asked my family to recycle" the disagreement statement "I do not separate recyclable and non- "The second sub-component, namely consumption and economic action, obtains a percentage of 76% is categorized as good. This is because the teacher's statement is willing to invite someone who does not recycle to start recycling. In the third sub-component of the invitation to individuals and the public obtain 84% percentage is categorized very well. this is supported by the teacher's invitation to the surrounding community to reduce pollution. In the fourth sub-component of legal action and law enforcement obtain 92% percentage is categorized very well obtained from the statement in the form of giving reprimands and sanctions to students who deviate from the attitude of environmental care such as disposing waste indiscriminate labor. In the fifth sub-component, the other forms of community participation get the percentage of 81% categorized very well. This is derived from the statement of asking others what I can help to reduce pollution. So that from all sub-action component is obtained an average of 83% action value so that affective component in categorize very good. And the average score between affective and 81% action and categorized very well. Based on the data of teachers in the province of South Sulawesi Indonesia already has a good attitude of environmental literacy and able to be a role model for its students.

CONCLUSION

The learning design profile used by teachers is good, although there are still shortcomings in the determination of variables and research questions. The environmental literacy attitude of teachers in the province of South Sulawesi Indonesia is categorized

as good and able to become a role model for its students

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