Implementation of Environmental Educationto Support Sustainability of Green Campus Program in Universitas Riau

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ABSTRACT

Education strategy through implementation of Environmental Education (EE) was implemented to achieve sustainability of green campus program in Universitas Riau. The learning process is done so that students have knowledge and attitude to applied in life. The research was conducted by survey method with measured parameters is the success rate of the learning process (planning, implementation and learning outcomes) and student attitudes toward the campus environment. Respondents are lecturers and students who have attended EE. Data were collected by observation, questionnaires, and documentation, which were analyzed descriptively. The results showed that the learning process of EE has a good with the student's knowledge is good. The attitude of the students after attending the lecture also shows a good response to environmental management.

***Keywords**: Green Campus, Environmental Education*

Introduction

Sustainable development based on balanced and harmonious relationship between social need, economic activity and the environment (Mahayudin *et al*., 2015).An understanding of the importance of sustainable development needs to be implanted to preserve the environment.Universities can play a significant role in transforming education and society toward a sustainable development on future (Dagiliūtė *et al.*, 2015).

Universitas Riau (UR) as one of the universities in Province of Riau has a commitment in supporting sustainable development. This commitment is translated through a green campus program. Green Campus Program is implemented by integrating science and environment into the tridharma policy (education, research, and devotion) (Utomo, 2007). Green campus programs participate and are responsible for creating a sustainable campus (Nasoetion, 2009). The main indicator of green campus is policy and management from (a) setting and Infrastructure, (b) energy and climate change, (c) waste; (d) water; and (e) education (UI Green Metric, 2017).

UR is ranked 14th as a green campus in Indonesia (UI Green Metric, 2017). One of the green campus program strategy in UR (education field) is implemented by applying Environmental Education (EE) on Faculty of Teacher Training and Education. This course aims to provide understanding to students about: (a) the concept and application of

environmental education in life and learning; (b) identifying environmental issues at both local and global levels; (c) analyze various environmental management efforts, including aspects of planning, utilization, control, maintenance, supervision and law enforcement (FKIP, 2015).

Every learning policy in college should be evaluated periodically and continuously. Evaluation is used as a benchmark for success and improvement of learning quality. The main components that must be evaluated are planning, implementation of learning and assessment of learning outcomes (Kemenristekdikti, 2016).

In order to support the sustainability of the green campus program as well as improving the quality of learning, research is conducted on the application of EE at the Universitas Riau.

Methodology

The research was conducted at the Faculty of Teacher Training and Education onUniversitas Riau(FKIP UR) in Semester 2016/2017. Research conducted by this survey method aims to determine the level of success of the learning process and its relationship with the green campus program. Parameters measured are planning, implementation of learning, and assessment of learning outcomes. Data were collected by observation, questionnaire, and documentation from literature study.

Data analysis was done by: (a) test of validity and reliability of questionnaire; (b) descriptive analysis of the questionnaire results. Validity test is done through the pearson correlation test (Sugiyono, 2010). While the reliability test is calculated through the alpha cronbach's test, provided that if the alpha value>0.9 is very good, >0.8 is good, >0.7 is acceptable, >0.6 is not good, >0.5 is not good, <0.5 is unacceptable (Gay et al., 2000). Questionnaire analysis is descriptive with the following criteria: (a) Very Good is>4,20-5,00; (b) Good is>3,40-4,20; (c) Enough is>2,60-3,40; (d) Less is>1.80-2.60; (e) Very Less 1.00-1.80 (Widoyoko, 2012).

Result and Discussion

The study program in FKIP UR can be grouped into 5 fields (departement): science education, language and art, social sciences, mathematics and natural science, and sports education.The results showed that overall implementation of EE in FKIP UR was good with score 4.08 (0-5 scale). The full results are presented in Table 1.

Table 1. Assessment of EE Learning Process

Education Field	Aspect of Assessment		
	Planning	Implementation	Evaluation
Science Education	4.09	4.06	3.99
Language and Art	4.01	3.84	3.62
Social Sciences	4.26	4.19	4.15
Mathematics and natural science	4.11	4.25	4.13
Sports Education	4.20	4.18	4.13
Mean	**4.13**	**4.11**	**4.00**

The highest scoring score is the planning aspect. Aspects of planning is done is the readiness of instructional devices. Learning tools have been developed by involving lecturers at FKIP UR according to field of study. Meanwhile, the lowest score is the aspect of the assessment of learning outcomes. Aspects of assessment include the suitability of the process and the results of the assessment in learning. Although it is the

lowest score, the assessment aspect is still considered good (4.00).

The students' knowledge is quite diverse. There are some students who score low and fail (Table 2). Some of the students who experienced the failure came from the fields of education, Social Sciences Education, Language and Arts Education, and Sports Education. While the students of Mathematics and Natural Sciences education, no one fails.

Table2. Values of Student Knowledge on EE

Quality Score	Value Range (N)	Number of Students (%)
A	> 85	20.8
A-	80 < N ≤ 85	27.2
B+	75< N ≤ 80	17.9
B	70< N ≤ 75	15.6
B-	65< N ≤ 70	10.4
C	60< N ≤ 65	2.2
C+	50< N ≤ 60	4.5
D	45≤ N ≤ 50	0.5
E	< 45	0.3
T	Gagal	0.6

The result of the students' environmental caring attitude is good with the score 3.76 (0-5 scale). The highest score (3.9) comes from students in social sciences, mathematics and natural science and sport education, while the lowest is language and art (3.5) and sciences education (3.7). The full assessment results are presented in Figure 1.

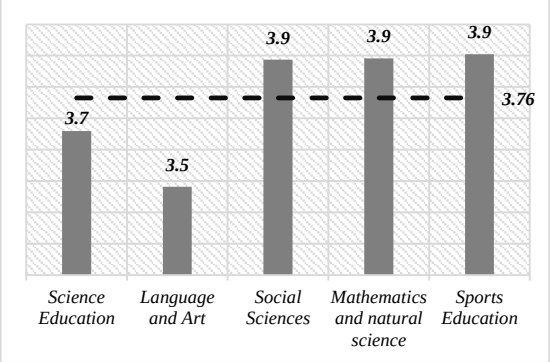

Figure 1. Attitude of Environmental Care

Assessment of student's caring attitude is seen based on 5 indicators: (a) activeness of seeking information; (b) compliance with regulations; (c) environmental caring habits; (d) active participation in supporting environmental prevention and management programs; and (e) preparedness in disaster anticipation.

Based on knowledge data and attitude assessment, it is seen that there are still some obstacles faced in the application of this course. Of the total respondents who claimed to experience obstacles, as many as 27.3% still difficulty in mastery of the theory that has been taught; 22.7% claimed to be due to the relation and balance of field practice and theory not yet optimal; as much as 21.9% because of the limitations / readiness of accurate information sources and teaching materials; and 9.3% due to the lack of awareness of environmental cares. Only 18.7% felt that there were no significant obstacles.Valderrama-Hernández *et al*., (2016) found that the results of the research in different levels of education (primary, secondary, and higher education) that there is interest in a reflective view closer to the complex thought implementation of Environmental Education, but there is difficulties to reductionism between theory and their practice.

The cultivation of environmental knowledge should be possible using existing problems in the environment.Elaine, *et al.*, (2016) revealed that various studies have consistently concluded that problem-based learning can improve long-term retention of knowledge and the application of real knowledge. Problem-based learning is a learning activity that is done by using the problem as a first step in collecting and integrating new knowledge (Triyanto, 2009). Problem topics can be taken based on literature studies or with field practice in the neighborhood.

The available experience and conceptual base of helps make education more efficient since they concentrate attention not on the acquired knowledge, but on its creative practical use, especially for the solution of ecological and social problems.Things to do is to develop the value component of Environmental Education taking into account local specificities and cultural peculiarities based on principles and values within the sustainable development (Nasibulina, 2015).

All students agree that the environmental education course is applied. Percentage of student perception shows that the application of Environmental Education course is important in environmental management (34.7%), field of study (23.4%), insight of educator candidate (20.6%), and environmental care attitude (21.3%). The full results are presented in Figure 1.

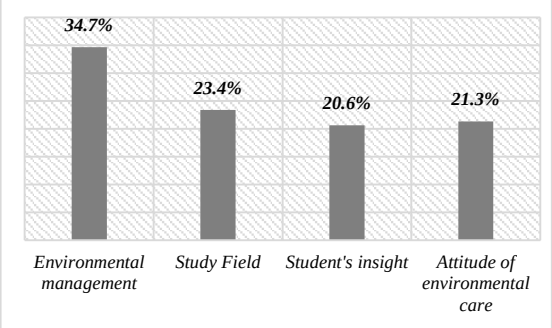

Figure 1. Student Perception of ImplementationEE

The role of environmental education is crucial to relate society, environment, and biodiversity in sustainability development (Santana, *et al.*, 2017). The higher education was responsible for knowledge transformation, sci-tech talents cultivation and technical innovation are of great importance in the development of the sustainable society (Tan *et al.*, 2014). Initiation of green campus program as a form of college implementation in sustainable development program. One indicator in the green campus program is for developing a whole-campus policy for environmental education.

Student awareness in maintaining and preserving the environment plays an important role in supporting the sustainability of the green campus program. Improvement of environmental knowledge through Environmental Education has a positive relationship to instill environmental care attitude. The result of observation shows that environmental awareness by students who have followed Environmental Education course is good (4.08). Azhar, et al. (2015) found that a one-point increase in the value of environmental knowledge could improve the environmental attitudes by 1.22%. KLH (2013) also explains the indicators of education and environmental knowledge play an important role in improving environmental caring behavior. If this continues to be done

massively then the level of environmental care behavior will increase.

Conclusion

The results show that the implementation of EE in FKIP UR is good. Student's environmental knowledge and attitude after following EE is good. EE is important to implement because it can support sustainable environmental management; field of study; students' insight as a prospective educator; and students'attitude of environmental care. The sustainabilityimplementation of this course can add insight and improve students' environmental caring attitude in the context of sustainable environmental management which can gradually support the sustainability of green campus programs at the Universitas Riau.

Evaluation of improvements that need to be done is: the optimization of problem-based learning with the existing topics in the surrounding environment; the implementation of field practice that correlates directly with the theories being taught;providing relevant sources of information and teaching materials as a reference for learning; and strengthening environmental cares in every learning process.

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