

Ecoliteracy Level of Student Teachers (Study toward Students of Universitas Syiah Kuala Banda Aceh)

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Abstract. This study is back grounded by the importance of ecoliteracy for each individual particularly for student teachers. Based on this, this study is aimed to find out how the ecoliteracy level of student teachers. The method used is survey. This study is implemented in eight study programs, with the number of respondents are 240 students. Data analysis is done descriptively toward four aspects of ecoliteracy. The result of study shows that in general student teachers in Universitas Syiah Kuala have ecoliteracy level which fall in medium category. Only in attitude aspect that most students fall in high category. The finding of this study is that the comprehensive policy which had not existed from university cause ecoliteracy level of student teachers still fall in medium category. Based on this, the head of university needs to make strategic policies in the effort to realize the green and eco-friendly campus.

1. Introduction

Humans are living creature who are very depended on their environment, both physically and socially. For centuries, most humans in their interaction with environment had assumed that they are free to exploit natural resources maximally. The life orientation of modern humans tend to be consumptive, materialistic and hedonist. The desire to possess something influence the action to do something. This orientation had made humans become greedy, exploitative and irresponsible in preserving natural resources and their environment [1]. As a consequence, many natural disasters and environmental damages caused by human being. It is undeniable that various environmental cases which are occurred, both in global and national environment mostly caused by humans behavior [2].

The higher human capacity to intervene the nature, the more a change occurred in environment [3]. Thus, besides human's behavior, a great need of natural resource will also influence on ecosystem balance and as a result in environmental damage. Based on this, it can be known that natural destruction occurred in the last decades is very influenced by humans behavior in exploiting the nature, a great need of natural resource and the mistakes in development pattern.

Environmental damages which are much occurred until now due to human behavior itself. This can be seen from anthropocentrism principle which consider humans as universe conqueror, that anthropocentrism view humans are in the high position and separated from the nature and have the right for it, so humans can exploit the earth and its natural resource. Humans can do everything toward nature as long as it not detriment their interest [4]. As a consequence, humans do not concern about natural preservation so it invoke natural disaster in many parts of the earth.



Many efforts had been done to build awareness of life environmental problem in educational institution. Some programs had been implemented started from elementary school to higher education such as Environment Education, School with Environmental Culture, Adiwiyata Program, Population and Environmental Education and many other programs. But until now, the crisis and environmental disaster still occur in many regions which are caused by the lack of public understanding and awareness to maintain the environment.

The lack of public awareness to maintain the environment indicate that environmental program and learning which are implemented in educational institution had not been optimal. The finding of study showed that environmental learning or integration of material about environment into learning program has limitation and is not effective to enhance environmental awareness among students [5]. The reality above also confirmed by survey result in year of 2013 which found that only 2.5% of respondents who acquire the information about environment through learning in school [6].

Environmental awareness which is still low indicate that school and higher education institution had not played role and become center in cultivating and developing environmental awareness. This is because Green Curriculum and learning which is related to environment is less implemented in real in learning as the result of lack of understanding among teachers about the concept of ecology and environment [7, 8]. Teachers assumed that they only transmit the knowledge to students, so the responsible action will be occurred by itself. Teachers are less able to explore various things which can be made to become learning material. Besides, learning source only rely on textbook and teachers are less utilize the environment as material and learning source [9].

Lack of public care toward environment and lack of learning implementation about environment should concern all people, including higher education. Academia including college students should become motivator and change agent for public. But based on observation in Universitas Syiah Kuala, the oldest and the biggest university in Aceh, environmental problem had not deserved serious attention. It can be seen from the condition of campus environment which is dirty and less maintained. For example, lectures room and the park which always dirty because students throw the trash everywhere, the condition of toilet which is not clean because of the trash and clogged drain. Besides, there are no efforts to conserve and utilize water and electricity such as the tap water which is not switched off even though water container is full, and the light, air conditioner and projector are still turned on even though the lectures had finished. This phenomena is reflection of environmental care behavior of Universitas Syiah Kuala students which is still low.

Educational Institutions Teachers Education should be able to take role in the effort to realize public with environmental culture. Educational Institutions Teachers Education should be able to become agent which can play role in changing people mindset to have environmental awareness and particularly in creating prospective educator who has ecoliteracy level and global insight. Based on this, the author is interested to identify and analyze ecoliteracy level of student teachers in Universitas Syiah Kuala, Banda Aceh.

2. Methods

This study used qualitative study paradigm by using survey technique. The location of study was in Faculty of Teacher Training and Educational Science, Universitas Syiah Kuala, Banda Aceh in eight study programs. Respondent/data source were 30 students from each study program so in a whole the numbers of respondent were 240 respondents. Data collection is done through test and questionnaire. Instrument of study was developed based on core level of ecoliteracy issued by The Center for Ecoliteracy [10].

Descriptive statistical analysis was done to describe data in each variable of study. This analysis is particularly to see general description of respondent ability in each variable of study, that as its name implied, descriptive statistic is aimed to get description or measurement about the data in hand[11].

The criteria of scoring for ecoliteracy level of knowledge aspect is score 1 for each right answer and score 0 for each wrong answer. In ecoliteracy level of attitude aspect, by using Likert Scale, this scoring is done with the criteria as follow: very agree = 5, agree = 4, uncertain = 3, disagree = 2, and

very disagree = 1. In ecoliteracy level of skill and participation aspect, scoring is done with criteria as follow: always = 5, often = 4, seldom = 3, sometimes = 2, and never = 1. Data of test result and questionnaire of total score calculation for each respondent are grouped into three class intervals, namely high, medium and low.

3. Results and Discussion

The measurement of ecoliteracy level consist of four sets of instrument, namely ecoliteracy of knowledge aspect, ecoliteracy of attitude aspect, ecoliteracy of skill aspect, and ecoliteracy of participation aspect instruments.

The answer response for ecoliteracy of knowledge aspect moved to score 0 if the answer is wrong and score 1 if the answer is right for each question item with numbers of question item are 18. Meanwhile, the answer response for ecoliteracy of attitude aspect, skill aspect and participation aspect moved from score 1 to score 5 for each item. For attitude aspect, number of questions are 19, score moved from 1 to 95. In skill aspect, with numbers of question item are 15, score moved from 1 to 75. For participation aspect, numbers of item are 20, score moved from 1 to 100.

If it is summed for ecoliteracy level, numbers of questions and total questions are 72 items, with the lowest score for ecoliteracy level is 54 and the highest score is 288. The result of study showed that total score obtained is 49.896 and mean is 207.9. The lowest score for scale of ecoliteracy level is 175 and the highest score is 248. The categorization of respondents for ecoliteracy level is done based on criteria made by the researcher herself. Score is categorized into three categories, namely high, medium and low. The result of categorization for ecoliteracy level can be seen in Table 1 as follow:

Table 1. Categorization in variable of ecoliteracy level.

No.	Category	Frequency	Percentage (%)
1.	Height (221-288)	57	23.75
2.	Medium (141-220)	124	51.66
3.	Low (54-140)	59	24.58
Total		240	100.00

From Table 1, it can be argued that as many as 124 (51.66%) of respondents included in the medium category for the competence of ecoliteracy. Only 57 (23.75%) of the respondents were in the high category and the remaining 59 (24.58%) of the respondents were in the low category for their ecoliteracy level. Then categorized the respondent for his ecoliteracy level based on every aspect. Ecoliteracy of knowledge aspect, categorization result can be seen in Table 2:

Table 2. Categorization based on the ecoliteracy of knowledge aspect.

No.	Category	Frequency	Percentage (%)
1.	Height (13-18)	65	27.08
2.	Medium (7-12)	128	53.33
3.	Low (0-6)	47	19.58
Total		240	100.00

Based on Table 2, it can be known that most respondents are included in medium category in ecoliteracy level of knowledge aspect, that is, 128 (53.335) respondents. Only 65 (27.08%) respondents are included in high category, whereas the rest of respondents as many as 47 (19.58%) respondents are included in low category for ecoliteracy level of knowledge aspect. It is because only three study programs which have the courses related to environment, another five study programs do not have the courses related to environment, so respondents do not acquire adequate knowledge about environmental problems.

Total of 65 respondents who are included in high category generally enrolled in Biology Education, Chemistry Education and Geography Education program studies. To increase students' knowledge about environment, these three study programs particularly Geography Education is routinely hold the

seminar and talk show related to environment which present the speakers from various people such as from government, academia, and institutions which have environmental preservation efforts.

In ecoliteracy level of attitude aspect, the result of categorization can be seen in Table 3:

Table 3. Categorization based on ecoliteracy level of attitude aspect.

No.	Category	Frequency	Percentage (%)
1.	Height (71-95)	218	90.83
2.	Medium (45-70)	22	9.12
3.	Low (19-44)	-	-
Total		240	100.00

From Table 3, it can be explained that most respondents (218/90.83% respondents) are included in high category for ecoliteracy level of attitude aspect, only 22 (9.12%) respondents are included in medium category and there are no respondents who are included in low category in ecoliteracy level of attitude aspect. Even though most respondents are included in medium category in ecoliteracy level of knowledge aspect, this is because they can acquire various information about environmental problems through many medias, especially internet and television. Many reports about environmental and natural resources crisis and many campaigns promoted to conserve the environment certainly can influence public attitude toward their environment.

In ecoliteracy level of skill aspect, the result of categorization can be seen in Table 4:

Table 4. Categorization of respondents based on ecoliteracy level of skill aspect.

No.	Category	Frequency	Percentage (%)
1.	Height (56-75)	9	3.75
2.	Medium (36-55)	179	74.58
3.	Low (15-35)	52	21.66
Total		240	100.00

Based on Table 4, it can be known that most respondents (74.58%) are included in medium category in ecoliteracy level of skill aspect, only 9 (3.75%) respondents are included in high category and 52 (21.66%) respondents are included in low category in ecoliteracy level of skill aspect. The small numbers of respondent who are included in high category in ecoliteracy level of skill aspect is because the environmental management effort had not cultivated from early age both at home and at school. As the consequence, students do not possess adequate skill in utilizing and managing environment.

In ecoliteracy level of participation aspect, the result of categorization can be seen in Table 5.

Table 5. Categorization of respondents based on ecoliteracy level of participation aspect.

No.	Category	Frequency	Percentage (%)
1.	Height (75-100)	94	39.16
2.	Medium (48-74)	146	60.83
3.	Low (20-47)	-	-
Total		240	100

Based on Table 5, it can be known that most respondents (60.83%) are included in medium category in ecoliteracy level of participation aspect, and 94 (39.16%) respondents are included in high category and there are no respondents are included in low category in ecoliteracy level of participation aspect. If it is observed thoroughly, there are high numbers of student who are included in high category for participation aspect, particularly students/respondents who are enrolled in Study Program of Geography Education and Biologi Education. Many activities related to environment organized by students make them accustomed to participate in environmental management effort so they feel possess the environment. Some activities which are done by Geography Education and Biologi Education students are related to environmental management such as mutual cooperation, clean

campus environment, clean the river, clean natural tourism object, mangrove planting, and another activities.

Ecoliteracy is importance for each individual [12]. The term *ecoliteracy* not only to measure one' ecological knowledge; but also to measure one's ability and willingness to apply this knowledge for continuous life style [13]. Furthermore, ecoliteracy not only orient individual understanding toward the concept of ecology, but also toward understanding about place in an ecosystem [14].

As new paradigm, ecoliteracy initiate the movement in the environmental care effort and aims to increase public ecological awareness. Ecoliteracy try to introduce to public and renew their understanding about the importance of global ecological awareness, in order to create balance between public needs and earth capacity to support it. In simple level, *ecoliteracy* means literate to condition and knowledge life relatedness in the earth or in the other word, capable to understand basic relatedness between human and nature [15]. Ecoliteracy focus on improving our understanding about interconnection between earth natural system and human system [16]. Even though ecoliteracy is defined variously by the experts but ecoliteracy has the common goal namely to develop public intelligence needed for sustainable development.

In ecoliteracy level of knowledge aspect, the result of study showed that ecoliteracy level of students in knowledge aspect are included in medium category. It is because not all study programs have learning related to environment. In the effort to increase ecoliteracy level, particularly knowledge aspect, environment education is very important, that environment education is needed to achieve ecoliteracy [16]. The finding of study conducted showed that by integrating the principle of sustainability in curriculum, it can enhance students' ecoliteracy level [17]. Due to the effort to enhance students' ecoliteracy level of knowledge aspect, education implementation which is related to environment is crucial.

In ecoliteracy level of attitude aspect, the majority of students are included in high category. Even though their ecoliteracy level of knowledge aspect is medium but in ecoliteracy level of attitude aspect, the students of Universitas Syiah Kuala can be categorized as good enough. It is because beside learning factor related to environment, students also had acquired various information about crisis and environmental damage particularly related to media reporting about global warming problem and floods occurred in many places. One media which can influence public environmental attitude is film media. Film is the media to convey message and mass communication tool. One film which can be utilized as environmental campaign is 3D-animation film of Delphi Safari. The study result showed that environmental campaign conveyed through 3D-animation film Delhi Safari is successful in campaigning the importance of environmental preservation [18].

In ecoliteracy level of skill aspect, most students who are in medium category, only nine (3.75%) respondents are included in high category. The small numbers of respondents who are in high category in ecoliteracy level of skill aspects is because the environmental management effort is not used to be done in educational institution and at home. Environmental management effort also not habituated from early age so students do not possess adequate skill in utilizing and managing environment. The inculcation of skill in managing natural resources and environment needs to be done earlier in family and school environment. In school, students should be involved in managing school environment so they are get used and skillful in doing various activities of environmental management, such as planting the trees, watering the plants, and recycling various used stuffs. The finding of study showed that involving students in activities such as planting the trees in garden, recycling paper, glass, and plastic can enhance their skill in managing environment [19].

Lastly, in ecoliteracy level of participation aspect, most respondents are included in medium category. This finding is in accord with observation result, in which there were students who still threw the trash everywhere and there is no awareness to clean study room and pick up the trash voluntarily. Based on this finding, the role of head of faculty and lecturers to give exemplary, to give advice and to supervise student's behavior is crucial. Lecturer has very big role in changing student's behavior. The lecturer's task not only transfer the knowledge to students in lectures, but lecturer also has professional responsibility as educator. Lecturer has vital role to change students' behavior. Due

to their role in the effort to enhance students' ecoliteracy, regardless of their background, expertise or actual position, environmental educators should treat themselves as key actor in guiding individuals throughout their personal journey toward deeper ecoliteracy[16].

To enhance ecoliteracy level of students, it need the complex effort which cannot do partially, one of them is through environment education. Environmental education has a mission to form human's attitude and behavior concerning their environment for the benefit of human beings in this earth [20]. Environmental education learning in school give positive contribution to students' environmental activity and their care toward local environmental problems [21].

To develop cognitive, affective and psychomotor aspects of ecoliteracy, not only by reading about ecology, but it need direct experience in real life [22]. Therefore, to enhance students' ecoliteracy, it is not sufficient only by giving knowledge through learning in lectures, but it should be supported also by creating eco-friendly culture in campus, it will be easier to inculcate ecoliteracy in students by cultivating eco-friendly culture in educational institution[13]. Students' involvement is very important in various activities of environmental protection and management in campus, in order that students have sense of belonging, respect and love environment and practice environmental management and protection.

4. Conclusions

Based on result and discussion, it can be concluded is in general, student teachers in Universitas Syiah Kuala have ecoliteracy level which is included in medium category. Based on finding of study, total of 124 (51.66%) respondents are included in medium category, 59 (24.5%) respondents are included in low category and only 67 (23.75%) respondents are included in high category. This finding is reasonable, because in Universitas Syiah Kuala including all faculties and study programs, environmental problems had not included in strategic plan and had not became main priority, so there is no optimal and comprehensive effort to realize green campus and to create students who care about environment.

The recommendation which can be given based on analysis result is for higher educational institution, as second home for students. Educational institution is functioned as the place to transform knowledge, cultural values, the norms expected to become foundation to cultivate environmental care attitude in students. Campus need to make strategic policies in the effort to realize green and eco-friendly campus. Similarly, practical policies need to be implemented to encourage students to be more care about environment, such as use less papers, encourage students to walk inside the campus, bicycling or use public transportation to go to campus, and suggest students to bring reused drink bottle to reduce the trash in campus. Therefore, it need synergy among the head of educational institution with educator (lecturer) with all administrative staffs and all students in order to implement the existing programs optimally.

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