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Environmental attitudes among students of Early Childhood Education program in University of Jember

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Abstract: This study aimed to describe the environmental attitudes of students of Early Childhood Education (ECE) program in University of Jember. Descriptive quantitative approach with survey method were employed. For data collection, the Environmental Attitude Scale were distributed to 102 students of ECE program in University of Jember from 2nd, 4th and 6th semester, with age ranged from 19 – 23 years old. Analysis were done based on mean, standard deviation, maximum and minimum score computation with N=101. The results of this study indicated that (1) Most students of ECE program in University of Jember have general positive environmental attitude, (2) The energy saving is the most concerned environmental issues among the students, and waste products get the least attention. Some additional findings and limitations are discussed.

1. Introduction

United Nations Environment [9] published Global Environment Outlook that addressed some environmental critical issues. Pollution, environmental disaster, climate change still dominated the issues, with heightened concerns because of greater problems and impact for global society. It is said that average surface temperature on Earth has gone up by about 1°C from pre-industrial level and without proper management can exceed 1.5°C by 2040s. Industrial systems nowadays also give the human history the most chemical-intensive era, and improper disposal of waste bring negative impact to ecosystem and human health.

These issues need deeper global concern and greater actions. The environmental degradation made by human already had raising the burden of diseases and reducing access to the ecosystem support that are suffered around the world. Clean air, freshwater, unpolluted sea and soil are more limited nowadays and these problems could decline quality of life. Recognizing the anthropogenic nature of the environmental problems and the impacts to human life, UN Environment also bring initiatives of Healthy Planet, Healthy People perspective. With the perspective, UN Environment encourage the government of nations worldwide to save budget by making policies to support natural system recovery rather than focused only to mitigation the problems caused by environmental degradation.

Along with these initiative, education become strategic. IPCC [4] had recommended education, information and community approaches to accelerate behavior changes that consistent with adapting and limiting climate change. Through education, public awareness of environmental issues can be spread out, new behavior necessary for adapting and limiting global warming can be learned, and public acceptability to the related government policies are strengthened.



Early childhood are the foundation to build proper attitude and behavior about environment. In the early education (ECE) context, Elliot [2] provoked ECE practitioners and experts to concern deeper about environmental issues and how ECE can contribute to overcome global environmental problems. These contribution are parts of early childhood education for sustainability (ECEfs) agenda, which is a strategic investment of sustainable development for the world in the future [10]. ECE curriculum and pedagogy are provoked to implement and support sustainability.

In order to encourage ECE practitioners' concern and motivation to implement sustainability and build awareness and new pro-environment behavior to the future generations, their environmental attitudes need to be assessed. Environmental attitudes encompass the beliefs, affective responses, and behavioral intentions that people have about environment-related activities and issues [6]. According to Attitudinal-Behavioral-Contextual theory [7], attitude is an important component of behavior. Assuming with this theory, teachers with positive environmental attitude tend to be sensitive about environmental issues, change their behavior necessary to prevent or limiting the environmental degradation and can be easily encouraged to promote the sustainability to their curriculum. Teachers that has negative environmental attitude will do the opposite; they're not sensitive to the environmental issues, ignore the importance of guiding children pro-environment behavior and even maintain hazardous behavior.

Early Childhood Education program, as part of University of Jember, have encouraged their students to give concern to the social-cultural and environmental issues. They prepare the students to be ECE teachers and experts that sensitive to the surrounding environment, able to develop pedagogy based on the richness of socio-cultural of the society and guiding good habits to the children, including pro-environment behavior. Along with these educational purpose, this study aims to assess the environmental attitudes of the students of ECE programs in University of Jember. The results will be taken as self-evaluation of ECE program in order to strengthen the learning quality and impact.

2. Method

The study was conducted using descriptive quantitative approach. A survey held to 102 students of ECE program in University of Jember that consist of 4 male and 97 female students, with age ranged from 19 – 23 year old. For 2018/2019 academic year, the students are in 2nd, 4th and 6th semester. Table 01 describe the distribution of respondents per semester:

Table 1. Distribution of respondents per semester

Semester	Respondents		Sum
	Male	Female	
2 nd	2	15	17
4 th	1	28	29
6 th	1	55	56
Total	4	98	102

For data collection, Environmental Attitudes Scale was used. The Scale are modified from Tafli & Ateş [8]. The scale are Likert type with 5 choices ranged from Very Suitable, Suitable, Not Sure, Not Suitable and Totally Not Suitable. There're 18 items from five dimensions of environmental attitudes, with 11 favorable items and 7 unfavorable ones. The blueprint of the scale are described in Table 02.

Table 2. The Environmental Attitudes Scale blueprint

Dimension	No. of favorable items	No. of unfavorable items	Σ
Environmental problems	3,4,5	1,2	5
Energy saving	6,9	7,8	4
Waste products	10,12,13	11	4
Environmental responsibility	14,15,16	-	3
Environmental support	17,18	-	2
Total			18

For favorable items, the score are ranged from 5 for Very Suitable and 1 for Totally Not Suitable, vice versa for the unfavorable items. The instrument transformed to the Google Form and spread out to the respondents via WhatsApp accounts. The form was designed so that every respondents only able to participate once, in order to prevent double participation. The respondents were asked to choose the suitability of each statement to their own knowledge, perceptions, judgment, feelings and habit and encouraged to feel free to do so.

Data analysis used descriptive quantitative techniques. Mean, standard deviation, maximum and minimum score for each environmental attitude dimensions were computed and data from each respondent then categorized into positive, neutral and negative attitude with hypothetical mean procedures. Before the data analyzed, validity and reliability of the instrument were checked through internal consistency coefficient and Cronbach alpha values. All the computations were done with SPSS v.16 software.

3. Result and Discussion

Data analysis was done to N=101 from 102 respondents. One respondent didn't give complete respond so must be omitted. Internal consistency analysis shows that five items has low consistency coefficient (i.e. under 0.3) so they were excluded from the next analysis. The composition of the items for each scale dimensions changed as shows in Table 03 below.

Table 3. The composition of the scale after internal consistency analysis

Dimension	No. of favorable items	No. of unfavorable items	Σ
Environmental problems	3	-	1
Energy saving	6,9	8	3
Waste products	10,12,13	11	4
Environmental responsibility	14,15,16	-	3

Environmental support	17,18	-	2
Total			13

The Cronbach alpha coefficient after those five items were omitted are .873 which means that the scale are reliable.

With hypothetical mean = 39 and hypothetical SD = 8.67, the environmental attitudes then can be categorized as “Positive” if $X > 56.921$; “Neutral” if $43.719 \leq X \leq 56.921$; and “Negative” if $X < 43.719$. Based on these categorization, Table 04 shows the percentages of students’ level of environmental attitude

Table 4. The percentages of students’ level of environmental attitudes

Category	Number of students	Percentage
Positive	72	71.29
Neutral	27	26.73
Negative	2	1.98
Total	101	100

From these results, it seems that most of ECE program students in University of Jember have positive environmental attitudes. Only 1.98% of them that have negative attitudes. For general, it reflects that students of ECE program in University of Jember already internalized the environmental concerns that are thought through curriculum, discussions and habit forming in everyday interaction with other member of the campus’ community. Still, there’re students with negative environmental attitudes that need further concern. These negative attitudes can be problematic for the rest of the community. It is also not positive for pre-service teacher character building, so the pro-environmental curriculum needs to be strengthened.

For further analysis, each of environmental attitude dimensions were analyzed. Table 05 shows the means of each dimensions.

Table 5. Mean of each environmental attitude dimensions

Dimension	Mean
Environmental problems	3.82
Energy saving	4.20
Waste products	3.69
Environmental responsibility	3.84
Environmental support	3.79

These data show that the waste product is the least concerned environmental attitude dimension, while energy saving get the highest attention. Further analysis will be presented for each dimension.

3.1. Environmental problems

This environmental attitudes dimension measure the knowledge, perception, feelings and judgment about some critical and common environmental issues, e.g. the ability of natural environment to neutralize pollution, the impact of natural disaster to the environmental system, the necessity of nuclear energy, etc. The data analysis shows that the students has some concern about this dimension, especially about global energy consumption level. At the same time, this dimension has very limited representation because 4 from 5 items are not valid. It seems that students' knowledge and feelings about environmental problems were overlap because of high interrelation between issues. There's also a tendency to perceive these global environmental problems in comparison with their local surroundings so the students has some mixed feelings and contradiction in their attitude. Jember environmental landscape has many agricultural plantations and industrial forests without centralized industrial area. The landscape seems bring some confidence to the students that the environment still green and manageable, but also worrying about the global environmental degradation. Jember itself actually have some potential environmental problems such as changing landscape and hydrogeology zone on the south karst mountain area caused by mining and cement industrial activities [3] and agricultural land conversion for housing in urban areas [5].

3.2. Energy saving

Energy saving are the most common issues for the students of ECE program in University of Jember and took the most concern. These attentions are in line with their concern about global energy consumption level. The implicit rule of conduct among members of Faculty of Education and Teacher Training to minimize electricity and water use also strengthen the students' perception about the importance of energy saving initiatives. They know that it is wrong to waste energy by leaving electronic appliances such as Air Conditioning units, lamps or charger on in their room or classes without using it.

3.3. Waste product

Waste product is the least concerned environmental attitude dimension. Waste discharge and disposal are the common problems in the human society, especially for those who live in the cities. Andriani & Prawara [1] noted that major cities are the biggest waste generator, with Jakarta itself generated 5,802 tons waste per day. Improper waste management system can cause serious impacts on health and therefore downgrade the quality of life; increase soil, air and water pollution and harm wild life. These facts were known by the students, although garbage disposal still become problematic in their own daily life. Some students were also not quite sure about the importance of their behavior on this issues. Recycling the waste were still not common concerns for some of them.

3.4. Environmental responsibility

In line with their concern on environmental issues, the students tend to have proper responsibility to conserve wild life and natural environment. At least, they agree to do something to show their concern about natural environment. They also tend to have some interest on environmental issues and will participate in pro-environmental activities around them.

3.5. Environmental support

The students know that many environmental problems need to be solved with direct and continuous actions. They know that pro-environmental activities need to be taken seriously and like to give support in the way manageable for them.

From these environmental attitude dimensions analysis, it seems that the students of ECE program in University of Jember have enough knowledge and concern about environmental issues, especially those that are faced in their everyday life and discussed in courses they took. The Environmental Education as a mandatory course in University of Jember also contribute to spread out some environment awareness and build positive attitude. Energy saving are the most well-known issue, perhaps because of the mass media continuous exposure about it and the rules to minimize the energy use they must follow in everyday activities on the campus.

These general positive attitude can be the basis for students' general predisposition toward pro-environmental behavior [7]. Attitude consist of knowledge, beliefs, values, feelings and intentions that have significant association with individual behavior, policy support and environmental citizenship. But with no clear evidence that these attitude contribute significantly to pro-environmental behavior, more support on pro-environment habit forming are still needed. As ABC theory suggests, the role of attitude to generate consistent actions can vary greatly with the behavior, the actor and the context. These positive attitude can be encouraged to the real pro-environmental action by reducing the costs of doing so (e.g. social, psychological, physical and tangible cost for using recyclable products, low energy equipment, dispose solid waste or participate in conservation activities, etc.), give some incentives for pro-environmental behavior and modelled the proper behavior.

4. Conclusion

Based on the results of data analysis and discussion, conclusions can be drawn as follows: (1) Most students of ECE program in University of Jember have general positive environmental attitude, (2) The energy saving is the most concerned environmental issues among the students, and waste products get the least attention. There're also some additional findings, such as tendency to have mixed feelings and inconsistent environmental behavior in some issues, although this findings need further investigation.

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