



IMPROVING ENVIRONMENTAL AWARENESS THROUGH OUTDOOR EDUCATION IN LOW AND HIGH LEVELS OF EDUCATION

Ryan Abu Bakar * Yogi Akin **, Amung Ma'mun **, Kardjono **

*Postgraduate School Sports Education Study Program, Indonesian University of Education
Jl. Dr. Setiabudhi No. 229, Bandung 40154, Indonesia

**Faculty of Sport and Health Education, University of Education Indonesia
Jl. Dr. Setiabudhi No. 229, Bandung 40154, Indonesia

Abstract

The purpose of this research is to reveal the effect of outdoor education based on education level on environmental awareness. The method used in this research is an experiment with 2x2 factorial design. The population is DLH Jabar environmental cadres as many as 220 people in 2014 and the West Java Conservation Cadre Forum. Samples were taken from as many as 64 people seen from their education level and then divided into 2 groups, namely mountaineering and river camp groups, each program sample was 32 people. In each program, 16 people were selected for higher education and 16 people for low education. This research instrument uses the GEBS (General ecology Behavior scale) (Kaiser & Wilson 2007). Data analysis used two-way ANOVA and Tukey's test to see the difference in the effect and interaction of outdoor education with education level. The results as a whole have no significant effect with F count 1.143 and F table 3, 32 but have significant interaction with outdoor education level of education with a calculated F value of 145.591 with an F table of 3.32. The mountaineering program is better given to the high-level group with a Q count of 11.06 with a Q table of 3.34 and the river camp is better given to the low group with a Q count of 13.11 with a Q table of 3.34.

Keywords: Outdoor education, mountaineering, river camp, education level, environmental awareness.

*Corresponding address: Bandung, West Java Indonesia

*Corresponding e-mail: sportakurikuler@gmail.com

Introduction

Environmental problems that exist in society today are a manifestation of the lack of harmony between humans and nature itself, conflicts that occur between humans and nature will have an impact on human losses in some cases, the destruction of nature begins with conflicts between humans themselves (Curran, 1999). Events that occur both ecological disasters and social disasters originate from humans. This means that it is the people who must be educated with the education that brings humans closer to nature directly so that they can feel for themselves the importance of protecting nature and the environment in their lives. (Rustin, 1999;); (Mansfield et al., 2015), the effects of human population growth and increased exploitation of natural resources, not only encourage increased deforestation clearing agricultural land and human settlements but also reduce environmental quality (Caldas et al., 2007); (Borrie, 1959). To improve the environment, we need the right paradigm so that humans and the environment are placed wisely. This paradigm places the environment as a need and humans as a party in need (Heyd, 2010). Perceptions in managing the environment must be supported by various fields of life, one of which is the most important by education. A good education will guide human behavior to respect the environment more so that it makes the environment a top priority that must take precedence so that human life is better (Dillon, 1993); (Orr, 1995); (Roczen et al., 2014). The solution

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that is seen as effective in building environmental awareness is by bringing together the object with the subject to establish a mutual attachment (Mansfield et al., 2015).

One form of implementing education for environmentally-based sustainable development which is carried out programmatically in schools is the Eco-School program. The Eco-School program was developed as a means of delivering commitments to Agenda 21 (Agger, 2010). The Eco-School program was developed by the Foundation of Environmental Education (FEE) in 1994, was developed based on the need to involve young people in finding solutions to environmental challenges and sustainable development at the local level. Environmental education in schools is essential for the realization of awareness. community environment in carrying out their lives (Risheng, 2012). Furthermore, on December 1, 2005, an Eco-School Seminar in Indonesia was held at FPMIPA JICCA UPI, in an effort to accelerate the development of Environmental Education, especially the formal education pathway at the primary and secondary education levels, then on February 21, 2006 the Ministry of Environment and the Ministry of Education and Culture has launched the Adiwiyata Program, to encourage Environmentally Cultured schools that are able to participate and carry out environmental conservation efforts for sustainable development for the benefit of present and future generations (Amalia et al., 2015).

Outdoor Education (OE) as a learning medium in the open is seen as very effective where everyone will be able to feel, see directly and even do it themselves, so that the transfer of knowledge based on experience in nature can be felt, translated, developed by himself. (Byrka et al., 2010); (D'Amato & Krasny, 2011). (OE) is one of the learning media for each individual to be able to instill one's soul bond with nature (Palmberg & Kuru, 2000); (Thorburn, 2017). The feeling of connectedness with nature, encourages individuals to have a desire to preserve nature. Feelings of admiration for the creator's creation will be a motivation to be able to maintain it, after experiencing a deep experience in interaction with nature (D'Amato & Krasny, 2011); (Liefländer et al., 2013). Humans are creatures, playing is an instinct given by the Creator, and the sense of pleasure in playing cannot be eliminated. Happiness cannot be bought with anything, so learning and playing are inseparable (Wu, 2015). OE activities themselves involve more physical factors and activities carried out in the field in the wild. This approach physical and social activities where a person will do more activities that indirectly involve collaboration between friends and creative abilities. This activity will bring up the process of communication, problem-solving, mutual understanding and respect for differences (D'Amato & Krasny, 2011).

Adventure and outdoor activities are now a trend in Indonesian society, one of the adventure activities is mountain climbing (mountaineering). Currently, it is becoming a trend among people especially young people (Brown, 2007); (Apollo, 2017). Ascents are carried out not only by men, not a few are now female climbers who have set foot on the tops of the mountains (Gugglberger, 2015). Apart from mountain climbing, what is currently popular with the public are activities on the water such as white water rafting and body rafting (Filho, 2010). In addition, the activities that are often carried out are camping on the banks of the river or often called River Camp (Morse, 2014). This outdoor activity is synonymous with recreational and adventurous activities, so we need an appropriate method so that an adventure can provide good lessons. Experiential Learning (EL) is a method that

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can be used as an appropriate learning method in an adventure (Chan, 2012);(Lien & Hakim, 2013). The EL method allows one to be able to reflect an activity or trip. EL is a holistic method of the learning process in which humans learn, grow and develop. The mention of the term EL is done to emphasize that experience plays an important role in the learning process and distinguishes it from other learning theories such as cognitive learning theory or behaviorism (Kolb, 1984);(Bohon et al., 2016). So in this study, the authors made two OE programs, namely mountaineering and river camp, as alternatives to overcome environmental problems. The purpose of this study was to measure the overall effect of OE on environmental awareness. In addition, how does OE interact with education levels on environmental awareness.

Methods

To measure environmental awareness in this research, the method used is to experiment with a 2x2 factorial research design. This design allows the use of a factorial design to examine not only the separate effects of each independent variable but also the effects of their combination.

Population & Sample

In this study, the population was DLH West Java environmental cadres in 2014 and FK3I West Java cadres as many as 220 people. Then using the purposive sampling technique to take samples. based on research needs that will use a sample of students who have different levels of education. So the researchers first separated the level of higher education and lower education, then collected as many as 64 people. The 64 people were then divided into 2 groups, namely the mountaineering program group with 32 people and the river camp group with 32 people. Each program group has different levels of education, namely 16 people with high education and 16 people with low education.

Instrument

To measure the level of environmental awareness of the participants the researcher used an environmental concern questionnaire instrument which was adapted from the General Ecological Behavior Scale (GEBS) (Kaiser & Wilson, 2004) (Farisy, 2015)

Procedure

This research was conducted in two different places, namely on the mountain for the mountaineering group and on the river for the river camp group. The research was carried out using the experiential learning method, meaning that it was carried out 2 times with the implementation session evaluating the activities carried out(Bohon et al., 2016). The implementation of research activities is carried out every 3 days(Taniguchi et al., 2005). The mountaineering program was carried out at Mount Artapela and Mount Bukit Tunggul and the river camp was held at Curug Tilu Leuwi Opat Bandung and Bogenvil Park Banjaran.

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Table1. Factorial Design 2x2.

Concern Environment		An Outdoor Education	
		A1 Mountaineering	A2 River Camp
B Levels of education	Height B1	A1B1	A2B1
	Low B2	A1B2	A2B2

Description:

A1 = Program Outdoor Education A1 Mountaineering

A2 = Program Outdoor Education A2 River Camp

B1 = Higher Education Level

B2 = Low Education Level

A1B1 = Program Mountaineering Higher Education Strata

A2B1 = River Camping Program Low Education Strata

A1B2 = Higher Education Strata Mountaineering Program

A2B2 = River Camp Program Low Education Strata

Data Analysis

The data then needs to be processed and analyzed to answer the problem formulation and test the hypotheses in this study. Data processing was carried out by using the Statistical Package for the Social Sciences (SPSS) version 19 application using two-way ANOVA and the Tukey test.

Result

The data obtained from the research results are pretest and posttest data. Data collection that was carried out before the sample was given treatment was pretest data. As for the post-test data obtained after the treatment was given to the sample, it was seen that the increase in the score was a gain score. The two tests were carried out on the two sample groups, namely the mountaineering program group and the river camp program group. Then each group is further divided into two groups of attributes that are seen based on the level of education, namely the high education level group and the low education level group. The data then needs to be processed and analyzed to answer the problem formulation and test the hypotheses in this study. Data processing was carried out by using the Statistical Package for the Social Sciences (SPSS) version 19 application using two-way ANOVA and the Tukey test.



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Table 2. Result Effect of Outdoor Education On Environmental Awareness

Variable	A1 Vs A2		A Vs B		A1B1 vs A2B1		A1B2 vs A2B2	
	F	F tab	F	F tab	Q	Q tab	Q	Q tab
		0.05		0.05		0.05		0.05
Environmental Awareness	1,143	3.32	145.591	3.32	11.06	3.34	13.11	3.34
Conclusion	Not Significant		Interactions		Significant		Significant	

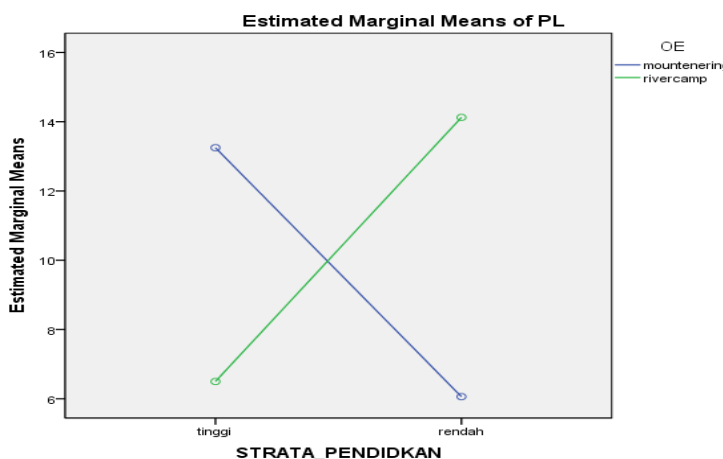
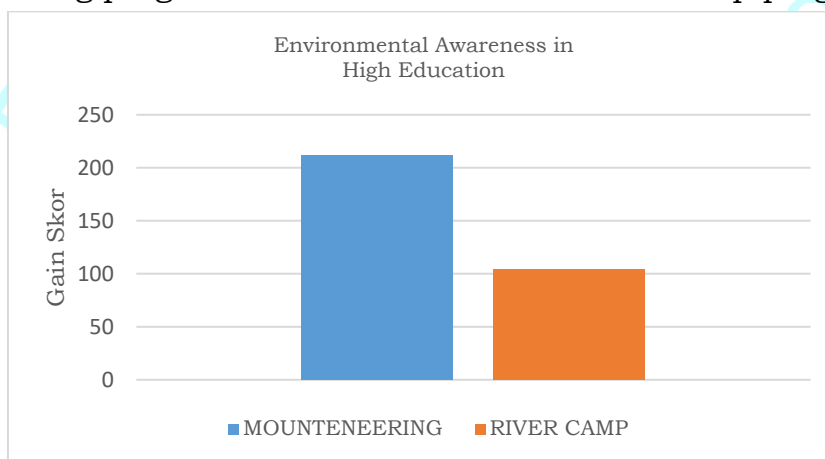


Fig 1. Interaction Level Of Education With Outdoor Education

Difference Between Mountaineering Program and River Camp Program in Higher Education Level group

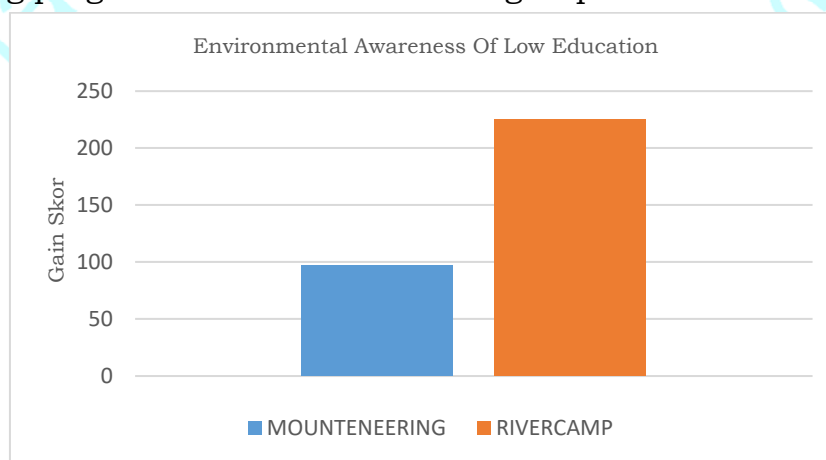
The third hypothesis is the effect of OE on the higher education level group (A1B1 VS A2B1). As seen in the table above with a score of Q = 11.06 while the value of Q table 0.05 is 3.34 then Ho is rejected, this indicates that there is a significant effect of outdoor education on the higher education level group. In the higher education group, it can be seen that the mountaineering gain score is 212. Meanwhile, the river camp gain is 104. it means that in the higher education group the OE mountaineering program is better than the OE river camp program.



Graphic 1. Environmental Awareness In High Education

Difference Between Mountaineering Program and River Camp Program in Low Education Level group

The hypothesis is the effect of OE on the low education level group. Seen in column (A1B2VSA2B2) shows the value of $Q = 13.11$ while the value of Q table 0.05 is 3.34, so H_0 is rejected. This indicates that there is a significant effect of outdoor education on the low-education group. In the low education level group, it can be seen that the mountaineering gain score is 97. Meanwhile, the river camp gain score is 225. It means that the OE river camp program is better than the OE mountaineering program in the low education group.



Graphic 2. Environmental Awareness of Low Education

Discussion

This study used an experimental method which was carried out for three days with two implementations. This outdoor education program is mountaineering and river camp. The program is carried out with different characteristics of the place, mountaineering is carried out in the mountains while river camp is carried out in rivers. The number of research results varies, there is a fairly strong belief about a person's interaction with nature can change a person's morale (Johnson and Manoli, 2008) (Andersson, 2015). In essence, environmental care is an accumulation of one's attitude, the better one is, the higher the level of concern for the environment (Al-Damkhi et al., 2009).

The results of this study indicate a significant difference in the effect of outdoor education through mountaineering and river camp programs on environmental awareness. Initially from the influence when the participants were able to unite nature with themselves until nature had become a part of them. The closer they felt to nature, the more they needed nature (Liefländer et al., 2013). It is this attachment that fosters concern that will maintain his attitude and behavior towards nature, when he loves nature, he does not need to be forced to preserve the environment by himself, he will protect nature and even be willing to sacrifice if someone will destroy it (Apollo, 2017). This is the answer to overcoming environmental problems,

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awareness that is most effective in building awareness of the environment, namely by bringing together objects with their subjects to establish mutual bonds (Mansfield et al., 2015).

If you look at the table above, the results of the study show that there is an interaction between Outdoor Education and the level of education. This means that there is a relationship between outdoor education and the level of education and vice versa. This test shows a significant effect of OE on the higher education group. The difference in the effect of the mountaineering and river camp programs is interpreted as the mountaineering program being better given to the higher education group than the river camp program. In the mountaineering program, most of the challenges given are challenges that come from nature and itself, for the higher education group this challenge is more interesting because it tests the adrenaline and explores the creativity that exists within oneself (Doyle & O'Flaherty, 2013). This is where a discussion process takes place with nature and its subconscious, when challenges threaten itself, caution arises to struggle with one's target to be able to reach the top. The more comfortable the interaction with nature, the closer he is to nature as if nature has given him services in building the strength within him (Roczen et al., 2014).

This test shows a significant effect of OE on the low education group. The difference in the effect of the mountaineering program and the river camp program is interpreted as that the river camp program is better given to groups with low education levels than the mountaineering program. the bigger river camp program is a bigger challenge, the intervention from the challenger (instructor) is in the form of a game simulation. The activities are more directed towards encouraging things, so for low education, it makes them feel more comfortable (Chan, 2012). For the higher education group, the game is considered too easy to do, so it is felt that it does not have a learning impact that inspires him (Lien & Hakim, 2013).

Conclusion

This study concludes that outdoor education activities are important activities for students and the community to get to know nature more closely, this allows the community or students to interact a lot with nature so it is expected to increase awareness of the environment. Outdoor Education (OE) has also been developed in Indonesia along with the development of various learning resources (Akin et al., 2020) Where outdoor education model of mountaineering and river camp impact can be a choice because the two have no differences. Outdoor education activities, both mountaineering and river camps, have a different impact when considering the level of education. For higher education levels, it is more suitable to be given an outdoor education model of mountaineering, while for low levels of education it is more suitable to be given a river camp model.

Acknowledgment

The author admits that there are shortcomings in this paper from samples that have unclear attribute variables, so that this level of education may have the same understanding between high and low levels of education. In the future, the author hopes that there will be continuous research on attribute variables such as gender or fitness level.

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