

Environmental Knowledge, Environmental Value, And Environmental Behavior Of Santri At Pesantren

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Abstract: There are many studies on environmental knowledge, values, and behavior, but those that study santri at pesantren (Islamic boarding schools) are still very limited because they still focus on the general public or students in formal schools. This study aims to analyze the level of environmental knowledge, environmental value, and environmental behavior of santri at pesantren around the area of Universitas Negeri Semarang (UNNES). This research is a quantitative study using a questionnaire data collection method. The research sample consisted of 208 Islamic boarding school students (santri) of pesantren around the UNNES area who were selected by stratified random sampling technique. The data analysis used in this study consisted of percentage descriptive analysis techniques. The results showed that the santri in the UNNES area have a very high level of environmental knowledge and environmental value, and a high level of environmental behavior. These results indicate that religious-based environmental education will be more effective. For this reason, conservation education must be implemented continuously and comprehensively by involving the roles of all parties. UNNES and many pesantren in the UNNES area must strengthen their synergy to create a good-quality environmental education for UNNES students, santri, and the community around UNNES.

Keywords: Environmental Knowledge, Environmental Value, Environmental Behavior, Pesantren

1. Introduction

As a country that has mega biodiversity, Indonesia is currently becoming a world concern because the level of environmental damage and extinction of its biodiversity is increasingly showing serious numbers (Ardhana, 2010; Kumurur, 2002; Misnawati, 2013; Mumpuni, Susilo & Rohman, 2015; Qodriyatun, 2010; Sumedi, 2011). Economic development, industrialization, use of fossil energy, and population growth have had a negative impact on the destruction of the environment and natural resources in Indonesia (Hamdan, Ab-Rahim, & Fah, 2018; Juliansyah, Zulham, & Gunawan, 2016; Oktavilia & Firmansyah, 2016; Robbi, Ismail, Hoetoro, 2019; Sharif, et al., 2019). Development that is not environmentally sound and community behavior that is not pro-environment have led to a drastic increase in deforestation rates (Margono, et al. 2012; Suich, et al. 2017; Tacconi, Rodrigues, & Maryudi, 2019), land degradation (Sitorus & Pravitasari, 2017; Smit, et al. 2013), water pollution, and damage to watersheds (Ompossunggu, 2018; Sukarsono & Utami, 2019), as well as uncontrolled amounts of waste (Defianti, 2018).

These environmental problems require conservation efforts, one of which can be pursued through education. Education is considered strategic because the biggest challenge in conservation is how to influence people's mindsets (Gurung, 1993). For this reason, conservation education is the answer to various environmental problems that occur (Feszterova & Jomova, 2015; Muranen, 2014; Mwenwa, 2017; Sukmawan & Setyowati, 2017). Conservation education will provide knowledge, values, and skills for the community so that they have a caring and responsible behavior towards the environment (Hernandez, Alcantara, & Limon, 2017; Zakharova, Liga, and Sergeev, 2015). As a response to the big vision of conservation and environmental education, Semarang State University (UNNES) as a higher education institution declared itself a Conservation University in 2010 (Arswendi, 2013; Kisworo & Muarifuddin, 2015). Being a conservation university means that all implementation of education, research, and community service activities at UNNES refer to conservation principles, both conservation of natural resources, the environment, arts, and culture (Ngabekti, 2015). However, these conservation efforts are not as easy as imagined. Conservation education implemented at UNNES has not fully influenced the attitudes and behavior of students towards the environment.

Conservation is often only interpreted by increasing green spaces and constructing buildings that are environmentally sound (Kisworo and Muarifudin, 2015). On the other hand, conservation values have not been deeply internalized by students and have not been fully reflected in student attitudes. There are still many students whose behavior is not pro-environment so that the vision of UNNES to become a conservation university has not

been fully achieved (Dahriyanto, Rahmawati, and Muhammad, 2018; Rarasandy, Prasetyo, and Ngabekti, 2020; Setyowati, et al., 2019).

This condition shows that all stakeholders still need hard work in realizing the vision of UNNES as a Conservation University. In addition, a cross-sectoral, interdisciplinary, and coordinated approach in one system is needed so that the conservation approach taken can be more optimal (Rachmadi, 2019). To realize this, UNNES synergizes with communities and educational institutions around the campus, including pesantren (Islamic boarding schools). In the UNNES area, there are at least 11 Salafi Islamic boarding schools (*pesantren salaf*) located not far from the campus and are places to study religion for UNNES students. Of the 11 existing pesantren, 7 of them are located in Sekaran and Patemon Village, which are the residential areas for UNNES students and close to the location of UNNES (Suarr.id, 2018).

UNNES' efforts to collaborate with pesantren in conservation education are relevant to the statement of Fua (2013). Fua (2013) stated that pesantren have a strategic value in conservation and environmental education efforts because they are institutions that have been a reference or qibla for the community since a long time ago, both in the development of Islamic education, values, character, social, culture and also as a driving force and empowerment of local communities. Pesantren are a suitable place to facilitate environmental education which is needed for the community. Its implementation at pesantren is no less optimal compared to other educational institutions because the education pattern in the pesantren allows the concept of environmental education to be applied directly in daily life so that it will be easier for santri to internalize (Aulia, Isnaini, and Khumairah, 2017).

The concept of environmental education at pesantren is closely related to the teachings of Islamic Ecotheology, which is a teaching that combines aspects of divinity with environmental aspects (Mardhiah, Aulia, and Narulita, 2014). Islamic ecotheology teaching at pesantren will be effective in conservation education. Haigh (2010) claimed that religion, both directly and indirectly, will influence human behavior towards the environment. This is supported by many theories which reveal that Islam has a concept of teaching and command of environmental conservation which has been rooted since time immemorial which is not only contained in the Al-Qur'an and Hadith textually, but is also very relevant to be implemented in real life in society (Dariah, Salleh, & Shafiai, 2016; Duh, 2010; Hekmatpour, Burns, & Boyd, 2017; Mangunjaya & McKay, 2012; Saniotis, 2012). The effectiveness of the religious approach in environmental education is also strengthened by researches from Akhtar (1996), Chai & Chen (2009), Hope & Jones (2014), Ayten & Hussain (2017), and Adi & Adawiyah (2018), stating that religion plays an important role in increasing environmental awareness behavior in society.

The role of religion in environmental character education and conservation is still not deeply understood by many parties. So far, research on the character of caring for the environment is still limited to general education institutions and the community. Research on the character of environmental care in Islamic education institutions such as pesantren is still quite minimal. This problem also occurs around UNNES, where research is still focused on UNNES students in general and has not focused on studying santri at pesantren.

Several studies regarding environmental care attitudes and behaviors among UNNES students that have been conducted include research from Riyanto, Sutardji, and Sunarko (2012), Rarasandy, Prasetya, and Ngabekti (2020), Sujana, Hariyadi, and Purwanto (2018), Rahmawati, et al. (2020), Kuswardinah and Wahyuningsih (2018), Dahriyanto, Rahmawati, and Muhammad (2018), Setyowati, et al. (2019), and Yuniawan, Masrukhi, and Alamsyah (2014). These studies have something in common with this research, namely the variables of knowledge, attitudes, and actions (behavior) of UNNES students towards the environment. However, in terms of indicators and respondents, there are differences. This study includes elements of Islamic ecotheology as an indicator of attitudes (values) and uses santri (Islamic boarding school students) around UNNES who are also UNNES students at once as respondents. For this reason, researchers conducted research on the level of environmental knowledge, environmental value, and environmental behavior on santri in the area of UNNES.

2. Methodology

This research is a quantitative study that aims to analyze the level of environmental knowledge, environmental value, and environmental behavior of santri (Islamic boarding school students) in the UNNES area. Indicators to measure environmental knowledge and environmental behavior are described from the third UNNES conservation pillar indicator, namely the pillars of environmental and resource conservation consisting of (1) biodiversity and non-biological resources, (2) green architecture, (3) clean energy, (4) green transportation, (5) waste management, and (6) paperless (Rahmaningtyas, Purasani, and Tusnayah, 2018). Meanwhile, indicators for measuring

environmental value variables use the Islamic Ecotheology indicator according to Fazlun Khalid (2002) which includes: (1) the principle of *Tauhid*, (2) the principle of *Khalifah-Amanah*, (3) the principle of *Khalq*, and (4) the principle of *Mizan*.

The population of this study consisted of 900 students from 7 pesantren (salafi Islamic boarding schools) in the UNNES area, namely in Sekaran and Patemon Village, Gunungpati Sub-district, Semarang City, who also have status as UNNES students. The research sample consisted of 208 santri selected by the stratified random sampling technique. The data collection in this study used a questionnaire method with instrument validity testing methods in the form of Product Moment correlation analysis and instrument reliability testing methods using Cronbach Alpha analysis. The data analysis used in this study is a percentage descriptive analysis technique.

3. Result and discussion

1. Overview of the Research Location

The UNNES Sekaran campus is astronomically located between 110°23'49,4" South Latitude (SL) and 07°02'59,3" East Longitude (EL). Administratively, the UNNES Sekaran campus is located in Sekaran Village, Gunungpati Sub-district, Semarang City, Central Java Province. It has an area of approximately 125,142 ha (Phramesti and Yuliasuti, 2013; Prihanto, 2018). UNNES has a vision "to become a campus with a conservation perspective and with an international reputation (Setyowati, Saddam, and Handoyo, 2019; Setyowati, et al, 2020). UNNES has declared itself a Conservation University since March 2010. This declaration is strengthened by the Regulation of the Minister of National Education of the Republic of Indonesia Number 8 of 2011 concerning the Statute of UNNES (Saddam, Zurohman, and Bahrudin, 2018).

UNNES has collaborated with many pesantren in the campus area to realize the vision of UNNES as a conservation university with an international reputation. In this study, what is meant as the pesantren in the campus area is pesantren located in Sekaran and Patemon Village, which are places to study Islam and places to live for santri who are also UNNES students. In the UNNES Sekaran campus area, there are seven Salafi Islamic boarding schools (pesantren), namely: 1) Durrotu Aslussunnah Wal Jamaah Islamic Boarding School, 2) An Najma Islamic Boarding School, 3) As Sabila Islamic Boarding School, 4) Miftahu Rahmatillah Islamic Boarding School, 5) Salafi Al Asror Islamic Boarding School, 6) Huffadzul Qur'an Al Asror Islamic Boarding School, and 7) Luqman Hakim Islamic Boarding School.

4. Research Result

a. The Level of Environmental Knowledge of Santri at Pesantren in the UNNES Area

This study examines the character of environmental care of santri the UNNES area. The character of environmental care used refers to the theory of Kaiser, Wolfing, and Fuhrer (1999) consisting of three variables, namely: environmental knowledge, environmental value, and environmental behavior. Based on the results of the analysis of the respondents' answers in the questionnaire, it was found that out of 208 respondents, 1 santri (0.5%) had a level of environmental knowledge in the "sufficient" category. Then, 59 santri (28.4%) have a level of environmental knowledge in the "high" category. Meanwhile, the remaining 148 respondents (71.2%) had a level of environmental knowledge in the "very high" category. This shows that most of the santri in the UNNES area have a very high level of environmental knowledge. The results of the environmental knowledge level analysis can be seen in table 1 and figure 1.

Table 1. The Results of Environmental Knowledge Level Analysis

Criteria	Frequency	Percentage (%)
Low	-	-
Sufficient	1	0,5
High	59	28,4
Very High	148	71,2
Total	208	100

Source: (Data Analysis, 2020).

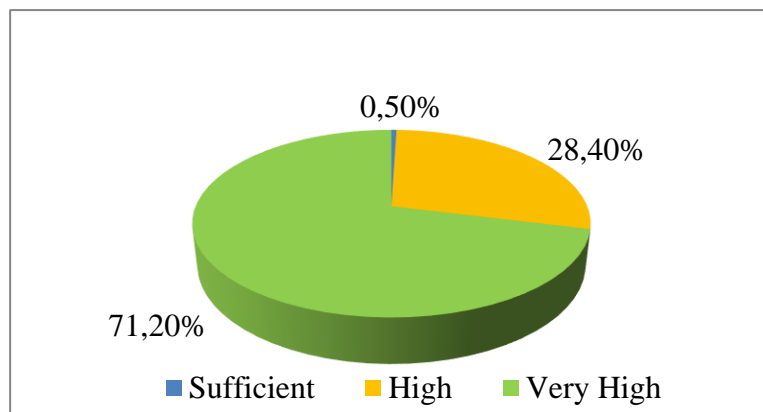


Figure 1. The results of environmental knowledge level analysis

b. The Environmental Value Level of Santri at Pesantren di the UNNES Area

Environmental Value is a value or attitude that a person has regarding the environment. In general, the average level of environmental value for santri in the UNNES area is in a very high category. As for the percentage descriptive analysis, it can be seen that from a total of 208 respondents who filled out the questionnaire, 1 respondent (0.5%) had a level of environmental value in the "sufficient" category. Then, 29 respondents (13.9%) had a level of environmental value in the "high" category, while 178 santri (85.6%) had a level of environmental value in the "very high" category. So, it can be concluded that the majority of respondents have a high level of environmental value. The level of environmental value that the santri in the UNNES area have can be seen more clearly in Table 2 and Figure 2.

Table 2. The Results of Environmental Value Level Analysis

Criteria	Frequency	Percentage (%)
Low	-	-
Sufficient	1	0,5
High	29	13,9
Very High	178	85,6
Total	208	100

Source: (Data Analysis, 2020)

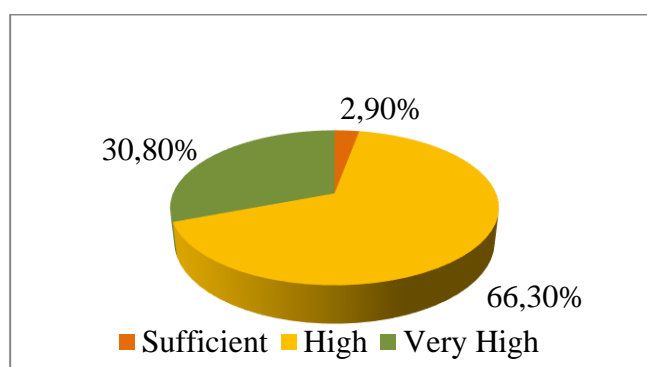


Figure 2. The results of environmental value analysis

c. The Level of Environmental Behavior of Santri at Pesantren in the UNNES Area

Environmental behavior is a person's actions towards the environment or someone's actions in treating, managing, and utilizing the environment. Based on the percentage descriptive analysis, the results showed that 6 respondents (2.9%) had a level of environmental behavior in the "sufficient" category. Then, 138 respondents (66.3%) had a level of environmental behavior in the "high" category, while the remaining 64 respondents (30.8%) had a level of environmental behavior in the "very high" category. Thus, it can be concluded that the majority of respondents have a level of environmental behavior in the "high" category. The level of environmental behavior that santri in the UNNES area have can be seen more clearly in Table 3 and Figure 3.

Table 3. The Results of Environmental Behavior Level Analysis

Criteria	Frequency	Percentage (%)
Low	-	-
Sufficient	6	2,9
High	138	66,3
Very High	64	30,8
Total	208	100

Source: (Data analysis, 2020)

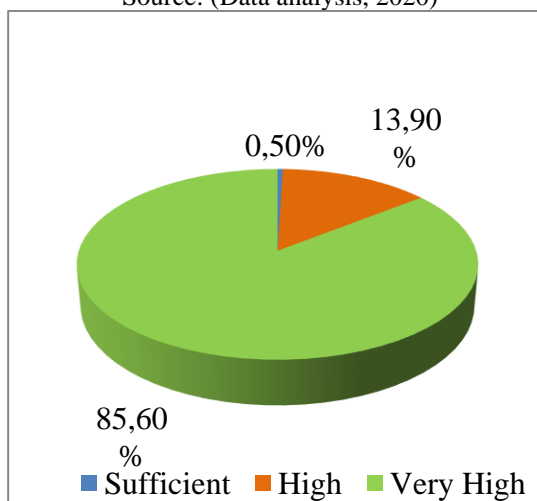


Figure 3. The results of environmental behavior intention level analysis

After analyzing the level of character of environmental care for each variable, then an analysis of the character of the environmental care level is carried out in general or as a whole. Based on the percentage descriptive analysis, the result showed that the majority of boarding school students around the UNNES area have a very high environmental character. Of the 208 respondents, 56 respondents (26.9%) had the character value of caring for the environment in a "high" category. Meanwhile, 152 santri (73.1%) had the character of caring for the environment in a "very high" category. The results of this categorization can be seen more clearly in Table 4 and Figure 4 below.

Table 4. The Results of Environmental Care Character Level Analysis

Criteria	Frequency	Percentage (%)
Low	-	-
Sufficient	-	-
High	56	26,9
Very High	152	73,1

Total	208	100
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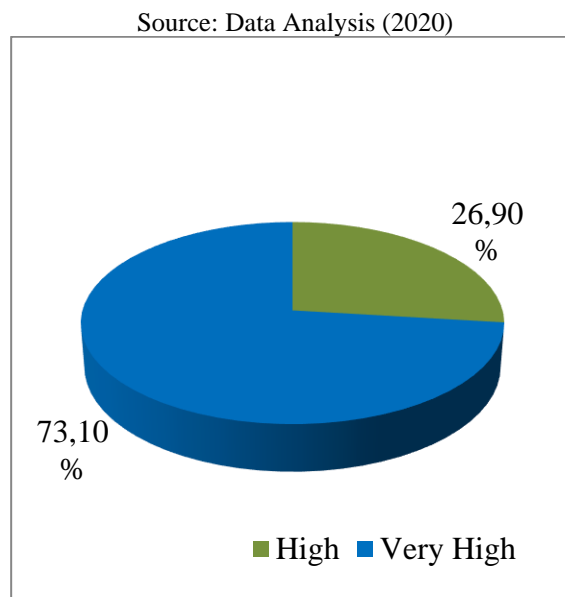


Figure 4. The results of environmental care character level analysis

5. Discussion

a. The Level of Environmental Knowledge, Environmental Value, and Environmental Behavior of Santri at Pesantren in the UNNES Area

b.

Based on the results of data analysis, it is known that the level of environmental knowledge and environmental value of santri in the UNNES area is in the "very high" category. Meanwhile, the level of environmental behavior among santri in the UNNES area is in the "high" category. This result is slightly different from several previous studies. The majority of previous studies show that the average environmental knowledge and environmental value for UNNES students are in the high category, while the average environmental behavior is in the medium category. The results of this study show that the value of environmental care character is higher compared to the results of previous studies involving UNNES students in general as respondents (Dahriyanto, Rahmawati, and Muhammad, 2018; Kuswardinah and Wahyuningsih, 2018; Mulyono, Budi, Nuryana, and Mustofa, 2018; Rahmawati, et al., 2020, Rarasandy, Prasetyo, and Ngabekti, 2020; Riyanto, Sutardji, and Sunarko, 2012; Sujana, Hariyadi, and Purwanto, 2018).

These results prove that conservation education implemented at UNNES and the cultivation of Islamic religious knowledge and values in pesantren can provide knowledge and environmental values for santri in the UNNES area. The teachings of the pesantren are complementary to the conservation program implemented at UNNES. The conservation program develops students' knowledge of environmental issues and also instills conservation values in them. It also happens in pesantren, students are educated on environmental knowledge and values, both explicitly and implicitly. Explicit instilling is carried out through the learning curriculum and activities at the pesantren, while implicit instilling is carried out through the merging and collaboration of values in the learning process at the pesantren or lectures and chanting from *kiai* (religious teacher or Islamic missionary), which indirectly contains the substance of knowledge and values about the environment (Aulia, et al., 2017; Muhatrom, 2014).

Some pesantren used to impart environmental knowledge and values explicitly through fiqh teachings, namely through *Fiqh Albi'ah* (Environmental Fiqh) and through *Aqidah Akhlaq* (faith and morality) education which can foster the values of *Hablun Minallah* (relationship with Almighty God), *Hablun Minannaas* (relationship with fellow human beings), and *Hablun Minal 'Alam* (relationship with nature or environment). The teachings of *Fiqh* and *Aqidah Akhlaq* are parts of the teachings of Islamic ecotheology which accommodate the substance of the teachings of divine-based environmental conservation. With the teaching of ecotheology, santri are educated not

to interpret the environment from a mere secular or worldly perspective but are also educated to interpret and treat the environment according to *ukhrawi* (religious) rules.

Meanwhile, implicitly the *kiai* or *ustaz* in the pesantren always give advice (*mauidzoh*) to their santri on various occasions, both in learning activities, reciting the Quran, *sowan ndalem* (hospitality or guests-receiving), or in other pesantren activities. This advice-giving usually contains the values of Islamic law and the values of life which, although not explicitly mentioning environmental teachings, can contain values that are correlated with the environment, for instance, the values of love for others, values of respect for others, values of responsibility, values to always do good to all of God's creatures, and so on (Nisa, 2019).

Islamic teachings that are implemented in the pesantren cannot be separated from the life of the pesantren which then becomes a life guide for all the components there. While conventional educational institutions teach many students how to respect the environment, pesantren have already taught that cleanliness is part of faith (Aulia, et al. 2018), and cleaning up one piece of trash equals one reward from Allah the Almighty (Hidayat, 2014). Pesantren have an important and strategic role in the protection and management of the environment, which has long roots because it is the oldest educational institution in Indonesia. Islamic boarding schools can combine religion, morals, ethics, and values so that they can create and transform noble characters in the younger generation, including those who care for the environment (Bahri; 2016; Herdiansyah, Jokopitoyo, and Munir, 2016; Nisa', 2019).

The cultivation of environmental values in pesantren has been carried out for a long time. Pesantren always tries to adapt, respond to, and resolve issues developing in society, including environmental issues. Many pesantren realize that environmental issues are global issues that have a great urgency to be resolved immediately. Pesantren are also aware that environmental damage will not only disrupt the running of the socio-economic life, but will also disrupt spiritual and religious activities. Therefore, protecting the environment is the same as maintaining worship practices (Hidayat, 2014). Then, pesantren also realize that protecting the environment is an obligation for every human being as a caliph or leader on earth. As caliph, humans hold the mandate to take advantage of nature (*intifa'*), study (*i'tibar*), and maintain its sustainability (*islah*). For this reason, pesantren always instill environmental values in their santri (Fua, 2013).

In this study, it is known that the average level of environmental behavior among santri in the UNNES area is in the high category. The high level of environmental value at pesantren in the UNNES area, apart from being influenced by the cultivation of knowledge and values, is also influenced by the education system at the pesantren. There, santri are accustomed to live in a discipline in all respects to create structured patterns of behavior. Pesantren are a place for santri to study and live and this indirectly becomes a miniature reflecting a complex life just like in the social community (Nisa', 2019).

Pesantren consist of santri with various backgrounds and characters so that they can learn to tolerate, understand, and take care of each other to create a feeling of solidarity and togetherness. These values can raise environmental awareness in santri because they feel that they live together so they must behave properly to create a sense of comfort to be together, including their relation to environmental care behavior. In addition, at pesantren, santri are accustomed to work together to maintain the comfort and cleanliness of the environment through routine activities in the form of community service (*ro'an*) and pickets. Violation of this activity will be subject to moral sanctions so that the santri will participate in these *ro'an* and picket activities with discipline. This habit can eventually create a pattern of disciplinary behavior in the spirit of the santri at pesantren.

The environmental education pattern in the pesantren is able to produce santri with high environmental knowledge, environmental value, and environmental behavior. The education pattern at pesantren as described above is following the research of Sriyanto, Kurniawan, Suharini, and Trimasukmana (2018) regarding the strategy of instilling a nationalist-religious character at pesantren. Although research from Sriyanto, Kurniawan, Suharini, and Trimasukmana (2018) does not focus on the character of caring for the environment, but rather focuses on nationalist-religious characters, the results of this study are quite relevant to that study because they are still in the scope of character education.

So, environmental care character education implemented at pesantren in the UNNES area is in accordance with the results of research by Sriyanto, Kurniawan, Suharini, and Trimasukmana (2018), namely through three strategies consisting of: 1) through self-development programs in the form of routine activities, spontaneous activities, modeling, and habituation, 2) through an explicit curriculum of learning activities at pesantren, 3)

through implicit activities in pesantren, and through the culture of pesantren life. This strategy is also relevant to several indicators of the implementation of ecology-based pesantren (*ekopesantren*) according to Mangunjaya (2012), especially non-structural aspects, namely those related to policies in the implementation of education, curriculum, budget policies, management, and others.

This study shows that the implementation of ecotheology-based environmental education at pesantren is a right and strategic step. This is in accordance with what is stated by Ashtankar (2016) in Nawawi, Gunawati, Sunarto (2017) that the best way to preserve the environment is by revitalizing an environmental perspective that has long been abandoned, namely referring back to religious teachings and reviewing and adjusting policies for implementing modernization appropriately. At pesantren, environmental education is implemented in accordance with the values of the pesantren which are the results of the interpretation of the Qur'an, Hadiths, classical *kitab* (books written by ulema), and the results of deliberations by the board and *kiai* of the pesantren (Efendi, et al. 2017).

Llewellyn (2003) in Herdiansyah, Sukmana, Lestarini (2018) also stated that religion-based environmental education will be more effective because the basis of spirituality will be rewarded in the future. The combination of religious elements and religious teachings in environmental education at pesantren can provide a real learning experience so that it can increase the knowledge and awareness of santri in managing and utilizing the environment (Crowe, 2013 in Fua, et al., 2018). Then, religious movements can inspire people that harmonization between nature and religious education will be a strategic step to solve environmental issues (Swam, 1978 in Fua, et al. 2018).

The results of this study then refute the opinion of Sukir (2018), exemplifying that santri have low awareness in maintaining a clean environment. These results also deny the opinion of Lutfauziyah, et al. (2016) and Abu-Hola (2009) which state that the cleanliness of the pesantren is not maintained due to the culture of the santri who dispose of garbage inappropriately and irregular waste management so that they are identical to the culture of *kemproh* (exceptionally dirty). In fact, many pesantren have instilled environmental values since a long time ago and now more and more santri are aware of the importance of maintaining cleanliness and environmental sustainability.

The results of this study and other relevant studies indicate that the conservation program implemented by UNNES has had a positive impact on increasing knowledge, attitudes, and environmental behavior of UNNES students. Although the positive impacts have not completely affected the increase in environmental awareness of all UNNES students, most of them already have environmental concerns at medium to high levels. This requires continuous efforts and the role of all parties to improve the quality of conservation education at UNNES. This is in accordance with the principles in character education according to Sriyanto, Kurniawan, Suharini, and Syifaiddin (2019) that the implementation of character education must be carried out in a sustainable, comprehensive manner, and also involves the roles of all parties.

6. conclusion

The level of environmental knowledge and environmental value of santri (Islamic boarding school students) around the UNNES area is in the "very high" category. Meanwhile, the level of environmental behavior among santri in the UNNES area is in the "high" category. This study shows that the implementation of ecotheology-based environmental education in pesantren is a right and strategic step. These results indicate that religion-based environmental education will be more effective because the combination of religious elements and religious teachings in environmental education in pesantren can provide a real learning experience to increase the knowledge and awareness of them in managing and utilizing the environment. The results of this study also refute the negative stigma regarding pesantren which states that many santri have low awareness in maintaining a clean environment so that the pesantren has a dirty environment.

Conservation education must be implemented continuously and comprehensively by involving the roles of all parties. UNNES and all pesantren in the UNNES area must strengthen their synergy to create a good-quality environmental education for UNNES students, the santri, and the community around UNNES. Pesantren around the UNNES area must always equip students with Islamic-based environmental values and create a boarding school life that allows the realization of a great-quality environmental education.

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