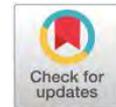


Research Article

Environmental education to build school members' character



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ABSTRACT

Environmental education provides opportunities to instill character education for adolescents in globalization era. However, positive effects of environmental education on character building are rarely studied. This study aimed at analyzing the effect of environmental education on character building of school members. This study used descriptive qualitative method with purposive sampling technique. SJHS 1 Wajak and SJHS 1 Gondanglegi were selected as research locations as they were Adiwiyata Schools. The data were collected through observation, interview, and documentation techniques. The results showed that environmental education had affected student character building. Various activities and existing regulations affect student characters, such as honest, self-confidence, responsibility, discipline, caring for fellow human beings, caring about nature, courage, religion, and creativity. Habituation and modeling are strategies used in constructing characters. Therefore, environmental education is recommended to be implemented in various schools as an effort to improve the character of school members.



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INTRODUCTION

Technology and science have developed rapidly and have influenced various aspects of life to the culture of society (Cleveland et al., 2016; Ergashev & Farxodjonova, 2020). A nation that fails to adapt to this rapid development will result in the loss of identity, morals, and norms. Globalization can also change someone to become a different person and forget their cultural identity (Ergashev & Farxodjonova, 2020; Novianto & Meidasari, 2018). In line with this, bullying in schools is increasingly occurring. habits that can affect physical and mental health to depression in the victim (Hicks et al., 2018). Papalia et al. (2018) stated that the harassment that commonly occurs among students can lead to violence and other criminal acts in the future. This issue is closely related to educational problems, including academic achievement, school engagement, and special educational needs.

Schools are expected to be a good environment for the nation's future generations to gain knowledge and build character. Education in schools is very complex, and its components complement each other thus supporting the mental health and well-being of students (Hoare et al., 2017). The implementation of character education has proven to be effective in the school environment, which can shape students with religious,

honest, sincere love and nationalist characters. (Marini, 2018). Therefore, character education is expected to be implemented to the younger generation from an early age.

Character education can be integrated through formal, non-formal, to informal education. Character education can not only be effectively integrated into learning, but also in extracurricular activities, sports, and students' daily activities in interacting with teachers, friends, and teaching staff in the school environment (Karo-Karo et al., 2018). One of the learning conditions that has the potential to empower students' character is environmental education-based learning conditions that appear in Adiwiyata program.

The Adiwiyata program is included in the Indonesian Ministry of Environment's program to encourage the creation of knowledge and awareness of school members in an effort to conserve the environment. The Adiwiyata program is an environmental education application to create school members who are responsible for protecting, managing and preserving the environment (Iswari & Utomo, 2017). Environmental education in Adiwiyata Schools is an additional activity, integrated into subjects, and implemented in daily life (Alpusari, 2013). Environmental education in Adiwiyata Schools is not only for students, but also involves the local government and the surrounding community (Desfandi, 2015). Adiwiyata School invites all school members to involve in waste management, crop conservation, energy-saving, healthy lifestyle, and creative activities. and conducting environmental care actions (Utomo et al., 2016). Hopefully, students will inculcate the habit of *baiknyadi* school, home, and community.

Unfortunately, efforts to strengthen character education in Indonesia are still not running optimally. Character education has not fully integrated into schools' learning process (Wuryandani et al., 2016). Various obstacles are found both from inside and outside the school because social changes in society also change their values, norms and culture (Yulianti et al., 2016). Furthermore, existing educational policies and curricula do not fully support teacher competence and understanding. On the other hand, learning should not only be oriented towards cognitive abilities, but must also be oriented towards skills and attitudes aspects (Ahmad, 2014; Widiatmaka, 2016).

As an interesting and urgent program, the Adiwiyata Program has been able to attract the attention of several researchers. Some researchers link environmental literacy empowerment to the Adiwiyata program, for example research at the Adiwiyata School in Banda Aceh (Desfandi et al., 2017; Kamil et al., 2020) and in Malang (Nurwidodo, 2020). Another study examined students' green behavior at Adiwiyata School (Rachman & Maryani, 2018). There is also research that examines **students' environmental awareness** (Adawiah, 2019) and environmental care attitudes at Adiwiyata Schools (Furda et al., 2021; Prasetyo et al., 2020). Some researchers have also studied character education in Indonesia, although it is still limited to a particular focus of study. Several studies have examined the role of certain subjects in instilling student character, such as in social studies (Agung, 2018) and physics subject (Suherman, 2018). Another study examines the application of environment-based learning that is integrated with character education (Rokhman et al., 2014). However, research that examines the role of environmental education in Adiwiyata Schools in shaping student character is still difficult to find. In line with these information, there needs to research on the influence of environmental education as a means of character building. This study aimed at analyzing the environmental education in Adiwiyata Schools and analyze the influence of environmental education on the formation of school **members'** character. This research is essential to know the impact of the environmental education approach in fostering good habits and its relationship with character building. Besides, the findings obtained can be the basis of development research related to character education and environmental education. The study results are also can be used as a reference in determining suitable media to implement character education.

METHOD

A qualitative descriptive design was used in this study. This study was focused on how environmental education in Adiwiyata Schools can build the character of school members. SJHS 1 Wajak and SJHS 1 Gondanglegi were chosen as research location. These two schools were chosen because they are Adiwiyata Schools located in the Malang area. The purposive sampling technique was choose as sampling technique in this study. In this case, The respondent involved in this study were respondent who have experience related to Adiwiyata. The respondent were selected based on criteria including (1) willingness to be an informant, (2) knowing the background and condition of the school, (3) understanding the student's character development strategy, and (4) directly involved with the Adiwiyata program. Respondents of this study included the principal, the deputy principal of the student affairs school, the deputy principal of the school for infrastructure, the chief executive of the Adiwiyata program, and two teachers.

Data was collected using observations, interviews, and documentation techniques. The instruments used were observation guides and interview guidelines with voice recorders and cameras. Researchers made **observations to observe the entire school area and school members' activities related to character building**. The observation process in the school environment includes classrooms, teacher's rooms, canteens, toilets, mosques, and activities in the classroom and outside the classroom or during breaks. Interviews were

conducted to dig deeper knowledge related to character building strategies through environmental education. Furthermore, the documentation process was conducted to examine Adiwiyata documents, such as award lists and recaps of activities to support the findings. The data was analyzed interactively through data reduction, organized data presentation, interpretation, and drawing conclusion (Junaid, 2018). Data validation was performed using techniques and source triangulation.

RESULTS AND DISCUSSION

This study which examines the character building of these students involves two Adiwiyata Schools as research locations. SJHS 1 Wajak was entitled as an Adiwiyata School in December 2019. Based on interviews with several teachers and supervisors of Adiwiyata, this school has a high concern for the environment since the initiation of the Adiwiyata program. This school has been active in improving all Adiwiyata aspects to obtain the "Adiwiyata Mandiri School" **status**. Before achieving the Adiwiyata Mandiri School status, SJHS 1 Wajak succeeded in winning the 2017 Provincial Healthy School Environment Competition. Not surprisingly, this school has various facilities related to environmental care such as bio pores, family medicinal plant gardens, school forests, organic and inorganic trash bins, lemongrass gardens, and bee farms. All of these facilities are used as learning media and familiarize students with environmental culture. SJHS 1 Gondanglegi is also a district level Adiwiyata School. This school is active in environment-based activities such as composting, waste sorting, recycling, and a healthy canteen. Efforts to internalize environmental-cultured behavior are not only about school predicates but also about student habituation in school which is very important for everyday life.

The results of interviews, observations, and documentation show that both schools use environmental education to build student character. The results of observations and interviews show that several aspects can be maximized in character building through environmental education. Character education is a major milestone in life that becomes the basis for individual growth (Kamaruddin, 2012). Accompanied by academic education, character education is important for enhancing the morals of the next generation. Educational institutions have a major contribution in producing students with good academic results and virtuous character. Good character will maximize the function of the knowledge obtained to be realized in daily behavior (Nurhasanah & Nida, 2016).

Strengthening character education in Indonesia actually aims to create students with a culture and spirit of Pancasila. Related to that goal, general knowledge is not sufficient to shape student character (Davidson et al., 2011). One of the methods of character education in schools is to understand, feel, and do (Setiawan & Qomariyah, 2017). The daily interactions between teachers and students will channel good habits and teacher become role models for students in their behavior (Heriansyah, 2019). Activities outside the classroom such as scouts also play an important role in character building, where students are directly trained to deal with real situations (Mislija et al., 2016). Furthermore, due to all of those activities become their habits, students will apply what they have learned in daily activities at school and at home.

Experiential learning in environmental education provides students with learning experiences through understanding, skills training, and attitudes to form a caring character for the environment (Istikomayanti et al., 2016). Environmental education is not only about learning about gardening or keeping schools clean but also learning about environmental management and social interactions between each other (Fahmy et al., 2015).

In the Adiwiyata program, all school members have an important role in supporting the running of the program. The implementation of this program will result in collaboration and cooperation between components within the school. The principal is the decision maker; teachers and teaching staff are mentors and supervisors; while students carry out their responsibilities in environmental management. At Adiwiyata School, there are usually working groups that are divided according to the policies of each school. SJHS 1 Wajak divides work groups based on class with the homeroom teacher as a companion and supervisor. The workgroup moves between classes each week. There are several working groups in charge of school gardens, toilets, canteens and parks. The group trains students to be responsible for the tasks assigned to them. Collaboration is also formed because all group members supervise the work of the working group. Students work together to maintain cleanliness, monitor violations, report, and remind friends who make mistakes. Apart from working groups, students also work together to clean the school environment every 15 minutes at the start of sports time to help cleaners (Figure 1). This activity also taught them that school cleanliness is a shared responsibility. The teacher divides the students into groups to clean the designated areas. The tasks carried out include: sweeping, picking up trash and placing it according to categories, and watering the plants. In addition, one group was assigned to collect from each class and then disposed of to a waste processing facility.

The school has several rules that must be obeyed by every member of the school. The rules for disposing of garbage in an appropriate place may be simple, but the habituation and example given by the teacher will affect the character of the students. Furthermore, in all areas of the school there are organic and inorganic

trash bins. Every school member is given the knowledge to distinguish organic and inorganic waste. There is also a working group that monitors trash can violations in each class. Therefore, students are trained to be disciplined by always throwing garbage in the place provided regardless of being supervised or not. They are trained to be disciplined based on responsibility and environmental care and the school promote them to become aware with their environment.

Environmental awareness is the same as social awareness. Students are given knowledge about the importance of protecting nature and the impact of natural damage. They are also taught to protect nature for future generations. All subjects are also integrated with environmental education by raising examples or applications taken from everyday life so that they are easily understood by students. As well as environmental awareness, social care is also trained. Students are trained by sharing with the local population. SJHS 1 Wajak has partner schools and villages that were provided with training and understanding of the Adiwiyata program. Students also participate in helping the local community. Meanwhile, students are not only trained to care about the environment but also care for social creatures.



Figure 1. students work together to clean the school environment every 15 minutes at the beginning of sports time

Based on observations in SJHS 1 Wajak and SJHS 1 Gondanglegi, these two schools have healthy canteens that sell healthy food without additives. The cafeteria at SJHS1 Wajak received stars from the Food and Drug Administration and the Ministry of Health. The food sold is varied and healthy. All food tastes good even when steamed or grilled. The food sold is also plastic-free and additive-free. The canteen also does not provide excessive fry (Figure 2). Research by Hanum (2016) stated that fried foods are the highest contributor to trans fat, which is recommended to consume less than 1% of the daily calories needed. Excess consumption can trigger the blockage of blood vessels which increases the risk of heart attack.



Figure 2. Healthy food canteen in research locations

Food items sold in the canteen also use fresh and homemade ingredients. Canteen staff are given training to use healthy food ingredients without preservatives. For example, black grass jelly which is often used as an ingredient in drinks because it tastes good and is easily combined with other ingredients. Black grass jelly is an ingredient that is easily available in the market at a low price. In addition, counseling by the health center regarding the cleanliness of foodstuffs was the reason the canteen officers decided to make grass jelly instead of buying at the market. Apart from being healthy, they are also more cost effective, even though the process is more complicated. One respondent stated that he paid attention to the effect of the materials he used on the health of students and all school members. This resulted in environmental awareness and social concern from

the canteen staff and teachers. Without their awareness, a healthy canteen will not exist and cannot be implemented. This healthy canteen aims to familiarize school residents to care about health by consuming nutritious food.

A healthy canteen is not only about healthy food, but students are also taught to be disciplined and responsible for returning cutlery. This canteen does not use plastic wrap to familiarize students with using containers when buying food. The working group supervised students who did not return the container to its place and fined them for breaking the rules. Besides being trained in discipline, students are also trained to be honest. They are prohibited from bringing packaged snacks from home. There is a random bag check at least once a week. Students are trained to be disciplined in obeying rules. Students who deliberately bring packaged snacks are asked to be honest and collect them to return after school. The teachers advised that it was all for the good of the students and for a more sustainable environment.

In addition to the healthy canteen concept, the canteen at SJHS 1 Gondanglegi also uses the honesty canteen concept. No cashier supervises payments; the student pays and gets the change at the space provided. This concept has been running for more than 5 years. Honesty of students is trained by paying according to what they take. According to canteen staff, the amount of money earned is more than the proceeds from sales. This shows that the honesty canteen can train students to be honest in everyday life.



Figure 3. The appearance of garden in school (seeds brought by 7th grade students for the 2019-2020 school year)

Furthermore, both SJHS 1 Wajak and SJHS 1 Gondanglegi have gardening activities. Farming, composting and biopori are some of the weekly and monthly activities. Farming activities are usually carried out at the beginning of the new school year. Students are asked to bring seeds to be planted together in the school garden (Figure 3). SJHS 1 Gondanglegi utilizes the front area of the class to be managed by each class. SJHS 1 Wajak has a large school garden area. The area is divided into several parts, such as the plant nursery area around the teacher's room, the garden area in front of the school, the area for family medicinal plants, and the lemongrass garden area for cultivation. This activity can make students care for and preserve plants. The teacher includes a religious aspect in this activity. Students are asked to take care of plants as a form of gratitude for God's blessings and creations. Plants are one of God's blessings that produce oxygen that humans need to survive.

The other activity in Adiwiyata School is composting and make Bio Pori. Composting is done 4 to 5 times a year. Bio Pori is filled every day or every time you find leaf litter. The school has the slogan "Look at the trash to get it" so that the school environment looks very clean by getting students accustomed to picking up the trash they find. Plants are cared for every day by the person in charge or the working group in charge. Students are

trained to be creative in managing the park and to work hard and be active in farming activities outside the classroom learning. In addition, in their spare time, students are given positive activities.

Furthermore, the predicate "Adiwiyata Mandiri" means that SJHS 1 Wajak has connections with several schools and other agencies such as health centers, village offices, plantations, and the community around the school. This condition allows this school to get guest visits for comparative studies or counseling. This is of course the teacher's concern to give students an example of how to be friendly and polite. Students are always reminded to behave properly when there are guests or not. They are also trained to communicate well. All students were given the same opportunity to study environmental education, explain the work program of the entire working group, or explain daily activities at school (Figure 4). Some students serve as guides while others supervise explaining the work program of each work group. Thus, not only students who supervise learning but also all students must learn to have the same understanding. They learn to be confident and dare to speak in front of a crowd. Then, based on the results of interview, some students gave good responses. Students who do not understand politely invite their friends to help answer the researchers' questions. They readily help the researcher when he has a problem. The results of an interview with one of the teachers suggested that this polite and friendly attitude carried over when students did activities outside of school. They tend to behave well when participating in activities outside of school. This habit represents their characteristics and is recognized by other schools.



Figure 4. Students are well trained to explain their school environment

As like other Adiwiyata School, SJHS 1 Wajak have enough green open space. Trees, grass, family medicinal plants, and other green plants thrive in the school environment. The air circulation and lighting in the classroom are well designed to be environmentally friendly and energy efficient. In addition to supporting character building, Adiwiyata School is very supportive of students to be able to study well and calmly. According to [Kweon et al. \(2017\)](#), trees should be nurtured and increased in number to reduce stress and restore mental fatigue to students. Stress levels can be reduced by increasing exposure to natural elements such as trees, grass or shrubs ([Jiang et al., 2015](#)).

Environmental education at Adiwiyata School is one way of carrying out character education by promoting exemplary and habituation ([Rokhman et al., 2014](#)). Good behavior can be managed through competence, desire, and behaviors ([Pane & Patriana, 2016](#)). Students are motivated by various interesting activities outside the classroom to arouse their desire and increase their competence. Indirectly, student behavior is closely related to the intention to act. The intensity of student involvement in environmental activities will affect their personality, shape their responsibility, and result in a good perspective and management skills ([Pratiwi et al., 2019](#)). The educational program in the Adiwiyata frame has many innovations and strategies to shape character. According to [Meindl, Quirk, & Graham \(2018\)](#), the best strategy for improving student morale is by

doing “secretly”. Secretly means that moral education is not automatically given to students but is integrated into their daily activities. Moral education will be more effective and efficient by emphasizing self-control and humility. Self-control and emotional intelligence are positively associated with shaping the character of students in the school (Siregar et al., 2018). These two abilities will build socialization between physical, social, cognitive, and emotional development.

The Adiwiyata program aims to create an environmentally friendly school with the hope of increasing the character of caring for the environment in all school members. (Iswari & Utomo, 2017). Environmental education teaches students about the good and bad effects of their actions. It builds students' skills and attitudes to reinforce their thinking, uphold their values in life, and influence them in making decisions (Teksoz, 2011). Environmental education obtained by students affects the process of problem solving and finding solutions, so that students are interested in behaving well towards the environment through small actions that they can do independently (Husamah et al., 2020). Lestari (2018) found that the internalization of environmental awareness values is accompanied by the formation of several characters such as independence, creativity, discipline, religiosity, curiosity, and responsibility. The participation of school members in environmental conservation is based on good morals by having the characters of discipline, responsibility, and high concern (Situmorang & Tarigan, 2018). The findings show that some characters are formed by habituation and modeling in students' daily activities at school. Honesty, confidence, responsibility, discipline, social care, caring for nature, courage, religiosity, and creativity are embedded in Adiwiyata activities. School members are unintentionally invited to do things repeatedly and make it a habit, affecting their behaviors and shaping their characters.

The Adiwiyata program is now being implemented in more schools in Indonesia. However, this program has not been implemented in all regions of Indonesia. Environmental education in the Adiwiyata program must be implemented optimally by all schools in Indonesia with the hope that character development can be carried out well. Thus, the future generations of the nation can be educated and have better morals. Furthermore, The Adiwiyata program worked well with the support of school principals and teachers. The role of the principal is very large in the running of the program (Lasno et al., 2019). As a leader, the principal can influence and encourage members to achieve a goal. The results of observations and interviews show that several school principals of SJHS 1 Wajak indicate that this school principal is an environmentally sound leader. In line with this, teachers also have very high motivation for environmental management (Indiani et al., 2020).

Apart from providing significant findings, this study has limitations because it was only conducted in SJHS 1 Wajak and SJHS 1 Gondanglegi. The results obtained may differ from one school to another even though it is the same as the Adiwiyata program. The consistency of participation and the level of adiwiyata influence the development of each school. Constraints, challenges at each Adiwiyata level and each school are different from one another, so that each school results in different results. This research is also limited to analyzing the implementation and influence of environmental education on character building efforts. Therefore, it is necessary to conduct further studies regarding the effectiveness of the Adiwiyata program as a means of character building.

CONCLUSION

Character building can be done through education organized by the school environment. Environmental education at Adiwiyata School is a program that invites students to care about their environment and participate actively in environmental conservation. SJHS 1 Wajak and SJHS 1 Gondanglegi are Adiwiyata Schools that carry out participatory and sustainable environmental education. Various positive activities in environmental education at Adiwiyata School are found both inside and outside the classroom. The strategies used to build student character through environmental education are habituation in daily life and exemplary by teachers and staff. Some of the existing activities and regulations affect the personality of students to become honest, responsible, religious, and creative.

Environmental education through the Adiwiyata program provides good benefits for efforts to develop student character. However, the Adiwiyata program evaluation also needs to be improved so that environmental education can be carried out optimally and helps shape the character of the school community. In addition, this research is still limited to an analysis related to the implementation and influence of environmental education on character building efforts. Other research is needed regarding the effectiveness of the Adiwiyata program as a means of character development in Indonesia.

REFERENCES

Adawiah, R. (2019). Implementation of Adiwiyata program to build environmental awareness. *Journal of*

- Wetlands Environmental Management*, 7(2), 106–114. <https://doi.org/10.20527/jwem.v7i2.196>
- Agung, L. (2018). Character education integration in social studies learning. *Historia: Jurnal Pendidik dan Peneliti Sejarah*, 12(2), 392–403. <https://doi.org/10.17509/historia.v12i2.12111>
- Ahmad, T. A. (2014). Kendala guru dalam internalisasi nilai karakter pada pembelajaran sejarah. *Khasanah Pendidikan*, 7(1), 1–15. <https://doi.org/10.30595/jkp.v7i1.664>
- Alpusari, M. (2013). Analisis kurikulum pendidikan lingkungan hidup pada sekolah dasar Pekanbaru. *Primary: Jurnal Pendidikan Guru Sekolah Dasar*, 2(2), 10–17. <https://doi.org/10.33578/jpfkip.v2i02.1957>
- Cleveland, M., Rojas-Méndez, J. I., Laroche, M., & Papadopoulos, N. (2016). Identity, culture, dispositions and behavior: A cross-national examination of globalization and culture change. *Journal of Business Research*, 69(3), 1090–1102. <https://doi.org/10.1016/j.jbusres.2015.08.025>
- Davidson, M., Khmelkov, V., Baker, K., & Lickona, T. (2011). Values education: The Power2Achieve approach for building sustainability and enduring impact. *International Journal of Educational Research*, 50(3), 190–197. <https://doi.org/10.1016/j.ijer.2011.07.006>
- Desfandi, M. (2015). Mewujudkan masyarakat berkarakter peduli lingkungan melalui program Adiwiyata. *SOSIO DIDAKTIKA: Social Science Education Journal*, 2(1), 31–37. <https://doi.org/10.15408/sd.v2i1.1661>
- Desfandi, M., Maryani, E., & Disman, D. (2017). Building ecoliteracy through Adiwiyata program (study at Adiwiyata school in Banda Aceh). *Indonesian Journal of Geography*, 49(1), 51–56. <https://doi.org/10.22146/ijg.11230>
- Ergashev, I., & Farxodjonova, N. (2020). Integration of national culture in the process of globalization. *Journal of Critical Reviews*, 7(02), 477–479. <https://doi.org/10.31838/jcr.07.02.90>
- Fahmy, R., Bachtiar, N., Rahim, R., & Malik, M. (2015). Measuring student perceptions to personal characters building in education: An Indonesian case in implementing new curriculum in high school. *Procedia - Social and Behavioral Sciences*, 211, 851–858. <https://doi.org/10.1016/j.sbspro.2015.11.112>
- Furda, M., Sudiyanto, & Yusup, Y. (2021). The comparison of the attitude of caring to the environment among the student of adiwiyata school and non adiwiyata school. *{IOP} Conference Series: Earth and Environmental Science*, 683(1), 12051. <https://doi.org/10.1088/1755-1315/683/1/012051>
- Hanum, Y. (2016). Dampak bahaya makanan gorengan bagi jantung. *Jurnal Keluarga Sehat Sejahtera*, 14(2). <https://doi.org/10.24114/jkss.v14i28.4700>
- Heriansyah, H. (2019). **The importance of character education: the english teacher's efforts and challenges in students' character building.** *International Conference on Early Childhood Education*, 429–434. <http://jurnal.unsyiah.ac.id/ICECED/article/view/13727>
- Hicks, J., Jennings, L., Jennings, S., Berry, S., & Green, D.-A. (2018). Middle school bullying: student reported perceptions and prevalence. *Journal of Child and Adolescent Counseling*, 4(3), 195–208. <https://doi.org/10.1080/23727810.2017.1422645>
- Hoare, E., Bott, D., & Robinson, J. (2017). Learn it, live it, teach it, embed it: implementing a whole school approach to foster positive mental health and wellbeing through positive education. *International Journal of Wellbeing*, 7(3), 56–71. <https://doi.org/10.5502/ijw.v7i3.645>
- Husamah, H., Miharja, F. J., & Hidayati, D. A. (2020). Environmental literacy of islamic boarding school students: study in MA Bilingual-Sidoarjo, East Java, Indonesia. *Prisma Sains: Jurnal Pengkajian Ilmu Dan Pembelajaran Matematika Dan IPA IKIP Mataram*, 8(1), 57–68. <https://doi.org/10.33394/j-ps.v8i1.2766>
- Indiani, I., Setiadi, D., & Waluyo, U. (2020). Kepemimpinan kepala sekolah dan dampaknya terhadap pengelolaan pada SMA Tegar Kelana Suranadi. *JISIP (Jurnal Ilmu Sosial Dan Pendidikan)*, 4(3), 194–202. <https://doi.org/10.36312/jisip.v4i3.1187>
- Istikomayanti, Y., Suwono, H., & Irawati, M. H. (2016). Experiential learning group investigation as effort to develop environmental literacy ability at 5th Grade Students of Madrasah Ibtidaiyah. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, 2(1), 57–71. <https://doi.org/10.22219/jpbi.v2i1.3372>
- Iswari, R. D., & Utomo, S. W. (2017). Evaluasi penerapan program Adiwiyata untuk membentuk perilaku peduli lingkungan di kalangan siswa (Kasus: SMA Negeri 9 Tangerang Selatan dan MA Negeri 1 Serpong). *Jurnal Ilmu Lingkungan*, 15(1), 35. <https://doi.org/10.14710/jil.15.1.35-41>
- Jiang, B., Larsen, L., Deal, B., & Sullivan, W. C. (2015). A dose-response curve describing the relationship between tree cover density and landscape preference. *Landscape and Urban Planning*, 139, 16–25. <https://doi.org/10.1016/j.landurbplan.2015.02.018>
- Kamaruddin, S. A. (2012). Character education and students social behavior. *Journal of Education and Learning (EduLearn)*, 6(4), 223. <https://doi.org/10.11591/edulearn.v6i4.166>
- Kamil, P. A., Putri, E., Ridha, S., Utaya, S., Sumarmi, & Utomo, D. H. (2020). Promoting environmental literacy through a green project: a case study at adiwiyata school in Banda Aceh City. *{IOP} Conference*

- Series: *Earth and Environmental Science*, 485, 12035. <https://doi.org/10.1088/1755-1315/485/1/012035>
- Karo-karo, A. A. P., Sinulingga, A., & Dewi, R. (2018). Character building in full day school, extracurricular and student athletes. *Proceedings of the 3rd Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2018)*, 244–246. <https://doi.org/10.2991/aisteel-18.2018.52>
- Kweon, B.-S., Ellis, C. D., Lee, J., & Jacobs, K. (2017). The link between school environments and student academic performance. *Urban Forestry & Urban Greening*, 23, 35–43. <https://doi.org/10.1016/j.ufug.2017.02.002>
- Lasno, Suriansyah, A., & Saleh, M. (2019). School principal's role in the implementation of school-based management for Adiwiyata program. *European Journal of Education Studies*, 11(5), 105–122. <https://doi.org/10.5281/zenodo.2583734>
- Lestari, Y. (2018). Penanaman nilai peduli lingkungan dalam pembelajaran ilmu pengetahuan alam. *TRIHAYU: Jurnal Pendidikan Ke-SD-An*, 4(2), 332–337. <https://doi.org/10.30738/trihayu.v4i2.2238>
- Marini, A. (2018). Implementation of character building at elementary schools: Cases of Indonesia. *Proceeding International Conference on University and Intellectual Culture*, 1(1), 60–71. <http://seminars.unj.ac.id/icuic/wp-content/uploads/2018/08/7.-Implementation-of-Character-Building-at-Elementary-Schools-Cases-of-Indonesia-by-Arita-Marini-Universitas-Negeri-Jakarta.pdf>
- Meindl, P., Quirk, A., & Graham, J. (2018). Best practices for school-based moral education. *Policy Insights from the Behavioral and Brain Sciences*, 5(1), 3–10. <https://doi.org/10.1177/2372732217747087>
- Mislia, M., Mahmud, A., & Manda, D. (2016). The implementation of character education through scout activities. *International Education Studies*, 9(6), 130–138. <https://doi.org/10.5539/ies.v9n6p130>
- Novianto, V., & Meidasari, V. E. (2018). Building students' character by engaging social studies issues in language teaching. *Language in the Online & Offline World 6: The Fortitude*, 349–353. <https://www.researchgate.net/profile/Gabriel-Fajar-Sasmita-Aji/project/The-Concept-of-Home-in-VS-Naipauls-THE-ENIGMA-OF-ARRIVAL-Postcolonial-Studies/attachment/5afe6f0b4cde260d15df6526/AS:627520735043585@1526624010579/download/Proceedings+LOOW6,+May+8+&+9,+Petra.pdf#page=357>
- Nurhasanah, N., & Nida, Q. (2016). Character building of students by guidance and counseling teachers through guidance and counseling services. *Jurnal Ilmiah Peuradeun*, 4(1), 65–76. <https://doi.org/10.26811/peuradeun.v4i1.86>
- Nurwidodo, N. (2020). The role of eco-school program (Adiwiyata) towards environmental literacy of high school students. *European Journal of Educational Research*, 9(3), 1089–1103. <https://doi.org/10.12973/eu-jer.9.3.1089>
- Pane, M. M., & Patriana, R. (2016). The significance of environmental contents in character education for quality of life. *Procedia - Social and Behavioral Sciences*, 222, 244–252. <https://doi.org/10.1016/j.sbspro.2016.05.153>
- Papalia, N., Luebbers, S., & Ogloff, J. R. P. (2018). Child sexual abuse and the propensity to engage in criminal behaviour: A critical review and examination of moderating factors. *Aggression and Violent Behavior*, 43, 71–89. <https://doi.org/10.1016/j.avb.2018.10.007>
- Prasetyo, W. H., Ishak, N. A., Basit, A., Dewantara, J. A., Hidayat, O. T., Casmana, A. R., & Muhibbin, A. (2020). Caring for the environment in an inclusive school: The adiwiyata green school program in Indonesia. *Issues in Educational Research*, 30(3), 1040–1057. <https://www.iier.org.au/iier30/prasetyo.pdf>
- Pratiwi, R. D., Rusdi, R., & Komala, R. (2019). The effects of personality and intention to act toward responsible environmental behavior. *Jurnal Pendidikan Biologi Indonesia*, 5(1), 169–176. <https://doi.org/10.22219/jpbi.v5i1.7120>
- Rachman, S. P. D., & Maryani, E. (2018). Teachers' and students' green behaviour of Adiwiyata targeted school. *{IOP} Conference Series: Earth and Environmental Science*, 145, 12042. <https://doi.org/10.1088/1755-1315/145/1/012042>
- Rokhman, F., Hum, M., Syaifudin, A., & Yulianti, Y. (2014). Character education for golden generation 2045 (national character building for Indonesian golden ears). *Procedia - Social and Behavioral Sciences*, 141, 1161–1165. <https://doi.org/10.1016/j.sbspro.2014.05.197>
- Setiawan, R., & Oomariyah, I. N. (2017). Analyze of implementation character education policy base to SMKN 5 Malang student's. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, 2(2), 147–152. <https://doi.org/10.22219/jpbi.v2i2.3494>
- Siregar, Y. E. Y., Zulela, M. S., Prayuningtyas, A. W., Rachmadtullah, R., & Pohan, N. (2018). Self regulation, emotional intelligence with character building in elementary school. *Proceedings of the Annual Civic Education Conference (ACEC 2018)*, 315–318. <https://doi.org/10.2991/acec-18.2018.72>
- Situmorang, R. P., & Tarigan, S. D. (2018). Cultivating students' environmental awareness by creating bottle

- garden in school: A qualitative study. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, 4(3), 263–270. <https://doi.org/10.22219/jpbi.v4i3.6785>
- Suherman, A. (2018). The implementation of character education values in integrated physical education subject in elementary school. In A. G. Abdullah, J. Foley, I. G. N. A. Suryaputra, & A. Hellman (Eds.), *SHS Web of Conferences* (Vol. 42, pp. 1–6). EDP Sciences. <https://doi.org/10.1051/shsconf/20184200045>
- Teksoz, G. T. (2011). Managing air pollution: How does education help? In P. Jeong Woo (Ed.), *The Impact of Air Pollution on Health, Economy, Environment and Agricultural Sources* (p. 397). InTech. <https://doi.org/10.5772/16679>
- Utomo, J., Rustiyarso, R., & Salim, I. (2016). Analisis efektivitas pelaksanaan program adiwiyata di SMA Negeri 4 Pontianak. *Jurnal Pendidikan Sosiologi Dan Humaniora*, 5(11), 1–18. <https://jurnal.untan.ac.id/index.php/jpdpb/article/download/17464/14880>
- Widiatmaka, P. (2016). Kendala pendidikan kewarganegaraan dalam membangun karakter peserta didik di dalam proses pembelajaran. *Jurnal Civics: Media Kajian Kewarganegaraan*, 13(2), 188–198. <https://doi.org/10.21831/civics.v13i2.12743>
- Wuryandani, W., Fathurrohman, F., & Ambarwati, U. (2016). Implementasi pendidikan karakter kemandirian di Muhammadiyah boarding school. *Jurnal Cakrawala Pendidikan*, 15(2), 208–216. <https://doi.org/10.21831/cp.v15i2.9882>
- Yulianti, S. D., Djatmika, E. T., & Susanto, A. (2016). Pendidikan karakter kerja sama dalam pembelajaran siswa sekolah dasar pada kurikulum 2013. *Jurnal Teori Dan Praksis Pembelajaran IPS*, 1(1), 33–38. <https://doi.org/10.17977/um022v1i12016p033>