

# Introducing Eco-Literacy: Utilizing Plastic Waste Media to Instill Christian Education Values in Early Childhood

Jeane Marie Tulung<sup>1</sup>, Febri Kurnia Manoppo<sup>2</sup>  
[jeane.tulung@iaknmanado.ac.id](mailto:jeane.tulung@iaknmanado.ac.id)<sup>1</sup>, [febrimanoppo@iaknmanado.ac.id](mailto:febrimanoppo@iaknmanado.ac.id)<sup>2</sup>  
Institut Agama Kristen Negeri (IAKN) Manado, Indonesia<sup>1,2</sup>

To cite this document:

Manoppo, K.F, Tulung, M.J. (2022). Introduction To Eco-Literacy Through The Utilization Of Plastic Waste Media As A Strategy For Instilling The Value Of Christian Education In Early Childhood.

Conference Series, 4(2), 79-88 <https://doi.org/10.34306/conferenceseries.v4i2.935>

## Abstract

*This study aims to analyze and describe strategies for instilling the value of Christian Education in early childhood by introducing eco-literacy using plastic waste media. Theoretically, this research helps to add scientific studies related to Christian Education learning media and eco-literacy in early childhood by utilizing plastic waste in Manado City. This research is also expected to enrich scientific research in the field of eco-literacy in early childhood in Manado City and can serve as a reference for further research. This study uses a qualitative research method with a descriptive analysis approach based on library research. The research is conducted at GMIM Anugerah Tingkulu Kindergarten in Manado City and was held from March to June 2022. The results of this study indicate that the introduction of the concept of eco-literacy in early childhood can be accomplished through plastic waste media. The Christian Education values observed in this research are values of gratitude, responsibility, and communal values.*

**Keywords:** Eco-literacy, Christian Education, Early Childhood.

## I. INTRODUCTION

The introduction must contain what the author hoped to achieve and state the problem being investigated. It is written on A4 paper in Times New Roman 12pt. The introduction contains the background of the problem. The author indicates the practical or theoretical problem, which is the basis of the research. He or she should provide recent studies in the area of the focus problem and identify the gap between the recent studies and the current empirical and theoretical aspects of the focused study. In addition, the formulation of the research question and research objectives are included in the introduction. Furthermore, please indicate the novelty of the research. This section is written as much as approximately 20% of the body of the article, including the title and abstract.

Nature is a gift from God for humanity to be preserved and maintained as a safe and comfortable place to live. Protecting nature begins with protecting the surrounding environment. The person in charge of protecting the environment is a human. One way to protect it is by not littering so that the environment remains clean and as an effort to prevent natural disasters caused by waste.

Garbage is a reality often encountered in human life that comes from using and manufacturing various waste products that can or cannot be consumed. Common garbage can be seen on the streets, for example, paper, cans, and plastic waste. Garbage is still one of the problems that seem endless to talk. The amount of waste is much attention by the global community. The amount of waste classified as very large and where the garbage is placed is still a problem. The more people there are in the world, the more necessities of life must be met by using various products that produce various types of waste. This waste can be in the form of plastic bags, food wrappers, cans, drink bottles, and tissues. Every country in the world can produce large amounts of waste. A considerable amount of waste is generated, and only a small amount of recyclable waste is generated. The data shows that annually the amount of waste generated in the world can reach four billion metrics, and that which can be recycled is only 20%. (Nizar et al., 2017:95).

One of the countries in the world that produces large amounts of waste is Indonesia. A 2012 study in several cities related to waste management in Indonesia shows that 69% of waste is transported and stored in Final Disposal Sites (TPA), 10% is buried, 7% is composted and recycled, 5% is burned, and the remaining 7% is unmanaged (Fitri et al., 2019:12). In 2015, according to Jambeck from the University of Georgia through a publication, one of the countries with the most significant waste contributor in the world, which ranked second, was Indonesia. The main waste generated, namely plastic waste with a volume of 187.2 million tons/year after China, which produces 262.9 million tons/year, ranking Indonesia followed by the Philippines, Vietnam, and Sri Lanka. Based on this data, it is assumed that every day Indonesia can produce 175 thousand tons of waste, or each person per day produces 0.7 kg (Putu, 2020:28). In 2016, according to the Indonesian Ministry of Environment and Forestry, Indonesia can produce a total of 64 million tons of waste per year (Nizar et al., 2017:96). Then in 2019, Indonesia produced 175,000 tons of consumption waste per day (Andreswari et al., 2022:40).

When viewed from the data on the amount of waste produced by Indonesia, this amount is large, plus Indonesia was ranked as the second-largest waste contributor in the world. From this data until 2019, there was a reduced amount of waste in 2016. The amount of plastic waste in Indonesia is quite large. In 2019 it was noted that Indonesia was ranked second as a country that contributes plastic waste to the sea after China. The amount of waste is 64 tons per year, 3.2 tons of which is plastic waste that is dumped into the sea based on data from the Indonesian Plastic Industry Association and the Central Statistics Agency (BPS), while the number of plastic bags that are wasted in the environment is 10 billion pieces every year or the equivalent with 85,000 tons of plastic bags (Al Hamzi, 2022:2).

Manado City, North Sulawesi Province, is one of the cities in Indonesia that also produces various types of waste. Based on data quoted from Manado Post. Line (In Mokodompis et al., 2019) that the waste produced by Manado City itself amounts to approximately 300 tons per day with a tamping capacity of 10 hectares of Final Disposal Site (TPA) in Sumompo (Mokodompis et al., 2019:2).

One of the places where garbage is often found is beach tourism, one of which is Malalayang Beach. Researchers see that various types of garbage can be found around the beach resort. Based on the results of the study, it was found that there were nine types of waste on land, namely "glass; aluminum; paper, cardboard, and wood; medical/personal devices; paper plastic; foam plastic; plastic sheet and foam; rubber; ropes and wires are not for fishing". Meanwhile, there are seven groups of garbage found in the sea: "glass; aluminum; paper, cardboard, and wood; medical/personal devices; paper plastic; foam plastic; plastic sheet and foam;". The

amount of garbage on land and in the sea is more in number on land. This waste comes from waste, or various activities carried out by humans and is not processed or not disposed of in its place the distribution of this waste, namely through the river, which then reaches the coast of Malalayang. One of the contributing factors in generating waste is culinary places along the coast. If this continues, the volume of waste will continue to grow more and more in the future (Nicolas et al., 2021:98).

The activity of throwing garbage carelessly or improperly can pollute the environment. In addition, garbage disposal in rivers can be a factor in flooding. For example, the flood that occurred in Manado. One of the places affected by the 2011 Manado flood was Sario Village. Factors that cause flooding in Sario Village are mainly caused by overflowing water in the Sario river which is no longer able to accommodate the existing water volume due to river silting, river narrowing, inappropriate use of river borders, and the behaviour of people who throw garbage. In the river (Tombokan & Takaendengan, 2021:147), The increase in the amount of garbage in rivers and local drainage is the cause of flooding in Manado City (Rinaldi, 2018:6).

Based on these data, researchers see that the phenomenon of the waste problem is still a classic problem in Indonesia, especially in the city of Manado and its surroundings. However, after the researchers made initial direct observations at one of the Christian PAUD institutions in Wenang District, Manado City, the researchers found that the PAUD teachers there had used various types of plastic waste as learning media. The plastic waste media has been applied to every learning theme in this odd and even semester. The PAUD institutions is TK GMIM Anugerah Tingkulu Manado. The teachers have produced works using various types of plastic waste, such as used mineral water bottles, tea bottles, bottle caps, and candy wrappers. Some plastic waste is recycled and used as a learning medium for early childhood. Modified plastic waste has also been used in pre-literacy and pre-number learning in the classroom. The various learning media produced have been used to support integrative thematic learning, including Christian education materials for children, art and creativity.

This study aims to analyze and describe strategies for inculcating the value of Christian Education for early childhood by introducing eco-literacy in using plastic waste media. Theoretically, this research is helpful in adding scientific studies related to Christian Education learning media and eco-literacy in early childhood by utilizing plastic waste in Manado City. This research is also expected to enrich scientific research in the field of eco-literacy in early childhood in Manado City and can be a reference for further research.

The following are some studies related to Education on waste management and its use through early childhood education: The first research on "Application of Audio Visual To Improve Environmental Love Behavior in the Golden Age". The research method used is Classroom Action Research (CAR). In this study, it was stated that "by instilling a sense of love and care for the environment from an early age, it will shape children into the next generation of the nation who will be more concerned and appreciate natural wealth and will keep it sustainable"(Suryani & Seto, 2021:906).

The second research is "Introduction to Eco-literacy in Early Childhood Through Storytelling Methods," with a literature study research method. This study's results say that "providing an early understanding of eco-literacy to children is one

solution to dealing with environmental damage created by humans" (Siregar et al., 2020:726).

The third research is "Management of APE Made of Waste to Improve Children's Cognitive Intelligence." The method used in this research is a case study qualitative research. From the results of this study, it was stated that educational game tools made from waste packaged with appropriate methods could optimize student learning, specifically on cognitive intelligence. This educational game tool at Raudlatul Athfal (RA) Tania cannot be generalized to all Early Childhood Education institutions because it is casuistic and adapted to the learner's characteristics and analysis in the internal and external environment within the institution. (Baharun et al., 2020:1392).

The fourth study, entitled "Utilization of Bottle Water Recycling in Early Childhood Learning Al-Hidayah Kindergarten Rangkasbitung, Lebak-Banten," with a qualitative descriptive research method. There are three main points from this study's results: first, researchers, teachers, and students collaborate on the Utilization of Bottle Water Recycling in early childhood learning. Water bottles are then recycled to make this media which is then used as a learning media or Educational Game Tool (APE). Second, the use of media made from the use of Bottle Water Recycling, researchers found that this media can develop various aspects of children's development in Al-Hidayah Kindergarten, namely aspects of religious and moral values, cognitive, physical motoric, art, social-emotional and art can be developed. Third, (Rangkasbitung et al., 2022:82).

These studies mostly discuss waste as an educational game tool in kindergartens but have not been specific to the type of plastic waste. Plastic waste is the most common type of waste found in Indonesia, especially in the city of Manado and its surroundings. In addition, there has been no research related to plastic waste in introducing eco-literacy in early childhood in Manado City. Furthermore, researchers have not found any research on the relevance of Christian Education for early childhood and the introduction of eco-literacy. Based on this, this research is expected to present a new perspective on cultivating the value of Christian Education for early childhood through plastic waste, specifically at Christian PAUD Institutions in Manado City.

## II. METHODOLOGY

This study uses a qualitative research method with a descriptive analysis approach based on library research. This research is located at TK GMIM Anugerah Tingkulu, Manado City, which was held from March to June 2022. Researchers conducted a literature study of various journal articles and books relevant to this research to obtain data related to the concept of eco-literacy, learning media for early childhood, and the concept of Christian Education. The next step is that the researcher conducts a descriptive-analytical study of the data from observations and interviews with two PAUD teachers at TK GMIM Anugerah Tingkulu, Manado. The last stage is the researcher writes articles based on literature study data, arguments, observations, and interviews.

### III. RESULTS AND DISCUSSION

#### 3.1 Nurturing Eco-Literacy in Early Childhood Education

*Eco-literacy* is defined as a human already having a high-quality inner awareness of the importance of protecting and preserving the environment (Siregar et al., 2020:720). The opinion that is in line with this opinion is that eco-literacy or ecological literacy is a condition of someone who already has an awareness of the importance of the environment (Nurfarida & Hasanah, 2021:89). Eco-literacy is a person's understanding and behaviour towards the environment (Siregar et al., 2020:49). Thus eco-literacy is not just someone looking at the environment, but understanding and expressing his behaviour towards the environment by preserving the environment.

*Eco-literacy* was initiated and published for the first time by Capra. Capra said that ecology and every principle contained in it could be found and applied in every system of human life (Siregar et al., 2020:721). This shows that ecological principles also apply in the context of Education, including the scope of early childhood education.

Capra (In Ramdani & Badru, 2022:4) suggested four competencies related to eco-literacy, namely: a) Head/cognitive - comprehend the problem's context from a systemic perspective, grasp fundamental ecological principles, engage in critical thinking, evaluate the impact and ethical implications of human actions, and envision the long-term consequences of decisions; (b) Heart/emotional - cultivate care, empathy, and respect towards others and all living beings; (c) Hands-on/active - create and utilize tools and practices required by sustainable communities, employ technology effectively and responsibly; (d) Passion/connection - foster reverence for the Earth and all living things, establish a deep, profound bond with the environment, experience a kinship with nature, and share that sentiment with others.

Instilling eco-literacy in early childhood is seen as very important. The purpose of planting eco-literacy is to create a society that cares and is aware of the environment, especially if it is implemented early on (Ramdani & Badru, 2022:2). In line with this opinion, it is stated that the realization of the next generation of the nation who is aware, understands, and loves the environment must start early (Kusumawardani & Kuswanto, 2020:3).

Eco-literacy is part of Education about nature. Eco-literacy is Education that focuses on all aspects of learning based on nature to arrive at a complete appreciation in everyday life of the principles that work in nature. (Ihsan & Hanami, 2021:45). Education about nature should be given to children early. The main idea about nature-based learning is related to children; namely, in its implementation, children are invited to enter a real atmosphere in a real natural environment to learn. It was further stated that learning based on nature would make students closer and more grateful for Allah's creation, have a strong mental attitude or behavior, love plants, animals, and the environment, and be kind and friendly to nature. (Sunanik, 2018:89).

Nature is related to the environment. One of the institutions responsible for guiding the environment is a school with the intention that school-age children be aware of the importance of the environment in maintaining present and future life because all communities, including the government and educational institutions, are responsible for environmental Education. (Djoehaeni, 2014:3).

Education about the environment is seen as important, for it must be given to the community from an early age for a sustainable life. Therefore, schools must invite and introduce students to understand the current conditions and natural problems, for example, by giving an example of throwing garbage in its place (Chandrawati & Aisyah, 2022:132). Several ways can be done to raise awareness of the environment among students in PAUD, including training the sensitivity of students, teachers, and parents regarding the environment, namely by taking students to the zoo, planting trees, and activities that are often and relatively carried out, namely: gardening school or gardening class (Priyatna et al., 2017:351).

In practice, environmental Education should be included in the syllabus of primary and secondary schools, as well as in conferences, seminars, and talks. His teaching in the classroom should be age-appropriate, mature, and should be theoretically and practically entertaining and enjoyable. Many activities can be done at the playground or a nearby park. Children can learn about outdoor plants, trees, rivers, birds, and insects and environmental issues such as pollution, gas emissions, energy consumption, recycling, good water use, and many other important aspects. (Chandrawati & Aisyah, 2022:133).

Furthermore, the objectives of children studying environmental Education, according to UNESCO, are a) To make them more aware and aware of environmental problems. b) Increase their interest in caring for and improving the environment. c) Improve their ability to learn about their environment. d) Expanding their ecological knowledge in subjects such as energy, landscapes, air, water, natural resources, and wildlife (Chandrawati & Aisyah, 2022:133).

### **3.2 Recycled Plastic Learning Media for Early Childhood Education**

The introduction of eco-literacy to early childhood could be done with various learning media. Media is an intermediary in conveying information from communicators aimed at communicants who can stimulate thoughts, increase enthusiasm and attention, and interest in children to be able to acquire knowledge, skills, and actions following the objectives of the information that has been conveyed. (N. Suryani et al., 2018:3). The right learning media can make learning more effective.

The current phenomenon shows that there is so much garbage or used goods scattered around the environment. Therefore, it depends on how creative teachers can turn used goods into interesting and creative media. Teachers can use used goods to be used as media or learning resources for early childhood. By using used goods, teachers can be creative in making used goods as learning media; for example, used in bottles can be used as sound cans by utilizing gravel as a natural resource aid. In this case, it can improve aspects of the art of music and hearing and can introduce sounds to children (Vyardina, 2019:58). Based on an interview with Mrs. Fieke Suwuh, one of the teachers at TK GMIM Anugerah Tingkulu Manado Class B, the teachers there used plastic bottles, plastic bottle caps, candy wrappers made of plastic material, and used plastic gallons to make learning media in the form of APE (Educational Game Tool) for children.

Learning media made from used materials can increase children's awareness of a healthy and clean environment. In using media made from used materials in learning, teachers can make learning more creative and can, explain how to protect the existing environment, and teach how we can reduce existing waste, namely through recycling used goods into learning media. (Hajerah et al., 2019:681).

Every PAUD unit, especially one that carries the Christian label, plays an important role as an institution whose main focus is to instill moral and religious values in early childhood. The goal is for children to gain knowledge of Christ from an

early age so that these children may have characters relevant to Bible teachings. Developing moral and Christian values requires learning media so that planting and developing Christian values can run effectively and be liked by children (Chuang and Yanti).

Researchers observed that children in TK GMIM Anugerah Tingkulu Manado were very interested in learning while playing by using learning media from recycled plastic waste. They have also been given an introduction to environmental education by the teachers through various learning media made from plastic waste.

### **3.3 Gratitude Value**

Based on interviews with teachers at TK GMIM Anugerah Tingkulu Manado that through the use of plastic waste as works of art and APE (educational game tools), children can learn to be grateful for God's work as the Creator of the world who may provide the universe to be used as learning material for them. In addition, teachers can easily relate Bible stories by utilizing these learning media. For example, teachers can design artificial musical instruments from plastic bottles filled with stones and seeds and invite the children to play these instruments while praising God. Teachers can relate stories about the character of David, who loves to praise God and is accompanied by musical instruments such as the harp and harp.

Iris V. Cully in Harefa argues that the formation of spirituality cannot be separated from Christian Education because Education plays an important role in shaping the spiritual man. Furthermore, Christian Education means activities to produce God's children whose character has been shaped according to God's character. Christian Education is also tasked with bringing humans to connect with God (Desetina Harefa, Otieli Harefa). Based on this, the researcher argues that by teaching the values of gratitude from an early age, teachers have played an important role in bringing children from an early age to connect with God as the Creator of the universe. The activity of praising God, which is contextualized with simple musical instruments made of plastic waste, is also a method to educate children to know God through songs and spiritual songs sung by children.

### **3.4 Value of Responsibility**

Based on the results of interviews with the teachers at TK GMIM Anugerah Tingkulu Manado, class A and B children are taught about the value of responsibility through learning activities through play that utilizes educational game tools from plastic waste. The teachers there several times involved them to help in making educational game tools. For example, they are involved in mixing colors and painting plastic bottles to produce colorful plastic bottles ready to be made into artificial musical instruments. In these activities, children are given the responsibility to be able to complete the work according to their respective abilities.

### **3.5 Communal Value**

Based on observations, the researchers found that the introduction of eco-literacy learning conducted at TK GMIM Anugerah Tingkulu Manado showed that early childhood could recognize communal values in their daily lives. Children are trained to work together as a team when they play together. This togetherness value also characterizes the value of Christian Education as contained in the theological meaning of congregational life. Christians are called to fellowship together as God's light in this world. Early childhood also as part of the congregation needs to be

educated in communal values so that they can begin to be prepared to become members of the congregation who can live life together to glorify God.

#### IV. CONCLUSION

Concern for the increasing amount of waste, especially the type of plastic, remains an ecological issue that needs to be considered by the government and the community, especially education actors. Christian Education, in this case, needs to take a strategic role in solving this global problem. Especially in early childhood education, teachers and parents can play an important role in introducing and raising awareness for love and care for the environment in children from an early age. This is part of the eco-literacy movement, full of character values relevant to Christian Education. TK GMIM Anugerah Tingkulu Manado has made an important contribution to introducing the concept of eco-literacy to children at an early age by using plastic waste media to be used as educational games. TK GMIM Anugerah Tingkulu Manado, which is one of the Christian PAUD institutions in Manado City, is also quite successful in implementing a strategy of inculcating Christian educational values, which is relevant to the introduction of the concept of eco-literacy in children through the use of plastic waste as a learning medium. Some of the values of Christian Education observed in this research are Values of Gratitude, Values of Responsibility, and Communal Values.

#### REFERENCES

- Al Hamzi, Mochammad Basyiruddin. "No Title." *Solidaritas*, vol. 6 (1), no. Peran Perusahaan Avani Eco Dalam Menangani Krisis Sampah Plastik, 2022, p. 11.
- Andreswari, Desi, et al. *Literasi Digital Dalam Rangka Mengurangi*. 2022, pp. 40–45.
- Baharun, Hasan, et al. "Pengelolaan Alat Permainan Edukatif Berbahan Limbah Dalam Meningkatkan Kecerdasan Kognitif Anak." *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, vol. 5, no. 2, 2020, pp. 1382–95, doi:10.31004/obsesi.v5i2.763.
- Chandrawati, Titi, and Siti Aisyah. "Penanaman Cinta Lingkungan Pada Masyarakat PAUD." *Aksara: Jurnal Ilmu Pendidikan Nonformal*, vol. 8, no. 1, 2022, p. 131, doi:10.37905/aksara.8.1.131-136.2022.
- Chuang, Suwandi, and Maria Evvy Yanti. "Mengembangkan Nilai-Nilai Moral Dan Pendidikan Kristiani Melalui Penggunaan Media Pembelajaran Pada Anak Usia Dini Pendahuluan." *Jurnal Teruna Bakti*, vol. 4, no. 1, 2021, pp. 21–35.
- Desetina Harefa, Otieli Harefa, Linda Dewi Terserani Lase. "Bagi Pembentukan Rohani Dan Perilaku Anak Usia DiniKontribusi Pendidikan Kristen." *Jurnal Teologi Dan Pendidikan Agama Kristen*, vol. 4, no. 2, 2019, pp. 113–20.
- Djoehaeni, Heny. "Model Pembelajaran Pendidikan Lingkungan Hidup Pada Pendidikan Anak Usia Dini." *Edutech*, vol. 13, no. 1, 2014, p. 1, doi:10.17509/edutech.v13i1.3216.
- Fitri, Rizka Firdausia, et al. "Implementasi Kebijakan Pemerintah Dalam Inovasi Pengelolaan Sampah Terpadu." *Jurnal Respon Publik*, vol. 13, no. 4, 2019, pp.



12–18.

- Hajerah, H., et al. "Pembuatan Media Pembelajaran Dengan Menggunakan Bahan Bekas Pada Guru TK Di Kabupaten Maros." *Seminar Nasional Pengabdian Kepada Masyarakat*, vol. 2018, no. 9, 2019, pp. 680–83.
- Ihsan, Aditya Firman, and Zarah Arwieny Hanami. "Implementasi Ekoliterasi Di Era Pascaliterasi." *Prosiding Seminar Nasional Adiwidya 8 Pascasarjana ITB*, no. January, 2021, pp. 42–47.
- Kusumawardani, Rd Roro Windy Amelya, and Kuswanto Kuswanto. "Membangun Kesadaran Lingkungan Melalui Ekopedagogik Pada Anak Usia Dini Berlandaskan Konsep Jan Ligthart." *Jurnal Pendidikan Anak*, vol. 9, no. 2, 2020, pp. 94–99, doi:10.21831/jpa.v9i2.31997.
- Mokodompis, Yulianto, et al. "Implementasi Kebijakan Pengelolaan Sampah Di Kota Manado." *Jurnal Jurusan Ilmu Pemerintahan*, vol. 3, no. 3, 2019, pp. 1–12.
- Nicolas, Joshian, et al. *Author : Schadu@unsrat.Ac.Id*. no. 1, 2021, pp. 89–99.
- Nizar, Muhammad, et al. "Manajemen Pengelolaan Sampah Kota Berdasarkan Konsep Zero Waste : Studi Literatur." *Serambi Engineering*, vol. 1, no. 2, 2017, pp. 93–102.
- Nurfarida, R., and A. Hasanah. "Perilaku Green Behaviour Dengan Pembelajaran Ekoliterasi Pendidikan Karakter Anak Usia Dini." *Jurnal Studi Islam Lintas ...*, vol. 3, no. 2, 2021, pp. 86–94.
- Priyatna, Aquarini, et al. "Pengenalan Pola Hidup Berwawasan Lingkungan Pada Ibu Dan Anak Di Paud Siti Fatimah, Kota Cirebon." *Jurnal Pengabdian Kepada Masyarakat*, vol. 1, no. 6, 2017, pp. 348–51.
- Putu, Ni Luh. "Pengelolaan Sampah Dari Lingkup Terkecil Dan Pemberdayaan Masyarakat Sebagai Bentuk Tindakan Peduli Lingkungan." *Jurnal Bali Membangun Bali*, vol. 1, no. April, 2020, pp. 27–40.
- Ramdani, Cepi, and Zaman Badru. "No Title." *Pelangi: Jurnal Pemikiran Dan Penelitian Islam Anak Usia Dini*, vol. 4, no. Penerapan Bank Sampah di Lingkungan Keluarga Dalam Menumbuhkan Ecoliteracy Anak Usia Dini, 2022, pp. 1–8.
- Rangkasbitung, Taman Kanak-kanak Al-hidayah, et al. *Kata Kunci : Water Bottle Recycling, Pembelajaran Anak Usia Dini*. no. 1, 2022, pp. 69–84.
- Rinaldi, Aris. *Evaluasi Permasalahan Banjir Kota Manado Dengan Pemodelan Dua Dimensi Subdirektorat Hidrologi Dan Lingkungan Sumber Daya Air* ., no. November, 2018, doi:10.13140/RG.2.2.28625.79205.
- Samarinda, Iain. *Pembelajaran Berbasis Alam Untuk Anak Usia Dini Di Tk Alam Al Azhar Kutai Kartanegara*. no. 1, 2018, pp. 81–110.

---

Siregar, Masyunita, et al. "No Title." *ESJ (Elementary School School Journal)*, vol. 10 (2), no. Ecoliteracy Pada Anak Usia Dini 5-6 Tahun, 2020, pp. 48–55.

"Pengenalan Ecoliteracy Pada Anak Usia Dini Melalui Metode Bercerita." *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, vol. 5, no. 1, 2020, p. 719, doi:10.31004/obsesi.v5i1.700.

Suryani, Lely, and Stefania Baptis Seto. "Penerapan Media Audio Visual Untuk Meningkatkan Perilaku Cinta Lingkungan Pada Golden Age." *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, vol. 5, no. 1, 2020, pp. 900–08, doi:10.31004/obsesi.v5i1.601.

Suryani, Nunuk, et al. *No Title*. ROSDA, 2018.

Tombokan, Franky, and Teddy Takaendengan. "Identifikasi Dan Pengukuran Debit Aliran Sungai Sario." *Jurnal Teknik Sipil Terapan*, vol. 3, no. 3, 2021, pp. 146–55.

Vyrdina, Nina Khayatul. *No Title*. Duta Media, 2019.