FOSTERING ENVIRONMENTAL STEWARDSHIP: THE IMPLEMENTATION OF 3R (REDUCE, REUSE, RECYCLE) AT SDN 02 AMPELDENTO

Hamidatun Nisa'[1*], Tuti Mutia[2]
[1]Department of Geography, Faculty of Social Science, State University of Malang, Indonesia,
hamidatun.nisa.2107216@students.um.ac.id
[2]Department of Geography, Faculty of Social Science, State University of Malang, Indonesia, tuti.mutia.fis@um.ac.id

ABSTRACT

Abstract: *A caring attitude towards the environment is one of the factors that influence its quality. The environmental conditions at SDN 02 Ampeldento showed that it was not clean, a buildup of plastic waste was found in the school environment. There is a strategy to overcome this problem by cultivating environmental awareness by implementing 3R waste management. This research aims to determine the implementation of 3R waste management at SDN 02 Ampeldento and determine students' environmental care attitudes after implementing 3R waste management. This study uses a qualitative method. Data analysis uses the Miles and Huberman method which consists of three steps, namely (1) data reduction, (2) data presentation, (3) drawing conclusions/verification. The results of the study showed that the implementation of 3R waste management through 2 stages, namely successful socialization gave students have a good understanding of 3R waste management, and successful implementation made students accustomed to protecting the environment. This study is expected to build students' sense of concern for the environment. and become part of sustainable habits.*

Keywords : *Environmental Education; 3R Waste Management; Environmental Concern Attitude*

Abstrak: Sikap peduli lingkungan merupakan salah satu faktor yang mempengaruhi kualitasnya. Kondisi lingkungan di SDN 02 Ampeldento menunjukkan kurang bersih, ditemukan penumpukan sampah plastik pada area sekolah tersebut. Terdapat strategi dalam menyelesaikan permasalahan tersebut melalui pembinaan kepedulian lingkungan dengan implementasi pengelolaan sampah 3R. Penelitian ini bertujuan untuk mengetahui implementasi pengelolaan sampah 3R di SDN 02 Ampeldento dan mengetahui sikap peduli lingkungan siswa setelah implementasi pengelolaan sampah 3R. Penelitian ini menggunakan metode kualitatif. Analisis data menggunakan metode Miles and Huberman yang terdiri dari tiga langkah yaitu (1) reduksi data, (2) penyajian data, (3) penarikan kesimpulan/verifikasi. Hasil penelitian menunjukkan bahwa implementasi pengelolaan sampah 3R melalui 2 tahap yaitu sosialisasi yang berhasil membuat siswa memiliki pemahaman yang baik terkait pengelolaan sampah 3R dan implementasi yang berhasil membuat siswa terbiasa dalam menjaga lingkungan. Penelitian ini diharapkan dapat membangun rasa kepedulian siswa terhadap lingkungan dan menjadi bagian dari kebiasaan yang berkelanjutan.

Kata kunci: Edukasi Lingkungan; Pengelolaan Sampah 3R; Sikap Peduli Lingkungan

A. INTRODUCTION

The school environment is an environment that includes all physical, social, and psychological aspects that can affect the learning process of students. The cleanliness of the school environment can create a pleasant and comfortable atmosphere for learners when they do activities in the school environment (Ernawatiningsih et al., 2023). A clean and orderly school environment creates a conducive learning atmosphere for learners and improves the overall quality of education. However, the facts show that the State Elementary School 02 Ampeldento has not paid attention to the cleanliness of its environment. This can be proven by the accumulation of garbage in the school environment. The accumulation of waste without proper management can cause problems such as the spread of disease and produce harmful chemicals(Christover, 2023).

Waste accumulation is often found in public places such as schools. Schools are one of the major contributors of waste. This is due to the dense activities within the school, resulting in various types of waste that have the potential to pollute the school environment if not managed properly. The waste can come from school activities, leaf litter from shade plants in the schoolyard, and food wrappers from the school canteen (Christover, 2023). Waste that is not managed properly can make the environment dirty and cause the siltation of rivers, which in turn can cause flooding (Sari P.N, 2016).

Environmental damage is caused by a lack of awareness of the importance of protecting the environment. Irresponsible human actions toward waste can lead to a high potential for environmental damage (Natalia Marpaung et al., 2022). The lack of awareness of the environment causes people to ignore the importance of sorting and disposing of waste in its place. The act of disposing and sorting waste according to its type looks simple, but this habit has a huge impact if implemented properly and consistently. This habit is important to implement from an early age to form and build a generation that cares about the environment. Serious handling is needed to overcome this problem, one of which is providing education related to the formation of environmental care habits.

The first step is to form the habit of caring for the environment. The first step in overcoming waste management problems is to collect waste based on its type, shape, and nature so that it can be managed properly (Azhar, 2023). In general, waste is divided into three types, namely organic waste (easily decomposed), inorganic waste (difficult to decompose), and hazardous waste. Waste management can be implemented by all parties is the 3Rs (reduce, reuse, recycle). Reduce can be interpreted as daily actions to reduce waste, such as limiting the use of paper by switching to digital format. Reuse which means reusing can be interpreted as using used items without processing them first, such as reusing glass bottle packaging. Recycle which means recycling can be interpreted by processing waste into more

useful items, the concept of recycle can be applied by teachers through student projects to produce products (Arisona, 2018).

Based on observations at SDN 02 Ampeldento, information was obtained that the school was not an Adiwiyata school. So that the emphasis on students to care about the environment is still very lacking. Trash bins for disposing of waste based on its type are also still not available. So far, the implementation of 3R carried out by other researchers has only been carried out for one day so that it has not brought significant changes. So the researcher decided to conduct socialization of waste management with the 3R principle (Reduce, Reuse, and Recycle) and invite students at SDN Ampeldento 02 to implement and get students used to disposing of waste based on its type. This activity was carried out for 4 months so that students gain consistency in maintaining the environment by applying the 3R principle so that the volume of waste is significantly reduced. This study aims to 1) determine the implementation of 3R waste management at SDN 02 Ampeldento and 2) determine the attitude of students who care about the environment after the implementation of 3R waste management. The implementation of this socialization is expected to have a positive impact on the environment and build a generation of environmental care for students.

B. METHODS

This research uses qualitative research methods that focus on analyzing variables related to the existing conditions at SDN 02 Ampeldento Karangploso. Qualitative research is research that produces descriptive data in the form of written or spoken words from people and behaviors that can be observed. So qualitative research aims to collect information about the status of a symptom, which describes the condition of the symptom following the actual situation when the research was conducted (Alimun Utama, 2023).

1. **Location and Time of Research**

The location of this research is at State Elementary School 02 Ampeldento, Karangploso District, Malang Regency, precisely on Zentana Street, Kasin, Ampeldento, Karangploso District, Malang Regency. The location was chosen based on where the researcher was assigned to conduct the Teaching Campus program. In addition, SDN 02 Ampeldento Karangploso is one of the public elementary schools that is still not enough to be said to be an advanced elementary school. The research time was conducted for 4 (four) months, namely from March 2024 to June 2024 according to the time of the Teaching Campus program assignment.
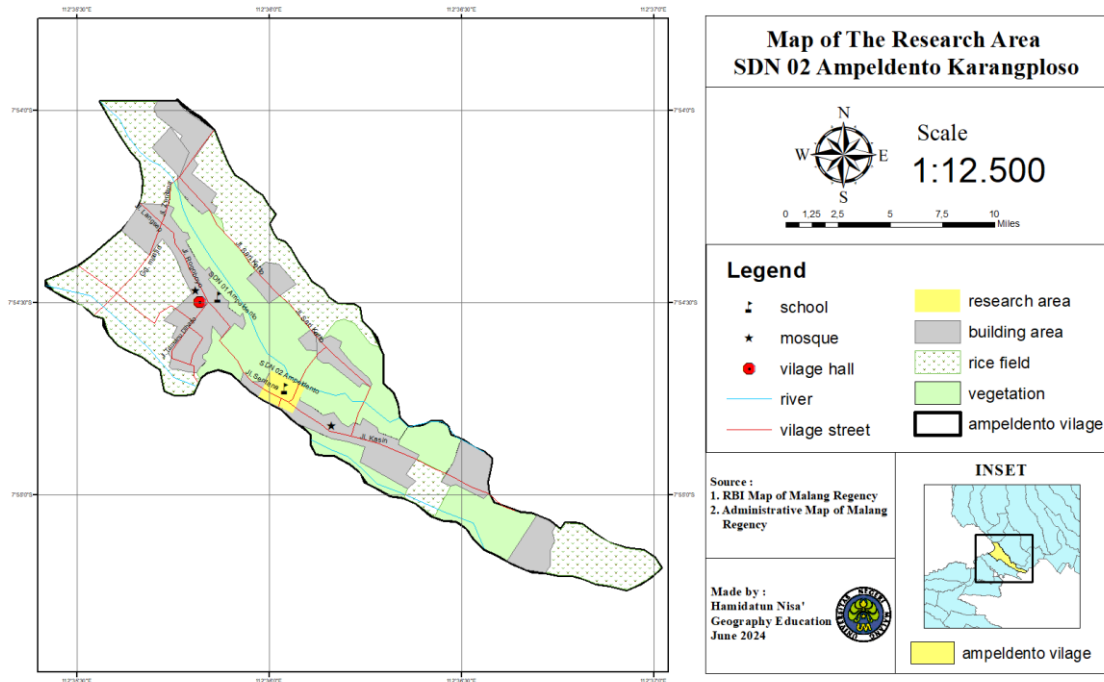
Figure 1. Map of SDN 02 Ampeldento Karangploso

2. Population and Sample

The research population includes all objects to be analyzed. In this study, the population includes all students from grade 1 to grade 6. The research sample is representative of the entire population. This study, uses a sampling technique, namely Simple random sampling. Simple random sampling is a sampling technique for members of the population that is carried out randomly, without regard to the levels in the population (Fajar D.S, 2021). In this study, the sample used was grade 4 students with a total of 22 students.

3. Data Collection and Analysis Methods

In this study, data collection and analysis were carried out using primary and secondary data. Primary data sources were obtained through observation, interviews, and questionnaires. Observations were made by observing the environment around SDN 02 Ampeldento. An interview was conducted with one of the school teachers of SDN 02 Ampeldento to find out the extent of the concern of teachers and school officials for the school environment. Questionnaires were distributed to grade 4 students to determine the extent of students' concern for the environment after socialization and implementation. The primary data is obtained from previous research related to the socialization and implementation of the 3Rs (reduce, reuse, recycle). While primary data obtained from previous research related to socialization and implementation of 3Rs (reduce, reuse, recycle). According to Miles and Huberman quoted from (Zulfirman R, 2022), the interactive data analysis model consists of three components, namely (1) data reduction, (2) data presentation, (3) conclusion drawing/verification.

C. RESULT AND DISCUSSION
1. Implementation of 3Rs Waste Management
a. Condition Before Implementation

Figure 2. Accumulation of Rubbish   **Figure 3.** Rubbish Scattered Around

Environmental conditions at SDN 02 Ampeldento before being implemented The implementation can be said to be less clean as seen in figures 2 and 3. This is due to the lack of student awareness in protecting the environment and the lack of student knowledge in managing waste. The lack of knowledge of students is not only caused by internal factors but there is a role of teachers who must provide a good example in fostering the character of environmental care to students. With the role of teachers in shaping the character of environmental care in students, it is hoped that students will grow into individuals who are responsible and have concern for the environment (Ramdan & Fauziah, 2019).

Based on the results of an interview with one of the teachers at SDN 02 Ampeldento, it was found that only some teachers were active in shaping the character of environmental care in students. Some of them implement programs such as Clean Friday activities, and operations (cleaning up garbage around the school), and class pickets. These teachers also educate students to care about the environment by directly reprimanding them. When there are students who damage the environment provide examples so that students can imitate their actions in protecting the environment. Meanwhile, the majority of teachers at SDN 02 Ampeldento do not strictly supervise students to care for the environment. The lack of a hygiene habituation program causes the school environment to become dirty and results in a lack of student awareness of the importance of protecting the environment. Therefore, it is necessary to have a deep understanding of the importance of caring for the environment.

b. 3Rs Implementation Activity Program

The implementation of the 3Rs implementation activity program aims to provide knowledge and familiarize students with the importance of caring for the environment by managing waste using the 3Rs principle. The following is an activity program that is implemented based on waste management using the 3Rs principle :

a) Socialization of 3Rs Waste Management

The socialization was held to provide students with an understanding of waste management to protect and care for the environment. A good understanding of the environment can have a positive impact on the

environment. A deep understanding of the environment is expected to be able to change people's behavior to be more concerned about the environment (Baroroh E, 2022).

Figure 4. Socialization of 3Rs Waste Management

Waste management socialization activities using the 3Rs principles were attended by fourth-grade students. The implementation of socialization activities as in figure 4 was carried out during learning by presenting material related to waste management using the 3Rs principles. There are several materials presented during the socialization, namely (1) material related to the definition of waste, (2) the difference between organic and inorganic waste, (3) the importance of disposing of waste based on its type, (4) the negative impact of littering, (5) an explanation of waste management using the 3Rs principle (reduce, reuse, recycle), (6) finally a question and answer session. The socialization activities ran smoothly and could be said to be successful, marked by the high enthusiasm of students in answering questions correctly related to the material that had been delivered.

b) The Habit Disposing of Garbage Based on Its Type

Figure 5. Practice of Disposing of Garbage Based on Its Type

Habituation assistance of disposing of garbage based on its type which is implemented for four months can have a positive impact on students of SDN 02 Ampeldento. This habit not only teaches students to dispose of waste in its place based on its type but also succeeds in reducing the amount of plastic waste at school. The habit of disposing of waste based on its type can build student character to increase students' love for the environment and

encourage them to adopt a healthy lifestyle (Febriyanti et al., 2023). Indirectly, the existence of waste bins by type can encourage student participation in disposing of waste in its proper place (Raharjo A.S, 2014).

c) Implementation of Reduce

Figure 6. Habituation of Bringing A Drink Bottle

Reduce or waste reduction is an effort to minimize the amount of waste in the source environment and can be done before waste is generated (Helmi et al., 2018). In applying the reduce principle, in figure 6 students are encouraged to get used to bringing reusable beverage bottles. There is a significant change at SDN 02 Ampeldento from them bringing beverage bottles, namely the reduction of piles of plastic waste used for disposable drinks.

d) Implementation of Reuse

Figure 7. Pots Made From Bottles

Reuse is the practice of reusing waste for the same or different purposes (Herlinawati et al., 2022). In applying the principle of reuse in figure 7, students are invited to reuse plastic bottles used for mineral water to be used as plant pots. This teaches students to reuse used items that can still be used.

e) Implementation of Recycle

Figure 8. Shoe Rack from Used Bottles

Recycle is the process of reprocessing waste to create new useful goods or products (Rahmadina et al., 2024). In applying the principle of recycle, in figure 8 learners are invited to reprocess waste such as plastic bottles and used wooden boards that are no longer used to be used as shoe racks. Used plastic bottles that are no longer used are filled with gravel to be used as a pedestal. While the wooden board is used as a base to put the shoes. Mineral water plastic bottles that were originally only used as containers for mineral water have now turned into shoe racks. This activity can also train students' creativity.

c. Condition After Implementation

Figure 9. No Trash Scattered   **Figure 10**. Reduced Accumulation of Rubbish

The change after implementation is that the environmental conditions at SDN 02 Ampeldento become cleaner. A clean environment at SDN 02 Ampeldento can be seen from the reduced volume of plastic waste, the absence of accumulation of garbage, and no garbage scattered around the school. This is due to students who have understood and been educated about waste management using the 3Rs principle. In addition, the cleanliness of the school environment is also caused by students who are accustomed to implementing waste management using the 3Rs principle so indirectly students already have a sense of concern for the environment.

2. Students Environmental Care Attitude After 3R Implementation

After the implementation of the 3Rs as a fostering of environmental awareness, the researcher gave a questionnaire on environmental care attitudes to students.

The purpose of giving a questionnaire is to find out the students' environmental care attitude after the implementation of 3Rs waste management. The results of the questionnaire were processed and analyzed descriptively. The indicators of the processing of environmental care attitude scores are that each correct answer will be analyzed descriptively. The indicator for processing environmental care attitude scores is that each correct answer will receive 4 points with a total of 25 statements so that the result will be 100 if you successfully answer all statements correctly. According to (Mahita, 2018), to determine the criteria for environmental care attitudes can be seen in table 1 below.

Table 1. Criteria for Environmental Care Attitude

No	Score Value	Criteria
1	<60	Less
2	60 – 70	Simply
3	>70 – 80	Good
4	>80	Very Good

Data on the results of distributing questionnaires on environmental care attitudes from a sample of 4th (fourth) grade students of SDN 02 Ampeldento are shown in table 2 below :

Table 2. Recapitulation of Environmental Care Attitude Score

No	Category	Environmental awareness score	Number of students
1	Less	<60	2 students
2	Simply	60-70	3 students
3	Good	>70-80	1 students
4	Very Good	>80	16 students

Based on table 2, the score dominated by the highest number of students is the score of more than 80. The number of students who have a score of more than 80 is 16 students. Based on the data that has been obtained, the sample of students of SDN 02 Ampeldento has an attitude toward environmental care with a very good category. The percentage score of students' environmental care attitudes can be seen in the following diagram :
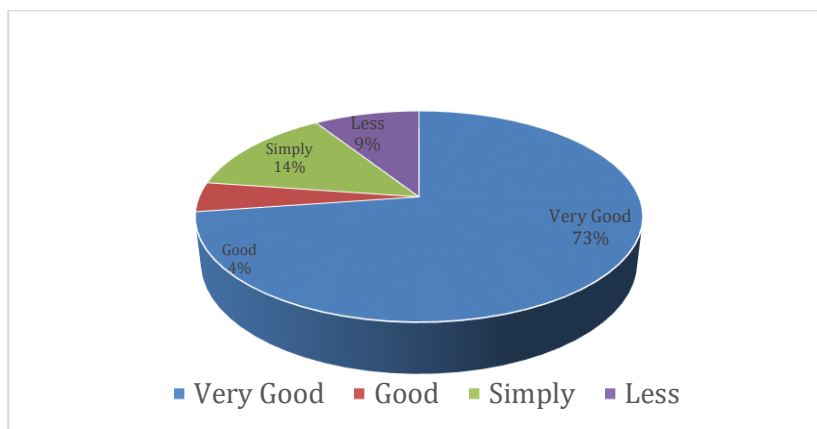
Figure 11. Percentage Diagram of Environmental Care Attitude Score

Based on figure 1 above, the largest percentage is 73 percent with the category of very good students in caring about the environment. 14 percent in the category of moderate students in caring about the environment. 9 percent with the category of students less concerned about the environment. And 4 percent with the category of good students in caring about the environment. The data illustrates that after the implementation of the 3Rs, students have a very good attitude toward caring for the environment.

Environmental awareness should be based on three important components, namely sensitivity, awareness, and behavior. Students need to have an awareness of the importance of protecting the environment as well as emotional sensitivity to environmental conditions (Baroroh E, 2022). According to WHO quoted from (Musfirah, 2018) one of the strategies to shape behavior change is by providing information that expands knowledge, it is expected to increase individual awareness, which in turn will be reflected in behavior by their knowledge. One of the efforts in providing information that can be done is by socialization. This is appropriate with what was done in this research.

D. CONCLUSION

Based on the results and discussion described above, it can be concluded that fostering environmental awareness through the implementation of waste management using the 3Rs principle runs smoothly. Students were able to receive the material well and enthusiastically. This is done to provide knowledge to students so that they can maintain environmental cleanliness and care for their environment. With the assistance of habituation of throwing garbage in its place based on its type and familiarizing students to bring their drinking bottles, students become accustomed to applying it in their daily lives. The implementation of the 3Rs application can train students' creativity in utilizing used goods. The socialization and implementation activities carried out for 4 months succeeded in bringing significant changes to the environment of SDN 02 Ampeldento, marked by the reduction of piles of garbage and a cleaner school environment. This success is also supported by the questionnaire results which show that SDN 02 Ampeldento students have a very good attitude toward environmental care.

ACKNOWLEDGEMENTS

REFERENCES

Alimun Utama, A. (2023). Analisis Pengelolaan Sampah dengan Prinsip 3R (Reduce, Reuse, Recycle) (Studi Kasus Di Desa Mamak Kabupaten Sumbawa). *Jurnal Ilmu Sosial Dan Pendidikan (JISIP)*, *7*(1), 2598–9944. https://doi.org/10.58258/jisip.v7i1.4509/http

Arisona, R. D. (2018). Pengelolaan Sampah 3R (REDUCE, REUSE, RECYCLE) Pada Pembelajaran IPS Untuk Menumbuhkan Karakter Peduli Lingkungan. *Jurnal Pendidikan Islam*, *Volume 3 nomor 1*.

Azhar, S. B. (2023). *Implementasi Program 3R Sebagai Upaya Pembentukan Karakter Peduli Lingkungan Siswa SDN Joresan*.

Baroroh E, R. F. (2022). Profil Sikap Peduli Lingkungan pada Siswa di SMA N 1 Batangan. *Unnes Physics Education Journal*.

Christover, D. Rusli. A. (2023). Meningkatkan Karakter Peduli Lingkungan Pada Usia Dini Melalui Sosialisasi Sampah dan Pengelolaan Sampah 3R (Reduce, Recycle dan Reuse) di SDN 022 Palaran Kalimantan Timur. *Pengabdian Masyarakat Borneo*, *Volume 7*, 18–24.

Ernawatiningsih, N. P. L., Tamba, I. M., Kresnayana, I. K. P. Y., & Putri, M. A. P. (2023). Penyuluhan Kesehatan Gigi dan Mulut serta Penerapan 3R (Reduce, Reuse, Recycle) di Sekolah Dasar Negeri 1 Sembung. *Jurnal Abdimas Sangkabira*, *3*(2), 337–343. https://doi.org/10.29303/abdimassangkabira.v3i2.546

Fajar D.S, dkk. (2021). Gambaran Tingkat Pengetahuan Sikap dan Perilaku Masayarakat Terhadap Upaya Pencegahan Covid-19 di Desa Jenetallasa Kabupaten Gowa. *Jurnal Farmasi Pelamonia*, *Vol.01 No.1,*.

Febriyanti, R., Rahayu, N. V. A., Pitaloka, W. D., Yakob, A., & Samsuri, M. (2023). Edukasi Pemilahan Sampah sebagai Upaya Penanganan Masalah Sampah di SD Muhammadiyah Baitul Fallah Mojogedang. *Buletin KKN Pendidikan*, *5*(1), 37–45. https://doi.org/10.23917/bkkndik.v5i1.22456

Helmi, H., Nengsih, Y. K., & Suganda, V. A. (2018). Peningkatan kepedulian lingkungan melalui pembinaan penerapan sistem 3R (reduce, reuse, recycle). *JPPM (Jurnal Pendidikan Dan Pemberdayaan Masyarakat)*, *5*(1), 1–8. https://doi.org/10.21831/jppm.v5i1.16861

Herlinawati, H., Marwa, M., & Zaputra, R. (2022). Sosialisasi Penerapan Prinsip 3R (Reduce, Reuse, Recycle) Sebagai Usaha Peduli Lingkungan. *COMSEP: Jurnal Pengabdian Kepada Masyarakat*, *3*(2), 209–215.

Mahita, R. F. (2018). *Upaya Meningkatkan Karakter Peduli Lingkungan Peserta Didik Pada Pembelajaran IPA Bervisi SETS*.

Musfirah. (2018). Pengaruh Penyuluhan Terhadap Pengetahuan dan Intensi Perilaku Pengelolaan Sampah Konsep 3R Siswa Kelas X Sekolah Menengah Kejuruan, Yogyakarta, Indonesia. In *Jurnal Publikasi Kesehatan Masyarakat Indonesia* (Vol. 5, Issue 2).

Natalia Marpaung, D., Iriyanti, Y., & Prayoga, D. (2022). *Analisis Faktor Penyebab Perilaku Buang Sampah Sembarangan Pada Masyarakat Desa Kluncing, Banyuwangi* (Vol. 13). http://jurnal.fkm.untad.ac.id/index.php/preventif

Raharjo A.S, , Indarjo S. (2014). *Hubungan Antara Pengetahuan, Sikap, dan Ketersediaan Fasilitas di Sekolah Dalam Penerapan PHBS Membuang Sampah Pada Tempatnya*. http://journal.unnes.ac.id/sju/index.php/ujph

Rahmadina, N., Syarifuddin, A., & Trisiah, A. (2024). Efektifitas Sosialisasi Program Reuse, Reduse, and Recycle di Lingkungan Kampus UIN Raden Fatah Palembang. *Jurnal Lingkungan Kebumian Indonesia*, *1*(2), 1–11. https://doi.org/10.47134/kebumian.v1i2

Ramdan, A. Y., & Fauziah, P. Y. (2019). Peran orang tua dan guru dalam mengembangkan nilai-nilai karakter anak usia sekolah dasar. *Premiere Educandum : Jurnal Pendidikan Dasar Dan Pembelajaran*, *9*(2), 100. https://doi.org/10.25273/pe.v9i2.4501

Sari P.N. (2016). Analisis Pengelolaan Sampah Padat di Kecamatan Banuhampu Kabupaten Agam. *Jurnal Kesehatan Masyarakat Andalas*.

Zulfirman R. (2022). Implemetasi Metode Outdoor Learning Dalam Peningkatan Hasil Belajar Siswa Pada Mata Pelajaran Pendidikan Agama Islam di MAN 1 Medan. *Jurnal Penelitian, Pendidikan Dan Pengajaran*, *3*. http://dx.doi.org/10.30596%2Fjppp.v3i2.11758