

THE ROLE OF THE SANGGAR ANAK SUNGAI DELI COMMUNITY IN PUBLIC SPACE-BASED WASTE MANAGEMENT EDUCATION IN SEI MATI VILLAGE, MEDAN MAIMUN DISTRICT

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ARTICLE INFO	ABSTRACT
<i>Diterima: 05 September 2025</i> <i>Direvisi: 10 September 2025</i> <i>Disetujui: 18 September 2025</i> <i>Tersedia Daring: 30 October 2025</i> Keywords: SASUDE, Waste Management Education, Public Space, Community Role, Educational Effectiveness	<i>This study aims to analyze the role of the Sanggar Anak Sungai Deli Community (SASUDE) in public space-based waste management education in Sei Mati Village, Medan Maimun District, Medan City. The research focuses on the community's use of public space, its role in educational activities, the educational strategies implemented, and the effectiveness of the waste management education program. The study used a quantitative descriptive method. Data collection was conducted through observation, interviews, documentation, and the distribution of questionnaires to community members participating in SASUDE activities. Data were obtained from the community as respondents and from SASUDE Community administrators/volunteers as informants. The results show that the Sanggar Anak Sungai Deli Community (SASUDE) utilizes a dirt yard, a cement yard, and a study room as educational resources for waste management. The community acts as a facilitator, educator, motivator, and mentor through lectures, discussions, and hands-on activities such as ecobrick making, clean-up activities for the Deli River, and the utilization of waste into valuable products. The educational program implemented showed a high level of effectiveness in increasing knowledge (83.08%), attitudes (79.97%), participation (79.88%), and changes in community behavior (85.61%) towards waste management.</i>
	ABSTRAK
Kata Kunci : SASUDE, Edukasi Pengelolaan Sampah, Ruang Publik, Peran Komunitas, Efektivitas Edukasi	Penelitian ini bertujuan untuk menganalisis peran Komunitas Sanggar Anak Sungai Deli (SASUDE) dalam edukasi pengelolaan sampah berbasis ruang publik di Kelurahan Sei Mati, Kecamatan Medan Maimun, Kota Medan. Fokus penelitian meliputi pemanfaatan ruang publik yang digunakan komunitas, peran komunitas dalam kegiatan edukasi, strategi edukasi yang diterapkan, serta efektivitas program edukasi pengelolaan sampah. Penelitian menggunakan metode deskriptif kuantitatif. Pengumpulan data dilakukan melalui observasi, wawancara, dokumentasi, dan penyebaran kuesioner kepada masyarakat yang mengikuti kegiatan SASUDE. Data penelitian diperoleh dari masyarakat sebagai responden dan pengurus/relawan Komunitas SASUDE sebagai informan. Hasil penelitian menunjukkan bahwa Komunitas Sanggar Anak Sungai Deli (SASUDE) memanfaatkan halaman tanah, halaman semen, dan ruang belajar sebagai media edukasi pengelolaan sampah. Komunitas berperan sebagai fasilitator, edukator, motivator, dan pendamping melalui metode ceramah, diskusi, serta praktik langsung seperti pembuatan ecobrick, aksi bersih Sungai Deli, dan pemanfaatan sampah menjadi produk bernilai guna. Program edukasi yang dilaksanakan menunjukkan tingkat efektivitas

yang tinggi dalam meningkatkan pengetahuan (83,08%), sikap (79,97%), partisipasi (79,88%), dan perubahan perilaku masyarakat (85,61%) terhadap pengelolaan sampah.

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1. INTRODUCTION

The waste problem has become a crucial issue and one of the greatest environmental challenges facing modern civilization, both globally, nationally, and locally. According to the World Bank in 2018, global waste production is estimated to increase by approximately 70% by 2050, reaching a total of 3.40 billion tons annually. This increase is driven by rapid urbanization, population growth, and economic development (Elamin et al., 2018).

Indonesia faces a highly complex waste management challenge. As the world's second-largest contributor of plastic waste after China, Indonesia faces an increasingly pressing plastic waste emergency (Juniarti, 2020). Household waste continued to dominate the national waste mix in 2024. According to data from the National Waste Management Information System (SIPSN) of the Ministry of Environment and Forestry (KLHK), Indonesia generated approximately 36.67 million tons of waste throughout 2024 (Medan, 2025).

Waste management is a complex process involving various stakeholders, including governments, businesses, and individuals. The primary goal of waste management is to reduce the volume of waste generated, recycle and reuse materials where possible, and safely dispose of waste if it cannot be recycled, recycled or reused (Fajeriadi et al., 2024). Community-based waste management is expected to contribute to the sustainability of cities and settlements in accordance with SDGs target 11, specifically to reduce the detrimental per capita urban environmental impacts by 2030, including by paying special attention to air quality, including municipal waste management (Marlina, 2024).

Medan, the largest metropolitan center on the island of Sumatra, faces serious environmental challenges, particularly related to waste management (Franklin, 2023). With a growing population and dynamic economic activity, the volume of waste produced in Medan is reported to continue to increase annually, while landfill capacity is increasingly limited and often overloaded (Hafizah et al., 2023). One of the most vulnerable areas directly impacted by poor waste management is the area along the Deli River Basin (DAS).

The Deli River is one of the main rivers flowing through Medan. Industrial and residential development, along with pollution, is evident in its brownish water and the accumulation of scattered trash, from the banks to the shallowing of the riverbed (Nasution, 2023). The Deli River is often transformed into a giant garbage dump due to

irresponsible individuals' indiscriminate littering and the lack of adequate waste management infrastructure along its banks (Hayati, 2020).

In Sei Mati Village, which borders the Deli River, the negative impacts of this waste disposal are clearly felt by the residents living along the Deli River. Waste dumped into the river can pollute the river, especially plastic waste, which can harm river life. However, if fish living in polluted rivers are still consumed by humans, the river pollution can gradually pose a health risk to humans if consumed continuously (Juniarti, 2020). The government has implemented various strategies to address the waste crisis by providing fleets, building final disposal sites, and activating waste banks, but these efforts have not contributed significantly to reducing waste volume (Idrus et al., 2025).

The success of sustainable waste management depends not only on the availability of technology or the strength of government regulations, but is fundamentally determined by the level of awareness, active participation, and sense of ownership from all levels of society. Education is the process of providing information to the public with the aim of increasing their understanding and knowledge. Waste management education can be conducted in formal educational institutions and can also be implemented within communities (Hidup, 2020). Therefore, community education and empowerment are key strategies that are non-negotiable for building a deep-rooted and sustainable culture of waste awareness.

Various local initiatives have emerged and developed as a form of environmental awareness amidst pessimism and structural challenges faced by the community. One such initiative is the SASUDE Community. This community emerged from the collective concerns of local residents regarding the increasingly concerning environmental conditions, particularly along the banks of the Deli River. The Deli Riverbanks in Medan City are known for their high population density and complex socioeconomic problems, such as poverty, unemployment, and limited access to adequate education. These conditions limit the growth and physical and psychological development of children, thus the SASUDE Community actively and consistently carries out environmental conservation activities and community education, particularly for the younger generation (Malau et al., 2025).

The uniqueness and innovation of the SASUDE movement lies in its approach to utilizing public spaces as educational tools. Public spaces such as parks, fields, residential alleys, or even riverbanks have been revitalized and repurposed as "learning arenas" or "open classrooms" to disseminate practical knowledge about the importance of waste management. Public spaces serve as places for interaction, gathering, and socializing with one another (Maharani et al., 2023).

The function of public spaces in densely populated settlements is equally important, namely as a forum for social interaction among residents (Wijaya, 2019). This is believed to be important for waste management, such as sorting, reducing, and recycling (3R: Reduce, Reuse, Recycle), and Even composting can be communicated more effectively and more readily accepted by the public. Lack of public awareness and initiative poses challenges to waste management. Furthermore, limited technology, lax

regulations, and a lack of economic support hinder developing countries from implementing 3R-based waste management (Maharani et al., 2023).

While community-based initiatives like SASUDE's demonstrate significant potential as a solution model, there is limited academic research specifically and in-depth on how to effectively utilize public spaces as a medium for waste management education. This lack of understanding lies in the strategies and impacts of utilizing spaces as venues for informal, community-based environmental education.

This research focuses analysis on four main aspects, namely: (1) characteristics of public spaces in organizing waste management education, (2) the role of the SASUDE Community in utilizing public space as an educational medium, (3) strategies implemented by the SASUDE Community in organizing public space-based education, (4) the effectiveness of public space-based waste management education carried out by the SASUDE Community (Mehta & Palazzo, 2020). With a more detailed focus on waste education and public space base, this research is expected to provide a fresher and more measurable empirical contribution to the development of community intervention models in riverbank areas (Marlina, 2024). This research is important and relevant to be carried out, to analyze and describe in depth the characteristics of public spaces, the use of public spaces, strategies and effectiveness of waste management education carried out by the SASUDE Community in Sei Mati Village, Medan Maimun District (Malau et al., 2025).

Based on the problems above, the author is interested in conducting research with the title "The Role of the Sanggar Anak Sungai Deli Community in Public Space-Based Waste Management Education in Sei Mati Village, Medan Maimun District".

2. METHOD

This research was held in Sei Mati Village, Medan Maimun District, Medan City, North Sumatra Province. spatial, location study covers all administrative areas Sei Mati sub-district as a research area. Sei Mati sub-district is located with point coordinates 3° 34' 1" N and 98° 41' 9" E. Determination of the Sei Mati Sub-district area as location study based on considerations that the area is location existence and implementation activity Community Deli River Children's Studio (SASUDE), especially in activity education management waste that is utilized room public in the environment community and region Deli River banks (Pamudy et al., 2018). Administrative area use Sei Mati Village as location study customized with focus research that is not only study One location activity SASUDE Community, but also studies characteristics room public, role community, educational strategies, and effectiveness education management waste carried out in the Sei Mati sub- district area (Nasution, 2023).

This research held in April to by May 2026. Implementation study covering a number of stages, namely preparation research, data collection in the field, observation, interviews with informants, dissemination questionnaire to community, documentation activity research, as well as data processing and analysis (Nulova & Mubarak, 2025).

Population study This consists of on a number of groups that play a role in a way direct and No direct in implementation activities, namely :

- a. SASUDE administrators, namely the party that plans, manages and implements activity education management rubbish.
- b. The population of Sei Mati Village, Medan Maimun District is 11,070 people (Central Statistics Agency, Medan City 2025).

Research This use purposive sampling technique, namely technique taking sample in a way intentionally based on criteria certain things that are considered relevant with objective research. Researchers set criteria informants who are considered own knowledge, experience, and involvement direct in activity education management waste management carried out by the SASUDE Community in Sei Mati Village, Medan Maimun District (Pertiwi et al., 2024).

Data collection techniques used in study This shared become four, namely observation, documentation, interviews and questionnaires.

- a. Observation (Observation): Researcher do observation direct to characteristics room public use, activities education management waste management carried out by the SASUDE Community, as well as how response public during activity education management rubbish ongoing.
- b. Interview : Researcher do interview deep semi - structured with informant SASUDE Community and the local community lives in Sei Mati Village. Interview This aim For dig information deep related role SASUDE Community and the strategies implemented by the SASUDE Community in education management rubbish.
- c. Questionnaire : Questionnaire is technique data collection carried out with method give question to respondents. Questionnaire used For measure level the effectiveness of the program implemented by the SASUDE Community in change behavior public related management rubbish.
- d. Documentation : Researcher gather relevant documents For supporting research data, such as photos and videos of activities, social media uploads community, as well as profile data SASUDE Community.

In research this technique data analysis used is analysis descriptive quantitative purposeful For analyze characteristics room public, role SASUDE community in utilise room public, SASUDE community strategy, and measuring level The effectiveness of the program implemented by the SASUDE community in Sei Mati Village, Medan Maimun District, Medan City. table 3 techniques data analysis (Prawisudawati et al., 2024).

3. RESULT AND DISCUSSION

Research result

This research was conducted in Sei Mati Village, Medan Maimun District, to determine the characteristics of public spaces, the community's role in education, educational strategies, and the effectiveness of waste management education. To obtain this data, research was conducted in Sei Mati Village, Medan Maimun District (Rahmah et al., 2024).

Characteristics of Public Spaces Used by the SASUDE Community in Waste Management Education

Based on observations conducted by researchers in the SASUDE Community, it was discovered that the public space utilized as a waste management education facility consists of several areas: a dirt yard, a cement yard, and a study room. These three spaces have different physical characteristics, but they mutually support the implementation of waste management education activities (Rahmawati et al., 2021).



Study Room

Cement YardLand Yard

Figure 1. Public Space for Waste Management Education

The characteristics of public spaces observed in this study included the type of public space used, its size, and its cleanliness. Observations indicated that the spaces were utilized according to their respective functions, enabling educational activities to proceed effectively.

Observations show that the public spaces used by the SASUDE Community are located within the community and accessible to participants. These public spaces serve not only as gathering places but also as learning resources, enabling the community to gain hands-on experience in waste management. The use of open spaces provides participants with the opportunity to not only receive theoretical material but also to engage in hands-on practice, making the educational process more interactive (Rezeki et al., 2024).

The Role of the SASUDE Community in Utilizing Public Spaces

Based on observations conducted during the waste management education program, it was clear that SASUDE Community volunteers were actively involved in every stage of the activity. Volunteers were not only present as event organizers but also took a direct role in preparing public spaces, organizing the event, and interacting with participants throughout the educational process. This involvement demonstrates that volunteers are a crucial element in supporting the implementation of the waste management education program within the SASUDE Community.

Before the activity began, volunteers first arranged the study room and courtyard, which would be used as educational locations. The arrangement was carried out by adjusting the function of each space so that participants could participate comfortably. The dirt yard was used as a waste management practice area, the cement yard was used

as a gathering place and for initial instruction, while the study room was used for material delivery and discussion. This division of tasks demonstrated that the volunteers understood the function of each public space and were able to utilize it according to the needs of the activity (Saragih et al., 2023).

During the activity, volunteers helped deliver material on the importance of maintaining environmental cleanliness, provided examples of how to sort waste according to type, and guided participants in practicing waste management. According to an interview with the SASUDE Community Leader, L, the researcher stated:

"Many organizations from outside have come here to provide education to the local community, and they also help the local community in carrying out ongoing activities."

Strategies Implemented by the SASUDE Community in Organizing Waste Management Education

Based on the researcher's observations, the SASUDE Community implemented various strategies in providing waste management education to the community. These strategies were designed so that the information delivery process not only provided knowledge but also fostered understanding, skills, and community awareness of the importance of maintaining a clean environment. The strategies implemented included the use of various educational methods, participatory activities, and the use of learning media to support the educational process. These three strategies complemented each other, ensuring that educational activities were effective and easily understood by participants (Sari, 2024).

Educational Methods Used When Delivering Education and Carrying Out Activities

Based on observations, the SASUDE Community employed several learning methods to deliver material on waste management, including lectures, discussions, and hands-on practice. The lecture method was used in the initial stages of the activity to provide an understanding of the types of waste, its impact on the environment, and the importance of early waste management. The material was delivered in simple language so that it could be understood by all participants, especially children, who were the primary target audience for the educational activities (Sitorus et al., 2025).

The next stage is hands-on practice. Participants are encouraged to apply the material they've learned through waste sorting activities and practicing maintaining environmental cleanliness around the activity location. Through this practice, participants not only understand the theoretical concept of waste management but also gain real-world experience in implementing environmentally friendly behaviors.

Based on observations, the combination of these three methods makes the educational process more engaging and easier to understand. Participants are not merely listeners but also actively participate in each stage of the activity, thus optimally achieving learning objectives.

Forms of Activities Carried Out Related to Waste Management

Based on the research results, the form of activity carried out by the SASUDE Community is managing plastic waste into *ecobricks*. This activity is not only carried out

by the SASUDE Community, but also involves the community and volunteers (Sinuraya, 2025).

Based on observations, the participatory nature of the activities increased participant enthusiasm during the education. This was evident in their involvement in each stage of the activity, rather than relying solely on verbal presentations. Therefore, the activities organized by the SASUDE Community are not only focused on providing information but also on developing attitudes and skills in waste management.

Media or Tools to Assist in Delivering Education and Activities

Based on observations, the SASUDE Community utilized various media and tools to support waste management education. These included segregated trash bins, cleaning tools, plastic waste as practical materials, educational posters, and examples of waste utilization as learning materials. These media were used according to the stages of the activity. Educational posters were used to help explain the material on waste management, while separate trash bins and plastic waste were used in practical waste sorting activities. Cleaning tools were used when participants cleaned the environment, while examples of waste utilization were used to illustrate that waste can still be processed into useful and economically valuable items (Riduwan, 2018).

Based on observations, the strategy implemented by the SASUDE Community in organizing waste management education has been implemented through the application of various educational methods, forms of activities that actively involve participants, and the use of learning media appropriate to the material presented. These three strategies support each other in creating an interactive, easy-to-understand learning process and providing direct learning experiences to the community. Thus, the strategy implemented by the SASUDE Community not only increases participants' understanding of waste management but also encourages the formation of behavior that is more concerned with environmental cleanliness.

Effectiveness of the Waste Management Education Program by the Sanggar Anak Sungai Deli Community (SASUDE)

The effectiveness of the waste management education program conducted by the SASUDE Community was one of the aspects examined in this study to determine the extent to which the program was able to impact the community in Sei Mati Village. Effectiveness was measured based on the responses of 99 respondents through the distribution of questionnaires compiled based on four indicators: community knowledge, community attitudes, community participation, and changes in community behavior. Each indicator consists of three statements describing the condition of the community after participating in the waste management education program organized by the SASUDE Community (Tumimomor & Lasso, 2024).

The assessment was conducted using a four-level Likert scale, then the scores obtained were converted into percentages to determine the program's effectiveness. The higher the percentage obtained, the greater the effectiveness of the education program in increasing knowledge, forming positive attitudes, encouraging participation, and

generating behavioral changes in the community towards waste management (Udin et al., 2025).

Table 1. Results of Measuring the Effectiveness of the Waste Management Education Program by the Sanggar Anak Sungai Deli Community (SASUDE)

Indicator	Total Score	Maximum Score	Average	Percentage	Category
Knowledge Public	987	1188	9.97	83.08%	Very high
Attitude Public	950	1188	9.60	79.97%	Tall
Participation Public	949	1188	9.59	79.88%	Tall
Change Behavior	1,017	1188	10.27	85.61%	Very high

Based on the table, it is known that the effectiveness of the Waste Management Education Program by the SASUDE Community is in the high to very high category for all measured indicators. The knowledge indicator obtained a percentage of 83.08%, which is categorized as very high. The attitude indicator obtained a percentage of 79.97%, which is categorized as high. The participation indicator obtained a percentage of 79.88%, which is categorized as high, while the behavior change indicator obtained the highest percentage of 85.61%, which is categorized as very high. These results indicate that the implemented education program is able to have a positive impact on the community.

Public Knowledge

The community knowledge indicator is used to determine the level of community understanding of waste management after participating in the Waste Management Education Program organized by the SASUDE Community. This indicator is measured through three statements related to community understanding of waste sorting, waste management, and the benefits of educational activities provided by the SASUDE Community. Based on the results of data processing, the community knowledge indicator obtained a total score of 987 out of a maximum score of 1,188, with an average score of 9.97 and a percentage of 83.08%, so it is included in the Very High category.

Furthermore, these results demonstrate that the educational process not only provided information but also increased public awareness of the importance of sustainable waste management. This improved knowledge is expected to form the basis for developing attitudes and behaviors that are more concerned about environmental cleanliness (Velenturf & Purnell, 2021).

Public Attitude

The community attitude indicator was used to determine the community's attitude and concern towards waste management after participating in the Waste Management Education Program organized by the SASUDE Community. The assessment was carried out through three statements that describe the community's concern for environmental cleanliness, willingness to protect the environment, and support for waste management

education activities. The results showed that the total score was 950 out of a maximum score of 1,188, with an average score of 9.60 and a percentage of 79.97%, so it is in the High category. Despite being in the high category, this indicator's percentage is still below the knowledge indicator. This indicates that some communities still lack a strong commitment to consistently implementing environmental stewardship. Therefore, ongoing educational activities are needed to strengthen positive public attitudes toward waste management.

Community Participation

The community participation indicator aims to determine the level of community involvement in participating in various waste management activities organized by the SASUDE Community. The assessment is carried out through three statements related to community participation in educational activities, environmental cleanup activities, and other waste management activities. Based on the results of data processing, a total score of 949 was obtained out of a maximum score of 1,188, with an average score of 9.59 and a percentage of 79.88%, so it is included in the High category.

These results indicate that the community has actively participated in various activities organized by the SASUDE Community. This participation is evident in educational activities, community cleanup efforts, and various activities aimed at raising awareness of waste management. (Wijaya, 2019)

Despite being in the high category, community participation levels can still be improved. This can be influenced by various factors, such as busy work schedules, limited time, and the personal circumstances of each respondent, meaning not everyone can participate in every activity. Therefore, ongoing efforts are needed to increase community participation in every activity carried out by the SASUDE Community.

Behavioral Change

The community behavior change indicator is used to determine the extent to which the Waste Management Education Program implemented by the SASUDE Community has been able to encourage changes in community behavior regarding waste management. The assessment is conducted through three statements related to community habits such as disposing of waste properly, sorting waste according to type, and reusing waste that still has utility.

The Role of the Deli River Children's Studio Community (SASUDE) in Public Space-Based Waste Management Education

The SASUDE community, in this study, plays a crucial role in transforming public spaces into educational platforms for waste management. Available spaces won't automatically become learning spaces without someone to organize activities and guide the community in their use. Therefore, SASUDE's presence is crucial because the community plays a key role in connecting spaces, educational activities, and the community.

SASUDE's role as a facilitator can be understood through its ability to provide spaces and activities that enable communities to gain hands-on experience. Communities

are not merely recipients of information, but are also given the opportunity to participate in activities and practice. Thus, the community's presence helps transform the available space into a learning space (Bank, 2018).

These findings align with Sinuraya's (2025) research on the role of Sanggar Anak Sungai Deli in raising public awareness of the Deli River's sustainability. The study demonstrated that SASUDE positively impacts the community through various community-led activities. Similarities with this study lie in SASUDE's role as a community that promotes environmental awareness. The difference is that this study specifically demonstrates that one way this role is implemented is through the use of public spaces as educational resources for waste management.

Strategies Implemented by the Deli River Children's Studio Community (SASUDE) in Organizing Waste Management Education

The educational strategy implemented by the SASUDE Community demonstrates that knowledge about waste management is delivered through several complementary methods. These strategies include material delivery, discussions, hands-on practice, and various activities such as ecobrick making, clean-up efforts on the Deli River, and utilizing waste to create useful products.

Effectiveness of the Waste Management Education Program by the Sanggar Anak Sungai Deli Community (SASUDE)

The high level of public knowledge demonstrates that SASUDE's education can foster understanding of waste management. However, program effectiveness is not solely measured by knowledge. More importantly, whether that knowledge translates into attitudes and actions. In this study, behavioral change was the highest indicator.

The significant behavioral changes demonstrate that SASUDE's education program extends beyond information delivery. Knowledge about waste sorting, disposal, and utilization has become embedded in people's daily habits. This demonstrates the direct connection between the educational process and the application of this knowledge in everyday life (Zengwei & Shanshan, 2022).

These findings can be compared with research by Nulova and Mubarak, which showed that community participation and education impacted public space cleanliness, but behavioral changes were limited to the time the activities took place. The SASUDE study showed a more positive outcome, with the behavioral change indicator achieving the highest score. This difference suggests that repeated activities combined with hands-on practice have the potential to help communities apply knowledge in their daily lives.

Compared with Sinuraya's (Hantono et al., 2018) study, this study confirms the finding that SASUDE's presence has a positive impact on community awareness around the Deli River. However, this study provides further measurement by examining effectiveness through four indicators. Thus, this study not only demonstrates SASUDE's role in environmental awareness but also provides insights into the community's level of knowledge, attitudes, participation, and behavioral changes. Program effectiveness is also inseparable from the characteristics of the public space used. Spaces that can be used

for shared activities provide a place for people to learn and interact. The social function of the space enables communication and collaboration, while practical activities provide hands-on experience. Thus, the characteristics of the public space, the role of the community, and educational strategies are interconnected in supporting program effectiveness.

Based on the overall discussion, it can be understood that the effectiveness of SASUDE's waste management education is the result of interconnected processes. Public spaces provide a place for learning and interaction, the community acts as a facilitator and catalyst, educational strategies connect knowledge with experience, and the community applies that knowledge in their daily lives (Santoso et al., 2021).

Thus, the SASUDE Community's use of public space can be viewed as an environmental education approach that is not only oriented toward imparting knowledge, but also toward shaping attitudes, participation, and behavioral change. The findings of this study demonstrate that public space can be an effective medium when activated through participatory, contextual, and action-oriented community activities.

4. CONCLUSION

Based on the results of research and discussion regarding "The Role of the Sanggar Anak Sungai Deli Community (SASUDE) in Public Space-Based Waste Management Education in Sei Mati Village, Medan Maimun District", several conclusions can be drawn as follows: The Sanggar Anak Sungai Deli Community (SASUDE) optimally utilizes public spaces as a medium for waste management education. The public spaces, consisting of a dirt yard, a cement yard, and a study room, are utilized according to their respective functions, namely as a place for practice, demonstrations, and the delivery of materials and discussions. The utilization of these spaces creates a conducive learning environment, supports interaction between the community and the environment, and strengthens the implementation of public space-based environmental education.

The Sanggar Anak Sungai Deli Community (SASUDE) acts as a facilitator, educator, motivator, and mentor in implementing waste management education. This role is realized through the active involvement of volunteers in planning, implementing, and assisting each educational activity. The community's presence increases community participation, particularly among children and adolescents, fostering awareness and shared responsibility for maintaining a clean environment.

The educational strategy implemented by the Deli River Children's Studio Community (SASUDE) is a combination of lectures, discussions, and hands-on practice, supported by various activities such as ecobrick-making, clean-up efforts on the Deli River, and recycling waste into valuable products. The use of learning media such as segregated trash bins, educational posters, and examples of recycled materials has increased public understanding and encouraged the implementation of waste management in everyday life.

The public space-based waste management education program implemented by the SASUDE Community demonstrated a high level of effectiveness based on the measurement results of the indicators of knowledge, attitude, participation, and changes

in community behavior. This is indicated by the results of the effectiveness analysis which obtained a value of 83.08% for the knowledge indicator (very high category), 79.97% for the attitude indicator (high category), 79.88% for the participation indicator (high category), and 85.61% for the behavior change indicator (very high category). These results indicate that the implemented education program is able to increase knowledge, shape environmental awareness, encourage community participation, and create behavioral changes in waste management.

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