Synergy between student and communities to manage waste in Makassar city Indonesia

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Abstract. Good synergy or relationship between students and the community is needed in fieldwork activities. Students build synergy with the community through collaborative activities. Community Service Program is a form of community service to implement the knowledge gained during lectures. Community service aims to minimize the gap between the community and students. The synergy between students and the community in KKN (Community Service) activities can be a place to build management in environmental management. The purpose of this paper is to explore the efforts of synergy that have been carried out by students in protecting the environment in Makassar City.

1. Introduction
Makassar City is one of the cities that has a large population in Eastern Indonesia and is the capital of the Province of South Sulawesi. Makassar City is categorized as one of the largest cities after the city of Medan, which is outside Java. The city has a large area and a large population. This situation also affects the level of waste products in the city of Makassar. The waste dump in 2014 in Makassar City had reached 4,301.18 m³ while the amount of waste that could be handled was 3,881.25 m³. Garbage that cannot be handled by the Makassar City Park and Cleanliness Service is 419.93 m³ [1]. The condition is one of the problems faced by the City of Makassar.

There is a program that uses the local language of Makassar as the motivator of the community in maintaining their environment, namely Makassar Tidak Rantasa (MTR), or Makassar is not Dirty. The word rantasa means dirty, which is often associated with environmental hygiene problems. MTR is a program to keep Makassar City clean. One program from the MTR is LISA (See and Grab Trash Movement). The LISA movement is a policy of the Mayor of Makassar that needs to be applied in daily life to welcome the clean city of Makassar. According to Asgun, based on data in April 2014 in the Complaints Section, especially the Public Relations Section of the Makassar City Secretariat, there
were 133 complaints, one of which was related to cleanliness. In May 2014, there were 126 complaints, including hygiene. To overcome this condition, the Mayor of Makassar made an MTR policy, which was considered to be the solution to problems in maintaining cleanliness [2].

Mayor of Makassar, Dani Pomanto introduced the LISA Program as one of the applied programs of the MTR program, which was also a flagship program. According to Arfah, the LISA movement is an initial step that can be taken to foster awareness for all residents of Makassar City to be more concerned about the surrounding environment both at home and outside the home in order to realize the beautiful Makassar City and avoid rubbish [2].

In addition to problems regarding waste, the problem that often occurs in large cities is the lack of green open space. This condition occurs because of the development of buildings that continue to grow. This land use will cause degradation of environmental quality. Then, it will cause other negative impacts such as green open space in the city, which is decreasing and the city ecosystem is disrupted. Meanwhile, the existence of the city’s green open space is expected to overcome environmental problems in urban areas [3]. There are two ways to deal with this condition, namely the role of youth, which can bring change, especially the role of students and youth. An active student is not only voicing his opinions on campus but also able to act together in managing environmental management. One of the roles of students is students as agents of change. Students are required to be actors of change for the environment.

Being an actor of change in managing the environment is not an easy thing because it requires a variety of supporting factors so that everything can be effective and work as expected in protecting the environment. One of the supporting factors is synergy. The synergy between various elements of society and students is needed in building and managing the environment, especially in urban environments. The synergy of several elements of the social order plays an active role in supporting the development and safeguarding of the environment. Good synergy will create good relationships between communities. Synergy is the essence of principle-centered leadership [4]. Synergy is the main point of building relationships that emphasize principles. Synergy is useful as a relationship that can unite and unleash the potential that exists in every human being. Synergy behavior is a special skill possessed by someone to unite a different group of people into a working system so as to achieve mutual success.

Synergy is a process and is systematic in nature so that the process of a diversified business unit can produce better value because it works in a system compared to business units that work independently [5]. Creative synergy can be a potential factor for social innovation [6]. Synergy is one strategy in overcoming a problem. An expert said that a system could be said to be a synergy if it has effective communication indicators, good responses, creative and trustworthy [7].

Covey in Wati defines synergy as a combination of elements or parts or combinations that can produce something more useful [8]. Synergy is considered important in an effort to facilitate the achievement of goals. Synergy is also a manifestation of social interaction. Social interaction is a process that involves one or more people in the form of groups that have the same vision or purpose and also together in carrying out activities that have been mutually agreed upon. A positive synergy will create a positive social interaction.

According to Soekanto [9] that social interaction divided into four aspects, namely:

1. Cooperation. Cooperation is one process in a social interaction involving individuals or groups in carrying out a joint activity to achieve a goal that has been set together.
2. Accommodation. Accommodation is an effort made by someone in finding ways to solve a problem without harming one another.
3. Competition. Competition is a social process that occurs carried out by a person or group of people who are beneficial to themselves without using threats or violence by highlighting pre-existing prejudices.
4. Social conflict. Social conflict is a social interaction that involves more than one person or group of people in many ways, including the use of violence or threats to achieve their goals.
The concept of synergy is one of the patterns of social interaction that is included in the associative category or the interaction pattern of cooperation. This pattern of interaction is a pattern that emphasizes relationships that aim to achieve mutual interests. A good synergy is a good form of cooperative interaction. The approach used to find out the synergy activities between students and society is a qualitative approach. This approach focuses on data collected from interviews, library research, and other legal documents. A qualitative approach is used specifically in case studies. The case study approach is an approach to social studies because it emphasizes subjective experiences in certain situations [10]. The purpose of this research approach is to provide understanding to others in a description.

2. Research Methods
The use of a qualitative approach in this activity is to connect reality with the prevailing theory, then use descriptive analysis of the data. Descriptive is one approach in a qualitative approach. This method places more emphasis on portrayals related to social phenomena so that other people can better understand these social problems. Observation activities are also carried out in the first week. Students participate with the community so that researchers can know in depth the synergy between students and the community. In this stage of observation, a student is required to go directly to the field and then understand the differences in community synergy in the field.

After observing the surrounding environment, students participated in socialization, mentoring, and in all forms of community activities such as participating in community cooperation activities and other activities (deaths, childbirths, children's birthdays, celebrations). Independence This activity can understand the pattern of synergy. The activity was carried out in Makassar City because the Makassar Mayor's work program was in accordance with the activities carried out, namely environmental management, for example, the LISA program. This activity is held from July 2018 to August 2018. Students come from various kinds of faculties, with a total of 29 students and three lecturers as an adviser.

3. Result and Discussion
Students were asked by the supervisor to stay in the village office after they got permission from the Head of the Village. On the first day, students conducted observations. Then, the village head introduced the profile of the region and the environmental conditions in the area. Students were divided into two groups. In the first group, students conducted socialization and assistance to the community. In the second group, students socialized their program at schools and hospitals. The socialization to the community was attended by community leaders, religious leaders, stakeholders, groups of mothers, groups of study mothers, and groups of mothers who were active in hospitals. The first group introduced a method of waste management. Students explained the importance of waste management because the amount of waste continues to increase while the land to collect garbage is very limited. Waste management can make the population of Tamalanrea Jaya Village healthy.

Students explained the types of waste such as garbage that comes from activities in hospitals, health centers or clinics including bio-medical waste; waste originating from electronic materials, explosives and radioactive materials including into waste with special hazards; garbage originating from industrial waste is included in waste; and waste originating from collapsed buildings, from office activities, tourism activities or business and garbage from households are classified into urban waste. Urban waste was the focus of student activities during their programs.

Furthermore, students explained the methods that can be done in urban waste management, including prevention efforts by minimizing the use of plastic waste. The second method was reused. This method teaches the community to be able to reuse the garbage. The next method is recycled. This method taught the community to recycle the waste, which is considered still usable, especially plastic waste because the waste cannot be decomposed which will eventually become a poison that can seep into the groundwater.
Students also explain to the community about the benefits of sorting waste. First, the community must be able to distinguish between types of waste so that it is easy to sort of waste. Elimination of waste that can be decomposed because the waste is classified as rapidly decomposing waste, including waste from fruits, vegetables or other types of food and garbage from fallen leaves or dried leaves. Then sorting of non-decomposing or easily decomposed waste is classified as inorganic waste such as garbage from plastic, plastic bottles, garbage from cloth, garbage from cardboard or other types of paper or paperboard, garbage from glass bottles, garbage from stereo foam and garbage from the ruins of the building.

Furthermore, the student explained that sorting waste classified into bio-medical waste included waste plaster, gauze, cotton trash, garbage from medical gloves and masks, bottle trash and the rest of the drug package, and tube and syringe waste. The following sorting is the sorting of waste from electronics such as garbage from cables that no longer use because it is damaged, garbage from components of electronic goods that can no longer be used such as ICs, PCBs and sockets and waste from electronic devices that are no longer useful like computers, handphone, radio, and tv.

The following sorting is the sorting of metal waste such as waste and brass scrap, copper, aluminum and iron or steel. The next sorting is the sorting of hazardous waste such as garbage from radioactive, batteries, batteries containing lead and TL lamps that contain dangerous mercury gas. Students explained to the public about modern waste management, namely by recycling (recycle). This recycled waste consists of plastic waste, glass bottles, cardboard, electrical cables and aerosol tubes. This waste is recycled which can be used for experimental tools in schools.

The benefits of this information dissemination include increasing public knowledge about the importance of sorting because the un-sorted waste will reduce the value of the item and it will be difficult to recycle and increase costs in recycling it. The community understands the importance of sorting waste because garbage that has good potential will end up in a landfill if it is not sorted. After participating in socialization activities, students assisted the community in making waste separation at source or sorting at the source. The community was asked to provide three trash cans that were given different colors, namely blue, yellow and red. Blue trash cans are useful for all types of plastic, glass, and trash cans. For yellow contains garbage from paper such as food cartons and juices. Red rubbish bins are useful for garbage from the kitchen or organic waste. The obstacles faced during the mentoring process included the difficulty of convincing the public about the importance of sorting waste. Sorting the right waste was only done in a few households. While for other households, it still held the principle of disposing of garbage in its place.

Figure 1. Social activity of students and the community.

Students invited the public to carry out community service activities every Sunday. The picture above is one form of synergy carried out by students. This activity involved communities around the area of activity. Community service activities are one of the routine activities carried out by the community every Saturday or Sunday. This activity is a form of concern for students to the
community and also to improve environmental cleanliness. A clean environment creates comfort in the region. Students also plant plants in the front yard of the soccer field. This mutual cooperation activity is a routine agenda for students every Sunday. Students and the community cleaned the drains from the garbage that accumulates on the channel. Then they cut the tall grass in the village office's yard and repaired the park around the field. This synergy activity is very useful in increasing familiarity between students and the community. Community service activities with cleaning the environment were also in preparation for the Independence Day on August 17. The synergy between students and the community in devoted work activities fosters collaboration between students and the community in raising awareness of the environment in addition to fostering unity so that conflicts that lead to solutions can be avoided. Students made the group conducted socialization and assistance in schools at Tamalanrea Jaya Village. The waste used in the socialization activities in schools was an inorganic waste.

![Figure 2. The synergy between students and the community at school.](image)

Activities in schools began with the presentation of students about the importance of managing proper waste so that the volume of waste can be reduced and students can understand the importance of sorting organic and inorganic waste. Students ask participants to think more creatively, namely by utilizing inorganic waste to be a simple science teaching aid. Making teaching aids from inorganic waste is one form of learning that directly involves students as subjects in the teaching and learning process. Students made several science teaching aids which then ask participants directly to practice the tool. Direct practice can provide motivation in learning because students can apply the theory clearly and also improve understanding of concepts that have been learned. In the activity, students presented several teaching aids, one of which was a lung prop made of used bottles and balloons.

4. Conclusion
The benefits of synergy activities between students and the community include the understanding of the community about the management of waste sorting. Students are increasingly creative in carrying out activities related to waste management. Another benefit is that society has a sensitivity to environmental cleanliness and a social spirit towards others. For the economic aspect, people who have the skills to use garbage become teaching aids that can be used in schools then sell it to the school. This brings benefits because it can be a source of income. Plastic waste that has been sorted, then sold to the collector. For ecological aspects, waste that is sorted correctly will create an environment that can stabilize the life cycle because it is not polluted with garbage. As agents of change, students have great enthusiasm for helping the community about sorting waste and mentoring to school students about the use of inorganic waste into science teaching aids. The obstacles faced during the process of synergy activities took place, including several community groups having a low level of awareness that they did not care about the correct sorting of waste. Some community groups are still at the level of "throwing garbage in its place" and have no concern about sorting waste properly.
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