3R Based Waste Management in Jakarta Higher Education Institutions: An Application of Environmental Education to Create Sustainable Campus

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Abstract. Jakarta is a city that has a serious problem in terms of solid waste management. The Jakarta Environmental Agency records 7,000 tons of waste generated every day in this city. The solid waste is produced from settlements, offices, schools to campuses which are transported daily by 1,200 garbage trucks. Of that amount, around 1,900 to 2,000 tons are plastic waste. Higher educational institutions have a key role in this regard to develop a sustainable society. The concept of sustainability in campus can be propagated to students through the initiatives such 3R activities namely reduce, reuse and recycle. However, until now there are still a lot of universities have not given full attention to the environmental issues. Therefore, the environmental education has not been implemented well among the academic community. This study aims at answering the questions on what factors made the environmental education have not been implemented well in higher education institutions and what should universities do to create sustainable campus. In this research, a case study approach is employed to 3 universities and semi structured interviews were conducted to a total of 19 participants, consists of university students, university top management, lecturers, NGO activist to gain the information on the implementation of 3R based waste management policy. Interviews were also conducted with the cleaning service team in 3 universities to find out whether the students understood how to sort the waste to be disposed of. The research proved that environmental education is urgent to be applied in universities to create the sustainable campus. Further analysis indicated that universities which have applied the 3R programs show higher student achievement compared to those which do not implement the 3R programs.

Keywords. 3R Waste Management, Educational Management, Sustainable Campus

Introduction
Jakarta is currently classified as an emergency city of waste (does not have landfill and there is no waste management in the area of solid waste. The problem of waste in Jakarta is not due to lack of solid waste regulation. Waste policy is very good and clear, including the issuance of Regional Regulation No.3 of 2013 concerning Jakarta Waste Management, but what happens is that the Jakarta Environmental Agency has not implemented the regulations properly and consequently, especially the Article 13 of Law 18 of 2008 concerning Waste Management (this Act was effective since 2013). The point is that there should no longer be large-scale transportation of waste to landfill except hazardous and toxic materials that must be managed in the 3R integrated waste disposal site.
In addition, the Government Regulation Number 81 of 2012 concerning domestic waste management indicates communal-based waste management in economic orientation. Waste as an item that can still be used should not be treated as a disgusting item, but should be used as raw material or other useful material. Waste management should be carried out efficiently and effectively, which is as close to the source as possible, such as community surrounding, households, schools including campuses so that the amount of waste can be reduced.

Higher educational institutions have a key role in developing sustainable societies. Universities are similar to small towns, requiring huge amount of resources and generating amount of waste. These universities are offering the best location for sustainable multi-disciplinary research regarding the need for sustainable development. Adopting the framework for minimizing environmental, economic and societal concerns through actions such as conservation and recovery resources [1],[2],[3],[4],[5]. Environmental awareness can be propagated to the citizens by inculcating two aspects: environmental problems and behavioral inclinations to the problems through sustainable approaches [6].

The concept of sustainability in the environment, developing green transportation facilities, planting vegetation, conservation resources, natural resource utilization, waste reduction, recycling and reuse. These aspects can be incorporated either during the planning phase or in the construction and operational phases of the university. The concept of sustainability in the campus can be propagated to the students through the initiatives such as construction of green buildings, developing green transportation facilities, planting vegetation, resource conservation, natural resource utilization, waste reduction, recycling and reuse. These aspects can be incorporated either during the planning phase or in construction and operational phases of university [7], [8], [9], [10], [11], [12], [13], [14].

In particular, the amount of litter, and indiscriminate dumping, in the campus, suggest that there is a poor waste-handling attitude, among campus-residents, workers, and visitors. Negative attitudes towards waste, and waste-handlers, as well as careless habits, such as indiscriminate littering, observed at the campus, can be seen as social-cultural barriers to effective waste management [15]. The possible causes of littering include: (i) lack of social pressure to prevent littering; (ii) absence of realistic penalties or consistent enforcement; and (iii) lack of knowledge of the environmental effects of littering [16]. Other causes are due to the number of waste collection bins available, on a site [17]. Many studies have been conducted, in the developed world, to evaluate and apply strategies to reduce littering, by means of behavioural interventions [16], but in developing countries, including Indonesia, little has been done.

In order to reduce waste in universities, recycling efforts must be improved and organic recycling services must be provided. Additionally, students, faculty, and staff must be properly educated on proper waste management practices. This study aims at answering the questions on what factors made the environmental education have not been implemented well in higher education institutions and what should universities do to create sustainable campus.

**Literature review**

**Definition of Waste**

Waste is a general term often used to express solid waste. Waste is the remnants of material that is subjected to treatments, either because it has already been taken in its main part, or because of processing, or because there are no benefits which are viewed from an economically social point of view and are environmentally sound and can cause environmental pollution or disruption life [18]. Waste is an item that is considered to be unused and disposed of by the previous owner or user, but for some people it can still be used if managed with the
right procedure [19]. Garbage is waste material from household, commercial, industrial or other human activities. Garbage is also a by-product of unused human activities [20].

Based on the 1990 SNI Decree, waste is solid waste consisting of organic substances and inorganic substances which are considered useless anymore and must be managed so as not to endanger the environment and protect development investment [21]. In the Law of the Republic of Indonesia Number 18 of 2008, Article 1, concerning Waste Management, what is meant by waste is the rest of human daily activities and / or natural processes that are in solid form. Waste managed under this Act consists of: a. household waste; b. a kind of household waste; and c. specific waste (Article 2 of the Republic of Indonesia Law No. 18/2008).

Household waste as referred to in paragraph 1(a) comes from daily activities in the household, not including specific feces and waste. Garbage similar to household waste as referred to in paragraph 1(b) originates from commercial areas, industrial estates, special areas, social facilities, public facilities, and / or other facilities. Specific waste as referred to in paragraph 1(c) includes: a. garbage containing hazardous and toxic materials; b. waste that contains hazardous and toxic material waste; c. garbage arising from disasters; d. building debris; e. waste that can not be processed technically; and / or f. garbage that does not occur periodically (Law No. 18/2008).

Waste Management is a systematic, comprehensive and sustainable activity that includes the reduction and handling of waste. Waste Management is an activity to change the characteristics, composition, and / or amount of waste. The Intermediate Treatment Facility, hereinafter abbreviated as ITF, is an infrastructure in the form of waste treatment facilities including waste management at the middle level and final processing using renewable and environmentally friendly green technology where it can utilize the energy produced, including municipal waste-based power plants (Perda No 33/2018). In Law No. 18 of 2008 concerning Waste Management or sorting waste is a systematic, comprehensive and sustainable activity that includes the reduction and handling of waste which aims to improve public health and environmental quality and make waste as a resource. Management or sorting of household waste and a kind of household waste consists of: 1) waste reduction, and (2) waste management. Where the reduction of waste in question includes activities: 1) limitation of waste generation, 2) recycling of waste, and 3) reuse of waste.

Waste Classification

The most common grouping of waste is based on its composition, for example expressed as % by weight or % by volume of paper, wood, leather, rubber, plastic, metal, glass, cloth, food, and other waste [22]. Waste type according to [23] is distinguished by its biological properties so that it can obtain management, namely, waste that can be pierced, such as (leftovers, leaves, garden waste, agriculture, etc.), garbage in the form of dust, garbage that is harmful to health, such as garbage coming from industries that contain chemical substances or dangerous physical substances, whereas according to [24] waste is divided into 3 parts, namely:

1. Organic Waste,
   Organic Waste is an item that is considered to be unused and disposed of by the previous owner / user, but can still be used, managed and utilized with the right procedure. This garbage can easily be broken down through natural processes. Organic waste is easily decomposed waste such as meat scraps, vegetable scraps, leaves, garden waste and others.

2. Inorganic waste
   Inorganic waste is garbage produced from non-organic materials, both in the form of synthetic products and the results of the processing mining materials. This waste is non-perishable waste such as paper, plastic, metal, rubber, glass ash, used and other building materials.
materials. According to [25] this type of garbage is at the household level such as plastic bottles, glass bottles, plastic bags, and cans.

3. Hazardous and Toxic materials
   In hazardous and toxic materials, this waste occurs from organic and inorganic chemicals and heavy metals, which generally come from industrial waste which hereinafter referred to as B3. B3 waste management cannot be mixed with organic and inorganic waste. Usually there is a special body formed to manage B3 waste according to applicable regulations.
   The following is an overview of waste originating from several industries, namely: 1). Food industry waste, for example the result of waste products left over from production which can be disposed of if not given proper treatment; 2). The chemical industry and building materials, for example the lubricating oil industry in the manufacturing process requires large-scale water, resulting in the large amount of liquid waste released into the surrounding environment. This production water contains chemicals that are not good for the body which can be harmful to health; 3). Metal and electronic industrial waste, such as iron powder, dust and smoke can pollute the surrounding air if not handled properly [24].

   **Characteristics of Waste**
   According to [24] waste characteristics are divided into several aspects, namely as follows:
   1. Garbage, namely a type of waste consisting of the remainder of animal scraps or vegetables from the processing, manufacturing and supply of food which consists mainly of substances that are easily decomposed;
   2. Dry waste (rubbish), namely combustible and non-flammable waste originating from homes, trade centers, offices;
   3. Ashes, namely garbage originating from combustion from combustible substances such as homes, offices and industrial factories.
   4. Street Sweeping, namely garbage that comes from cleaning roads and sidewalks both with human power and with engine power consisting of paper, foliage and others.
   5. Animal carcass, namely a type of garbage in the form of biological waste originating from the carcass of an animal that died from nature, disease or accident.
   6. Household waste, namely mixed waste consisting of rubbish, garbage, ashes originating from the residential area.
   7. Abandoned vehicles, namely rubbish originating from carcasses, trucks, trains.
   8. Industrial waste, namely solid waste originating from industries of agricultural / agricultural products and other industries.
   9. Demolition waste, namely waste from the process of building, houses and so on, in the form of debris, pieces of wood, iron concrete, bamboo and so on [26].
   10. Special waste, namely a type of waste that requires special handling such as cans of paint, used films, radioactive substances and others [27].

   **The Application of Reduce, Reuse, Recycle (3R)**
   In article 12 (Law No. 18 of 2008) concerning Waste Management, every person is required to manage or sort waste by environmentally sound method. The method is 3R, namely: 1) Reduce (reduce waste) in the sense of not allowing excessive waste piles, 2) Reuse (reuse the remaining waste that can be used), 3) Recycle (recycle used materials to be new things).
   According to [28], recycling centres melt down cans, bottles and other items to create new materials in order to manufacture new products. The 3R concept is an expansion of
recycling, which includes reduce and reuse. The results from a study on intention to recycle by [29], also points that differentiated collection and refuse disposal could gain more coverage if it is linked with an elite or prestigious behaviour, with an emphasis on the identity of pro-environmental behaviour. 3R is also an approach intended towards the improvement and sustainability of the overall waste management system [30].

One of the concepts that was introduced into solid waste management was that of the “hierarchy of waste management” also known as the 3Rs (Reduce, Reuse, and Recycle). In general, this concept suggests that there is a preferred order of waste management that should be followed by us all. The concept points out that, unlike usual practice of blindly relying on disposal of all solid wastes in landfills, we should give priority to reduction, reuse and recycling (in that order). The concept of the 3Rs eventually led to the concept of “zero waste”. Plans to achieve “Zero Waste” now are being prepared in a number of municipalities throughout the world. These two strategies and their interrelationship in sustainable solid waste management will be discussed in the following sections [30].

[31] describes the 3R method as follows: The first principle of waste management is to reduce the amount of waste one generates by consuming less in the first place. Waste reduction can be done by: (a) reducing the material used per product without sacrificing product function, (b) increasing product life span, (c) eliminating the need for the product. The waste management is to "reuse" the materials in their original form instead of throwing them away, or those materials on to others who could use them too. Unlike the "reduce," which here refers to preventing or planning consumption, "deals" deals with already existing products, in global governance terms, with existing institutional constellations.

The concept of managing reuse is not as complicated as we think, it is enough to reuse used goods for certain purposes without having to process them. Recycling is a key to putting unusable old products through a process that transforms them into new products. Recycling according to [32] is the management of unwanted and unused items to be used as raw material for making new products. In essence, recycling management is reprocessing items that are no longer useful. The recycling process for several intermediate objects, namely: glass, plastic, metal, cloth, and paper.

**Environmental Education for Sustainable Campus**

The current education process is considered more focused on enriching knowledge or science, not on moral aspects and responsibilities. Therefore, this education process needs to be addressed by not ignoring environmental education. The dichotomous point of view that is influenced by the notion of anthropocentrism which views nature as a separate part of humans and humans is the center of the natural system has a major role in the occurrence of environmental damage. Such a perspective has given rise to exploitative, destructive and irresponsible behavior towards the preservation of natural resources and the environment. Besides that, the understanding of realism, capitalism, and pragmatism with technology and knowledge is increasingly accelerating and exacerbating environmental damage both locally and globally. Even though government regulations related to environmental education have existed since 2005, which stressed that environmental education must refer to a joint agreement between the Ministry of Environment and Ministry of National Education No. KEP 07 / MEN LH / 06/2005 and No. 05 / VI KE / 2005 dated June 3, 2005 so that environmental education is developed based on the basic concepts of the environment applied in all types and lines of science education throughout the level from elementary school to university. Education is not only formal but also non-formal through official government institutions and non-governmental organizations.
Although the introduction of more recycling bins on campus may help increase recycling rates, a study noted that any recycling or waste management system depends not only on technical factors and availability, but also the motivation of the users to participate in the process. [33] state that if these systems relied solely on installation, with no education or motivation for users, the system would likely fail.

Environmental education is strategic education that needs to be developed and applied to the younger generation. As agents of change, the younger generation needs to have an insight into the environment. By being equipped with environmental insights, the younger generation will have an awareness of environmental awareness which leads to behavior to preserve the environment. The existing environmental education cannot yet be fully realized due to the limited education and knowledge about the environment. The lack of role models and leaders who care about the environment is also an obstacle in implementing environmental education. The paradigm of some people who consider natural resources to be nothing more than economic assets and commodities then creates a behavior to simply pay attention or focus on economic values by ignoring environmental sustainability.¹

All of this is a challenge for the world of education if it requires sustainable development that covers basic needs for all and opens opportunities to realize aspirations for better quality. [34] states that:

"Environmental education is an effort to change behavior and attitudes carried out by various parties or elements of society that aim to increase knowledge, skills and public awareness about environmental values and environmental issues which can eventually move the community to play an active role in the efforts of conservation and safety of environment for the benefit of present and future generations. Formal environmental education is an educational activity in the field of environment which is held through schools, consisting of basic education, secondary education and higher education and is conducted in a structured and tiered manner with an integrated curriculum approach and a monolithic (separate) curriculum."

Environmental education and public awareness towards sustainable development are linked to virtually all areas in Agenda 21 of the United Nations. Positive and negative transitions of development around the world call for global implementation of environmental education in schools to save our planet earth from increasing degradation. Lack of environmental education in schools is significant to poor knowledge of both regional and global environmental issues by school levers in many developing countries. This is identified to have some negative impact on the students that gain access to read environmental education in higher institutions. The absence of environmental education in some countries is responsible for the poor environmental quality in homes in those countries.

Environmental problems relate to the politics, economy, science, technology, culture, etc. of the society. We should cultivate college students’ environmental awareness in multiple ways. The term “environmental education” was first used by Scottish botanist, Patrick Geddes (1854—1933) in 1920 by putting "environment" and "education" in parallel and the most important thing in environmental education is not only cognizing knowledge, but also emotional development [35].

¹ http://www.umy.ac.id/pentingnya-pendidikan-lingkungan-hidup.html
Environmental Education goals according to the Belgrade Charter devoted to EE in Tbilisi in 1977 are: (a) to foster clear awareness of and concern about economic, (b) social, political, and ecological inter-dependence in urban and rural areas; (c) to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment; (d) to create new patterns of behavior of individuals, groups, and society as a whole towards the environment.

Whereas the Environmental Education Objectives are: (a) Awareness: to help social groups and individuals acquire an awareness of and sensitivity to the total environment and its allied problems, (b) Knowledge: to help social groups and individuals gain a variety of experience in, and acquire a basic understanding of, the environment and its associate problems, (c) Attitudes: to help social groups and individuals acquire a set of values and feelings of concern for the environment, and the motivation for actively participating in environmental improvement and protection, (d) Skills: to help social groups and individuals acquire the skills for identifying and solving environmental problems, (e) Participation: to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems [36].

An effective model of Environmental Education implementation was needed to achieve all the above mentioned goals. Since 1970s different authors have worked out different models of environmental education. Thus, [37] suggested a static model according to which there are three dimensions in environmental education namely cognitive, ethical and "action" dimensions. The first – cognitive – dimension includes the level of environmental knowledge and skills, which can help to learn, understand and protect the environment. The second one – ethical – assumes the development of values. The last dimension- "action"- includes the development of special behavior patterns and positive attitudes towards the environment, as can be seen in Figure 1.

Figure 1
A Model of Environmental Education by Giolitto et al. (1997)

[38] presented two models for the process through which individual progress as they become environmentally educated. Both models include all five categories mentioned in the Tbilisi Declaration. The first model is linear. It assumes that the person passes the stages of environmental education in a strict order one by one.
However, it proves that Educational Environment is more complex and interrelated than the suggested the linear model. Thus [38] present another version of the model in which all elements are interrelated and mutually reinforcing.

**Research method**

In this study, a case study approach was employed. According to Yin, case studies can be used to explain, describe or explore events or phenomena in the everyday contexts in which they occur. Case Study research focuses on the events surrounding one case in a contemporary context or setting. Creswell describes the qualitative approach to a case study with the investigator focusing on one or more cases over time through detailed, in-depth data collection involving multiple sources of information [39]. [40] also defines case study as “researcher explores in depth a program, an event, an activity, a process, or one or more individuals” (p. 15). [41] further require a case study to have a defined time frame. The case study can be either a single case or a case bounded by time and place [42]. [41] provide several examples from different disciplines such as a medical research studying a rare illness (event) or political science.
Case studies are relevant in conduction social research because they recount the experience surrounding a particular event bound by time and place to inform others about it. Stake writes, “case studies will often be the preferred method of research because they may be epistemologically in harmony with the reader’s experience and thus to that person a natural basis for generalization” [43].

The research was conducted in 3 (three) different universities to know how the university implements the educational environment. Primary data was obtained from direct data sources by interviewing informants, which consisted of 19 participants consists of 9 students from 3 different universities to get the data of how the environmental education is implemented in their campus, 3 university top management, to explore more about the policy stipulated by the universities related to environmental education. Interview was also conducted to 3 lecturers to know their perspectives on environmental education, and 3 cleaning service staff to explore their job and to know the involvement of students in waste management. In this study, researchers also interviewed an activist of environment concerned NGO, to get an overview on how higher education institutions should implement the environmental education for sustainable campus.

Secondary data is obtained from the results of a review or review of previous research. After the research data is collected, the authors carry out reduction steps, display data, verification and conclusions [44], [45]. Reduction is done by classifying interview and observation data into themes in accordance with the research objectives. Then the data presented is in accordance with the presentation of qualitative data through narratives. After that, the data is then confirmed to see the validity before conclusions are made. Researchers also use literature studies conducted by collecting materials from various books and related references. Literature study is carried out by tracing data about the desired information through online media and through references to sources related to this topic.

Research findings and discussion
Of the 10 students interviewed, only three of them who study in the public university said that their campus has provided trash bins consisting of organic and inorganic types. The three students also said that each week students must take turns to take the inorganic waste that has been collected by cleaning services from all trash bins on every corner of the campus and recycled them to be new products. Students have to make something valuable for sale at the exhibitions or at campus workshops. This has become a routine activity and for students in the first and second semester, this is an obligation and will affect the academic assessment. When asked how the campus applied the environmental education to the students, the students said that the introduction of environmental education had been given when new students took part in a study orientation program. This is the role of higher education to provide knowledge and instill values about the need for 3R and to build sustainable campus. In addition to campus management, student organization also plays a major role in continuously monitoring and providing motivation so that students have an awareness and understanding of the importance of preserving the environment. Thus good values will be embedded and in the end the positive attitude of students will encourage them to do a good thing to realize sustainable campus. This
is in line with the opinion of [38] that there are five important components to educate someone to become environmentally conscious, namely Awareness, Understanding and Knowledge, Skills, Attitude and Values, Action.

This is different from 6 other students from 2 private universities. Three of them said that their campus had prepared a lot of segregated bins for organic and inorganic waste on every corner of the campus. However, there were still many students who had not carried out this sorting when disposing of garbage. On their campus there was also no environmental education applied. Student organizations have once held socialization about maintaining the campus cleanliness, but there was no continuation. While 3 students from other private university even said that on campus there were no bins for 2 types of garbage, namely organic and inorganic. The university only provides one trash can at every corner of the campus and all the garbage is mixed in the trash can. The student organization also never holds activities related to the environment. This indicates that the university is not aware of the importance of protecting the environment.

Of the 3 university leaders interviewed, it turned out that only one person said that his institution had implemented special policies related to environmental preservation to become a sustainable campus. This policy is not only intended for students but also for all lecturers and academic staff and non-academic staff in the university. The campus has started to prepare trash bins which are divided into 2 types of waste namely organic and inorganic since 5 years ago. Students must understand to dispose of garbage according to its type. And under the coordination of the Vice Chancellor for Student Affairs, the campus established a Campus Waste Bank. Students also have to make a routine agenda to hold waste recycling activities that are made into versatile items and can be sold in student cooperatives or at exhibition activities.

"In building sustainable campus, we should not only prioritize the provision of facilities such as trash bins and other technical matters but the most important thing is to provide them with special knowledge about 3R and motivation so that they can participate in this process, because without this, it is impossible for the system to run."

This is in line with the opinion of [33] who say that if these systems are relied solely on installation, with no education or motivation for users, the system would likely fail. While the other two university leaders said that they had not made any policy regarding environmental programs, however, they continued to urge Student Executive Board to participate in implementing the government programs related to the environment.

Interviews were also conducted with 3 lecturers from different universities. When asked how far students understood the 3R program, 2 of them said that they had not seen any environmental programs carried out routinely on campus, because there was no specific policy for this. Once in a while, students hold events related to the environment such as exhibiting recycled goods, but it is very irregular. The two lecturers also said that there were no categorical bins on the campus.

Meanwhile, one of the lecturers from public university said that the most important thing is that the campus provides environmental education to the entire academic community. This environmental education is not merely aimed at making students understand the importance of protecting the environment, but also there must be values given so that students have a sensitivity to environmental cleanliness. With this knowledge and value, students will have a positive attitude towards their environment and without being asked, they will do what should be done in order to preserve the environment so that sustainable campus will be created.
Environmental education should have been given to students since they are in the first semester. That is where the values are initially given so that they will understand and feel ashamed if they don't implement it.

Conversely, if the campus only increases the number of bins consisting of several types, without any environmental education, all will be in vain. This is in accordance with what was said by [37] that:

“There are three dimensions in environmental education namely cognitive, ethical and action dimensions. The first – cognitive – dimension includes the level of environmental knowledge and skills, which can help to learn, understand and protect the environment. The second one – ethical – assumes the development of values. The last dimension- action- includes the development of special behavior patterns and positive attitudes towards the environment. “

The lecturer stressed that universities which have implemented environmental education well can create students who have a superior level of cognitive, affective and psychomotor than other students who have never been touched by environmental education where each individual character will be built.

“In our campus, since there are policies related to the environment, the character of students is increasingly built for positive things. Students become more aware of maintaining the cleanliness of the campus and are increasingly diligent in making recycled products so that there is no more garbage littered. Students also feel comfortable to study and conduct discussion on campus parks and the result is that students' achievements are increasingly better and better. ”

From the interviews with all cleaning service staff, it was found that not all universities have provided trash cans based on categories, but there are still campuses that provide bins without categories in which all organic and inorganic waste would be mixed. Of the three cleaning service staff, only two said that on the campus where they work, there are two types of garbage bins, namely the green color for organic waste and the yellow for inorganic. However, they also stated that not all students have understood to sort the waste before disposing it. As a result all the waste was then mixed and dirty. From the interview, it is found that the two private universities do not have a waste bank so that all the waste will be directly transported by truck to the final disposal without any recycling process.

However, two students from private universities said that there were still many students who had not done the sorting when disposing of garbage into the bins, so that dry garbage such as plastic, cans, and paper were mixed with left over garbage from food. From the interview, it is also found that students in private universities do not have a routine agenda for environmental activities. It is different from students in public university who generally have already understood about this sorting so that organic waste does not mix with inorganic waste, thus the inorganic waste becomes good, dry and not dirty. The inorganic waste is collected in a campus waste bank which then becomes the responsibility of students to recycle them to be new products.

From the interview with an environmental activist, it is found that one of the factors that inhibited the realization of sustainable campus is that until now there are still many university leaders who do not understand the importance of environmental education. In general, they only connect environmental programs with things that are ceremonial in nature, such as organizing
trees planting program on campus once a year, even though in their daily lives they do nothing or there are also campuses that only meet standard of facilities, namely providing lots of categorized trash cans on every corner of the campus, but do not provide any knowledge regarding the environment.

Thus it can be ascertained that students and the entire academic community also do not understand the importance of preserving the environment. On the contrary, there is a university that provides socialization as ceremonial activity on the sustainable campus program, and after that there is no sustainability. This becomes useless because knowledge alone without mental development has no meaning. This is in accordance with what [35] said that the most important thing in environmental education is not only cognizing knowledge, but also emotional development.

Every university must seriously design an environmental education program to be implemented by all academics. Therefore, it is important for universities to design environmental education programs that must reach 3 targets, namely: (1) cognitive success, where students are able to know and understand various environmental and population problems and their impacts, which threaten the sustainability of life on earth, (2) affective success, where students can grow in themselves awareness, attitudes, and behaviors, and arouse the desire to actively participate in solving environmental problems and (3) psychomotor success, where students can have effective and applicable skills, in an effort prevention and prevention of various environmental problems. So, environmental education is not merely providing knowledge but how to change attitudes and behavior.

There are many 3R programs that can be done on campus. It is not only educating students to sort waste and throw it into the categorized trash can that matches its type, but what follows after that. Universities must be able to motivate students to be creative and understand that recycling used goods will have a high selling value as long as we can optimize creativity. Thus, the government must be more assertive in giving sanctions to universities that do not apply any programs related to environment for sustainable campus. Therefore, until now, there are still very few campuses that implement environmental programs even though there have been policies since 2005, namely KEP 07 / MEN LH / 06/2005 and KEP 05 / VI KE / 2005 dated June 3, 2005. This is due to lack of supervision and there are no coercive actions for those that do not implement this regulation.

Conclusion
From the analysis and discussion above, it can be concluded that until now, not all universities in Jakarta have implemented the environmental education programs, even there are still university leaders who do not understand the importance of building sustainable campus. Environmental activities are only carried out ceremonially, but have not become routine university programs. Therefore, environmental education programs should be a priority program on campus and not just limited to discourse. For future research, the researchers recommend to dig deeper the issues on the model of the implementation of sustainable campus program with different approaches to be adopted.

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