



# Analysis of the Needs of Elementary School Learning Environment Model Based on Green School

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**Abstract.** A healthy and green learning environment in schools will greatly support the achievement of a smart, healthy, and quality generation. Therefore, it is necessary to make an effort to create a school that has a good learning environment. It's just that a healthy and green learning environment is not only physical but comprehensive in every system in the school. So it is necessary to develop a comprehensive green school-based learning environment model to support the achievement of a quality generation. This study aims to analyze the need for a green school-based learning environment model. Needs analysis includes policies, curriculum, activities, and infrastructure. According to the results of the needs analysis, the authors recommend the development of an integrated green school-based learning environment model in integrated thematic learning.

**Keywords:** Green school · learning environment · Elementary school

## 1 Introduction

Environment is everything around us including living and non-living things (air, water and energy) with which we interact in a complex network of relationships that connect us to one another. Despite many scientific and technological advances, we depend heavily on the earth for clean air and water, food, shelter, energy, fertile soil, and all the other components of the planet's life support systems known as ecosystem services [1].

However, humans have made changes to the earth with enormous negative impacts on the environment such as global warming and climate change. Based on the total ecological footprint, globally we are experiencing a very large ecological deficit. An ecological deficit means that people live unsustainably by depleting natural capital and the ecosystem services provided by that capital. According to Miller [2], the human ecological footprint has an impact on about 83% of the total land surface of the earth.

Damage to the earth needs to be repaired and the existing natural capital needs to be preserved so that it can continue to be sustainable. Sustainability is the capacity of the earth's natural systems and human cultural systems to survive, develop, and adapt to changing environmental conditions into the long future [2]. To be sustainable, it requires the participation of all human beings. Sustainable active participation can only be done if

the human being has environmental knowledge and care. Environmental education both at school, in the community, and at home has an important role to form a generation that cares about the environment [3]. Environmental education must be given from an early age considering that nature has been a part of everyone's life since they were born in the world.

So important is the role of humans in increasing awareness and concern for protecting the environment from an early age. According to Jumirah et al., it can be started by promoting awareness of green chemistry in the school environment [4]. School is a place where humans learn knowledge formally and teach humans to think scientifically. By planting awareness of the environment through education, it is hoped that humans will be aware of the environment and be able to shape the character of loving the environment.

The school environment is a learning environment for students which is part of the facilities and infrastructure that are often used as a source of learning in the learning process. A conducive learning environment is closely related to the quality of student learning, for that learning environment needs to be created and maintained so that the growth and development of students is effective and efficient so that goals are achieved optimally [5]. For this reason, the school must be a good and ideal place that is created as comfortable and comfortable as possible by the school community itself.

A green school is a school that has a positive policy in environmental education, meaning that in all aspects of its activities it considers environmental aspects. Green schools are oriented towards efforts to develop awareness of school community actions towards environmental problems in schools as part of overall environmental problems globally. This concept invites school members to think globally and act locally [6]. Green schools aim to create schools that are cleaner and environmentally sound where biodiversity is utilized and protected in a sustainable manner [7]. The green school concept is in line with the Adiwiyata program, a program initiated by the Ministry of the Environment in order to encourage the creation of knowledge and awareness of school residents in environmental conservation efforts. Adiwiyata has an understanding as a good and ideal place where we can gain all knowledge and various ethics that can be the basis of human beings towards the creation of a prosperous life and to the ideals of sustainable development [8].

Laboratory Elementary School (SD Lab.) UM Blitar City is one of the schools in Blitar City which has a program to develop sustainable schools. This SD has a vision to create a generation of people who are faithful, pious, polite and have high competitiveness in the global era and excel in achievement. One of the missions of SD Lab. UM related to environmental care is to facilitate all school members to have a culture of environmental care in order to create a clean and healthy environment through the 3R (reduce, reuse, and recycle) principles (sdlabumblitar, January 25, 2022). In realizing a sustainable school development program, information about the curriculum, management, and school infrastructure is needed [9]. This information is part of the planning which will then be used in the next stage, namely implementation and monitoring and evaluation [10]. Therefore, this study aims to collect information for the development of a green school-based learning environment model at the UM Laboratory Elementary School in Blitar City.

Before developing a learning environment model, a more in-depth analysis of the existing learning environment is needed. This is done in order to obtain alternative solutions and recommendations for the development of the required learning environment model. Therefore, this study aims to collect information about 1) school policies related to environmental care and culture in SD Laboratorium UM City of Blitar 2) development of environmental education learning curriculum at SD Laboratorium UM City of Blitar 3) development of participatory-based environmental activities in SD Laboratorium UM of Blitar City, 4) development and or management of environmentally friendly school support facilities in SD Laboratorium UM City of Blitar 5) implementation of environmentally friendly and cultured schools from the point of view of students of SD Laboratory of UM City of Blitar and 6) potential that exists in SD Laboratorium UM Blitar City to be able to develop a green school-based learning environment model. It is hoped that this information can be used in the development of sustainable schools in SD Lab UM in Blitar City in particular and elementary schools in Indonesia in general.

## 2 Methods

This research is part of a development research that refers to the ADDIE development model [11]. In this study, the development stage described is the result of the needs assessment stage through an empirical study. Data collection techniques in the form of open interviews, questionnaires, and environmental observations. The sample of this study included 87 students in grades 1–6, 1 principal, 14 teachers, and 1 administrative staff of SD Laboratorium UM Blitar City. The data collected were analyzed using descriptive quantitative and qualitative descriptive analysis techniques.

Interviews with school principals and questionnaires for teachers, principals, and administrative staff aimed to reveal indicators: 1) school policies related to environmental care and culture, 2) development of environmental education learning curriculum, 3) development of participatory-based environmental activities, and 4) development and or management of environmentally friendly school support facilities (Joint Decree of the Minister of Environment and Ministry of National Education, 2010). While the questionnaire given to students aims to determine the implementation of the school's implementation of environmental care and culture with indicators including: 1) the condition of the cleanliness of the school environment, 2) the habits of school residents regarding environmental care, 3) school policies related to environmental problems, and 4) facilities. School supporters related to environmental education. Meanwhile, environmental observations were carried out to observe the potential that could be developed as the development of a green school-based learning environment model for integrated learning oriented towards 21st century character and competence.

## 3 Result and Discussion

School policies related to environmental care and culture are one of the indicators of the Green school program (Joint Decree of the Minister of Environment and Ministry of National Education, 2010). The percentage of implementation is the highest among other indicators, namely 40%. This policy covers all the rules applied in schools related

to efforts to create school citizens who have an attitude of caring for the environment and a culture of loving the environment. Needs analysis detects broadly whose scope includes general policies, policies integrated into the curriculum, school routine agendas, funding, to policy evaluation and monitoring activities.

Based on the results of interviews with the principal of SD Lab UM, Blitar City, it shows that there is already a reforestation program planning as a form of efforts to make schools that care and are environmentally cultured. This plan was born from the principal's concern for the school's seemingly arid environment. In addition, there is also a plan to plant family medicinal plants (toga). But there is no special team that can maximize the implementation of the plan. Learn from research results Wardani et al. [12] that one of the keys to success at MIN 1 Ponorogo is the procurement of a special team to carry out various green school programs. While related to funding, 1–5% of funding has been stated for plant management and care.

The results of interviews with school principals are not much different from the results of filling out questionnaires by teachers. 100% of teachers stated that there are varied policies in developing caring and environmentally cultured schools. School policies are also summarized in curriculum development and routine school activities such as student days and study tours. However, this kind of policy is still focused on students only where the results of filling out a questionnaire show that 81% of teachers agree that the policy has not been implemented for school residents other than students. In fact, according to Naim [13] teachers and other school members are able to empower and even change the lives of their students. As for special funding, 63% of teachers stated that there is no specific funding related to the development of schools that care and are environmentally cultured. This also needs to be considered because it learns from the results of Landriany's research [14] that one of the things that becomes an obstacle to the implementation of green schools is the problem of unplanned funding. Meanwhile, from the aspect of policy monitoring and evaluation, 100% of teachers agree that this activity has been going well even though it is still incidental.

Based on the results above, it can be concluded that schools have sought various policies to realize a caring and environmentally cultured school but are still focused on students only, so there is still a need for policies for other school residents besides students. In addition, there is no special team and specific funding related to the development of schools that care and are environmentally cultured. However, the monitoring and evaluation of policies has been carried out well.

The development of environmental education learning curriculum is included in one of the indicators of the Green school program whose percentage reaches 30% (Joint Decree of the Minister of Environment and the Ministry of National Education, 2010). This indicator is closely related to curricular activities that are widely applied during the learning process. The actors directly involved are students and teachers, where the principal is the person in charge and supervising its implementation. This indicator is further elaborated so that it includes its development efforts, availability of materials, learning resources, learning activities, to monitoring and evaluation related to environmental education.

Based on the results of interviews with school principals, it shows that the development of environmental education learning in general has been implemented. There

is even an agenda that involves the guardians of students for the provision of learning activities and practices regarding environmental education. In the teaching and learning process, environmental education has been integrated but has not been maximized. Meanwhile, extracurricular activities have also been integrated, although limited to scout extracurricular activities. Surakusumah [15] argues that in fact the integration of environmental education into the curriculum is flexible and does not have to be comprehensive. Setyobudi & Saliman [16] also added that an environment-based curriculum can be implemented by conveying environmental material through existing subjects and being linked in everyday life.

Filling out a questionnaire by teachers shows that 81% of teachers have not felt any efforts to develop a learning curriculum for environmental education in general. Whereas the development of the curriculum for environmental education programs at the basic education level is the main component of implementing green school in elementary schools [17]. The majority of teachers tend to be fixated on the curriculum that is already available, such as the K13 material that has been determined by the central government. But there are teachers who take the initiative to add local and global issues as well as socialization related to the environment to be applied to students. This step is in accordance with the integration of environmental education into subject matter according to Manobe, et al., [18] by developing related local and global problems. In addition, the development of learning methods, the provision of a school environment, as well as evaluation and monitoring related to environmental education have been carried out well with a percentage of 94% of teachers agreeing to it.

Based on the results above, it shows that the efforts to develop environmental education learning curriculum in general have been implemented, although not optimally. This is because the implementation of the curriculum is still limited to the curriculum that is already available, such as the K13 material that has been determined by the central government. There is still a need for efforts to develop curriculum from the school itself. But in the learning process, environmental education has been pursued by educators as well as through partnering with parties outside the school.

The development of participatory-based environmental activities is one indicator of the implementation of Green school with the percentage of application being 20% (Joint Decree of the Minister of Environment and the Ministry of National Education, 2010). Although with the lowest percentage among other indicators, this indicator is able to reach the involvement of parties inside and outside the school. This participatory understanding itself is the participation of students voluntarily or the involvement of other parties in activities related to the environment [19]. This indicator is translated into the availability of intracurricular and extracurricular activities, involvement of parties outside the school, partnership activities, as well as monitoring and evaluation that supports the habit of living with an environmental culture.

Based on the results of interviews with school principals, it shows that there are already participatory-based education development activities. Students are often invited to field studies according to the material being studied. However, the school has not yet launched environmental protection and management activities for the school community as a whole. And the school has never participated in environmental actions carried out by parties outside the school. Whereas according to Setyawan [20] the active role of

schools in participating in environmental activities held by outsiders is useful as school promotion tools regarding the system, management and existing characteristics so that positive stigmatization of the community or outsiders is formed on the image of schools that implement the green school program.

The results of filling out questionnaires by teachers showed that 94% of teachers stated that there were activities in the form of extracurricular or curricular activities that supported environmentally cultured behavior, where extracurricular activities included scouts and UKS. Furthermore, similar to the statement of the principal, 81% of teachers stated that there were no environmental activities initiated by the school for residents inside or outside the school. Likewise, the participation of school residents with activities initiated by outsiders, as many as 90% of teachers stated that they did not exist. Likewise for partnership activities, 81% of teachers stated that there were none. This needs further attention, considering that partnerships with various stakeholders related to the environment will greatly support the success of the green school program [20]. However, monitoring and evaluation activities related to schools that care and are environmentally cultured have been carried out even though they are still incidental.

Based on the results above, it can be concluded that there are already participatory-based educational development activities, especially for students. However, for activities that involve all school residents, parties outside the school, as well as partnership activities have not been carried out optimally. Meanwhile, monitoring and evaluation have been carried out even though they are incidental.

The development and or management of environmentally friendly school supporting facilities is one indicator of the implementation of Green school with a percentage of 30% (Joint Decree of the Minister of Environment and the Ministry of National Education, 2010). This development focuses on optimizing school support facilities to realize a Green school-based model. This indicator covers the utilization, management, efficiency efforts, as well as monitoring and evaluation of school supporting facilities and infrastructure.

Based on the results of interviews with school principals, it shows that the school has developed the function of supporting facilities to realize a school that cares for the environment although it still needs to be improved. There are various facilities that support clean and healthy living behavior, one of which is a hand washing area around the study room. This facility is important considering that hand washing behavior with soap is one of the main indicators of clean and healthy living behavior [21]. Meanwhile, efforts to save natural resources in the school environment are realized in the form of paper savings by optimizing the use of digital products.

Regarding partnerships, the principal explained that the school had tried to partner with several parties. One of them is partnering with the fisheries department to realize a healthy canteen program. With this effort, it is hoped that students' habits of consuming healthy food will be fostered. Considering that there are still many problems such as the results of a study by the Food and Drug Supervisory Agency (2014) which involved hundreds of elementary schools in Indonesia, 60% of school children's indiscriminate snacking behavior did not meet quality safety standards [22].

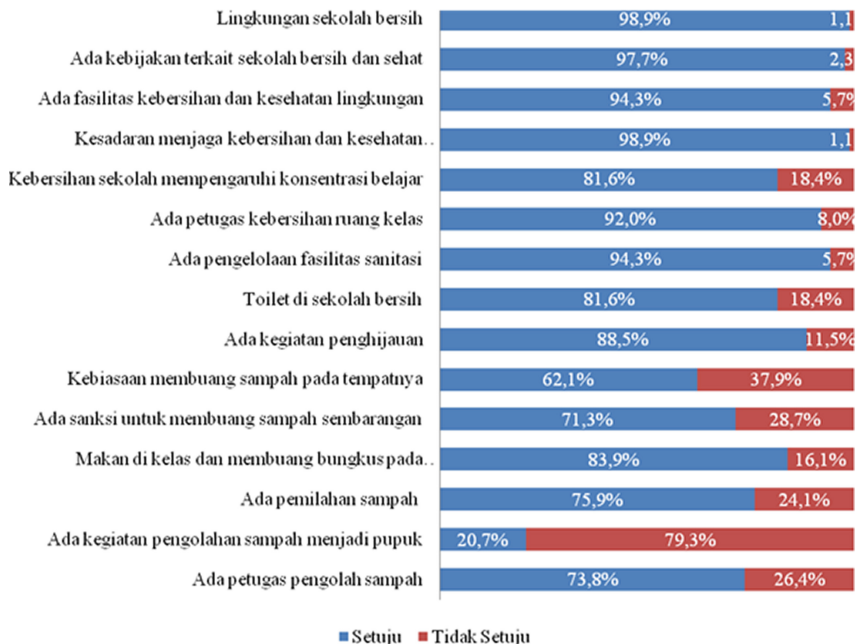
The results of filling out questionnaires by teachers showed that 100% of teachers stated that there was use of school support facilities related to environmental learning.

Regarding the management of facilities, 64% of teachers feel that this has not been implemented. However, facilities such as sanitation, healthy canteens, trash cans are available and meet the requirements. Meanwhile, with regard to the efficiency of the use of facilities as well as monitoring and evaluation, it has been carried out well.

Based on the results above, it can be concluded that the utilization and saving of school support facilities related to environmental learning has been carried out well. Meanwhile, the development and management of supporting facilities still needs improvement. This improvement must be carried out in line with Nurulloh's statement [23] that school residents must strive to develop and improve the management and quality of facilities related to the environment both inside and outside the school. Regarding monitoring and evaluation, it has been carried out well even though it is incidental.

The implementation of various policies regarding the realization of a caring and environmentally cultured school can be seen from various perspectives. Because this implementation focuses a lot on students, assessment from the student's point of view is the right choice. The assessment of the implementation of this caring and environmentally cultured school has the same indicators as the instrument for other school members but is simplified to suit the level of student understanding. The following are the results of filling out a needs analysis questionnaire by students (Fig. 1).

The results of filling out questionnaires by students indicate that most students think that the school environment is clean and there are school policies and facilities that support this. Even the awareness of the importance of maintaining the cleanliness and health of the school environment in students has reached 98.9%. In addition, 81.6% of



**Fig. 1.** Results of the Student Needs Questionnaire

students agree that cleanliness affects their learning concentration. This is in line with the results of Anugerah's research [24] that cleanliness is very influential on student learning concentration. Thus, the condition of cleanliness in SD Lab UM Blitar City is appropriate as a student learning environment.

Regarding reforestation, as many as 88.5% of students agreed that there had been reforestation activities in their schools. Furthermore, the cultivation of good habits related to disposing and managing waste has also appeared to be good for students although there are still a few problems regarding waste. The results of the questionnaire indicate that there is no waste processing activity into fertilizer. Whereas the utilization and processing of organic waste into compost is one of the right solutions to reduce waste accumulation [25]. In addition, 37.9% of students stated that there were still school residents who littered. Whereas according to Wanabuliandari, & Rahardjo [26] throwing garbage in its place is one of the main indicators of clean and healthy living behavior.

Based on the results of filling out questionnaires by students, it can be concluded that the cleanliness and management of cleanliness in schools is good. The character who cares about the environment is also good. Regarding environmental related programs such as waste management and reforestation, it is still necessary to procure waste processing activities into fertilizer and increase awareness of disposing of waste in its place.

SD Lab UM Blitar City has vacant land that has not been cemented. This land can be used for planting cambium plant species. In addition to the potential to create a shady school environment, this plant species can also keep the environment of SD Lab UM Blitar City still has land as a water catchment area. This effort can trigger the main character values of responsibility and concern for further development. This is in line with the results of community service by Mujayanti, et al. [27] that tree planting activities can maintain water catchment areas and raise awareness.

SD Lab UM also has an empty cemented area. This means that there are no specific facilities or functions that require the vacancy of the land. This land can be used to put productive plants that can be planted in pots or polybags. This activity can potentially build students' critical and productive thinking skills. Proper and attractive packaging of activities can also foster the creative-innovative spirit (4C + 1P ability) of students and other school members. In accordance with Suharti's statement (2021) that optimizing vacant land for planting plants can make schools a place of creativity.

Another potential that can be seen from the physical environment of SD Lab UM Blitar City is the existence of healthy living habituation facilities. Some of these facilities include hand washing areas, adequate ventilation in each study room, and segregated trash cans. This means that the cultivation of healthy living habits has been built in this elementary school, although it still needs improvement. This further supports that knowledge and attitudes related to caring and being cultured for the residents of SD Lab UM Blitar City already exist so that only more intensive implementation and supervision is needed.

Based on the explanation above, it can be concluded that there are several physical potentials possessed by SD Lab UM Blitar City. This potential includes 1) the availability of vacant land that has not been cemented, 2) the availability of vacant cemented land, and 3) the availability of healthy living habituation facilities. This potential indicates



that the physical environment of SD Lab UM Blitar City has the capacity to apply a Green school-based learning environment model.

## 4 Conclusion

The results of the analysis show that the things that are needed include: 1) It is necessary to pursue policies for school members other than students and the formation of a special team as well as the design of specific funding related to the development of schools that care and are environmentally cultured; 2) Development of environmental education learning curriculum at SD Laboratorium UM Blitar City still needs efforts to develop curriculum from the school itself; 3) The development of participatory-based environmental activities involving all school members, parties outside the school, as well as partnership activities have not been carried out optimally; 4) Development and or management of environmentally friendly school support facilities in SD Laboratorium UM Blitar City still needs improvement; 5) Regarding the implementation of a school that cares about and is environmentally cultured from the student's point of view, it is necessary to procure waste processing activities into fertilizer and increase awareness of disposing of waste in its place; and 6) The potential that exists in SD Laboratorium UM City of Blitar to be able to develop a green school-based learning environment model includes the availability of vacant lands that have not been cemented, the availability of vacant cemented land, and the availability of healthy living habituation facilities.

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