

APPLICATION OF PROJECT BASED LEARNING MODELS TO IMPROVE ECOLITERACY OF ELEMENTARY SCHOOL STUDENTS THROUGH URBAN FARMING ACTIVITIES

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Abstract

This research is motivated by the concern of the author towards students of Public Elementary School 038 Kiaracondong Bandung who lack awareness in doing greening resulting in an arid and poorly maintained school environment. The purpose of this research is to improve the ecoliteracy of students so that they are more sensitive to the importance of the green environment so that they want to do a greening movement even though they have limited space. This research was conducted with the Classroom Action Research (PTK) method using the design of Kemmis and Taggart (2001) on grade IV students of SDN 038 Kiaracondong Bandung. The results of research conducted in 3 cycles with 12 meetings showed an increase in ecoliteracy in students towards greening the space indicated by behavior, one of which was; 1) students grow awareness to reforest on school land despite limited space; 2) students plant ornamental plants and vegetables with pots that come from processed waste; 3) students are responsible for caring for the plants well; 4) students take care of flowers and give fertilizer regularly; 5) students grow creativity in processing plastic waste into flower pots; 6) students are able to distinguish between types of waste. Through urban farming activities students experience a process of improving ecoliteracy which is not only applied in the school environment but also in the home environment.

Keywords: Project Based Learning, Ecoliteracy, Urban Farming

Abstrak

Penelitian ini dilatarbelakangi oleh rasa khawatir penulis terhadap peserta didik Sekolah Dasar Negeri 038 Kiaracondong Bandung yang kurang kesadaran dalam melakukan penghijauan sehingga mengakibatkan lingkungan sekolah gersang dan kurang terawat. Tujuan penelitian ini adalah untuk meningkatkan *ecoliteracy* peserta didik agar lebih peka terhadap pentingnya lingkungan hijau sehingga mau melakukan gerakan penghijauan meski dalam keterbatasan ruang. Penelitian ini dilakukan dengan metode Penelitian Tindakan Kelas (PTK) menggunakan desain Kemmis dan Taggart (2001) pada peserta didik kelas IV SDN 038 Kiaracondong Bandung. Hasil penelitian yang dilakukan dalam 3 siklus dengan 12 pertemuan ini menunjukkan adanya peningkatan *ecoliteracy* pada peserta didik terhadap penghijauan ruang yang ditunjukkan dengan perilaku yang salah satunya adalah; 1) peserta didik tumbuh kesadaran untuk melakukan penghijauan di lahan sekolah meskipun terbatas ruang; 2) peserta didik menanam tumbuhan hias dan sayuran dengan pot yang berasal dari sampah yang diolah; 3) peserta didik bertanggung jawab merawat tumbuhan dengan baik; 4) peserta didik merawat bunga dan memberi pupuk dengan teratur; 5) peserta didik tumbuh kreativitas dalam mengolah sampah plastik menjadi pot bunga; 6) peserta didik mampu membedakan jenis sampah. Melalui kegiatan *urban farming* peserta didik mengalami proses peningkatan *ecoliteracy* yang tidak hanya diaplikasikan dalam lingkungan sekolah saja tetapi juga dilingkungan rumah.

Kata Kunci: Project Based Learning, Ecoliteracy, Urban Farming

INTRODUCTION

Environment and living things is an important entity that influences one another. Humans and the environment have a reciprocal system in life and affect the quality of human life. As social beings, humans have an obligation to protect and preserve the environment, which can be done in maintaining the environment, one of which is to do greening in the surrounding environment so that more oxygen levels and do not look barren.

In the period of time the population growth has developed and has resulted in the conversion of the function of green land into residential land. This has an impact on deteriorating environmental quality such as, clean air decreases due to lack of air absorption by plants, the environment tends to be barren and barren because there is no green land. Seeing the problem, it is necessary to take action to increase the sense of environmental concern for elementary school students.

Learning does not only focus on environmental knowledge, but fosters a sense of empathy to care for environmental sustainability which ultimately results in the application of an action. Understanding the influence of the environment on the learning situation needs to be understood in children, because comfort and cleanliness in a room will provide a conducive atmosphere in the learning process as well as vice versa if the environment is dirty, poor and a lot of pollution will the learning atmosphere becomes less comfortable.

Pllan (Stone, M and Barlow, Z , 2005) give a statement concerning the issue of education with the environment. *“The ecological crisis is in part a crisis of education. This highly original valume makes a critical contribution of rethinking how we teach our children about their place in nature.”*

From this statement it can be understood that environmental problems are part of the problem of education. Because the more damage that occurs will lead to involving education in giving awareness to each individual of the importance of protecting the environment. besides that education also provides a role in shaping social care so that individuals are sensitive to the surrounding environment.

Providing students with an understanding of environmental concerns can be done with ecoliteracy-based learning. Considering that there is a lot of environmental damage that has occurred so that natural disasters and factors that are very influential are human activities that cannot preserve nature. Goleman (2010: 37) who explains ecological intelligence that is our ability to adapt to the ecological niche where we are. Ecological means understanding of

organisms and their ecosystems, while intelligence is the capacity to learn from experience and effectively deal with the environment. Thus ecoliteracy-based learning will provide prior knowledge of the environment, providing an understanding of the existence of self-awareness about behavior towards the environment, to the problem solving that can be applied in everyday life in an effort to preserve.

Other problems that occur in urban areas are the limitations of green land that make the environment arid and tend to occur air pollution. Narrow urban land makes it difficult for people to plant crops. Creative educators will be able to develop their creativity in facilitating the potential of students in developing their potential, especially in solving environmental problems that are being faced.

Greening activities carried out by the school students can be done in a simple way such as making flower pots made from used plastic bottles that are decorated according to their creativity and then used to plant ornamental plants and vegetables. These plants can be placed on walls or in places that allow plants to be stored. The planting activity can be called the Urban Farming, Urban farming is an agricultural activity in or around urban areas that involves skills, expertise and cultivation of food processing (Enciety, 2011).

The main thing that led to the emergence of urban farming was due to environmental problems, city heat reduction, energy efficiency, public health, air quality, climate change and habitat loss (Mazeereuw, 2005).

Urban farming activities can be carried out in schools with the aim of teaching students how to use narrow land in urban areas but can be used for farming activities that can provide various benefits both for the environment and for food. Besides that the implementation of learning in urban farming activities can hone the creativity of students in making a project. Because this study makes a work, the model applied in this learning process is the Project Based Learning model. Bern and Ericksoon (2001, p. 7) which confirms that "Project Based Learning is an approach that focuses on the principle of the main concept of a discipline, involving students in solving problems and other meaningful tasks, encouraging students to work independently to build learning, and ultimately produce real work. "

Based on the above background, in the research that I developed, it was more focused on "Application of Project Based Learning Model to Improve Ecoliteracy of Primary School Students Through Urban Farming .

METHODS

This study uses the Classroom Action Research methodology according to Rahayu (2018) is an effort to improve the implementation of the practice of education by a group of teachers by taking actions in learning, based on reflection on these actions. Classroom Action Research aims to provide a direct understanding of researchers in carrying out actions related to the assignment of research conducted so that the data or information obtained is more accurate in accordance with ongoing teaching and learning activities.

In this Classroom Action research researchers collaborate with peers in designing activities, implementing activities, reflection activities and other actions. The researcher at the same time acts as a class teacher who gives immediate action to students. The research process was carried out for 3 cycles which included, activities, planning that were carried out carefully including preparing instruments, implementing learning by conducting field observations, giving evaluations and final reflection to correct mistakes that occur during the implementation process.

RESULTS AND DISCUSSION

Results

The results of the study show that there is an increase in environmental knowledge in students which is shown from the results of evaluation values in each cycle that is always increasing. In the first cycle a score of 77% was obtained, cycle II was 86%, and cycle III was 95%. The following is a graph of student knowledge

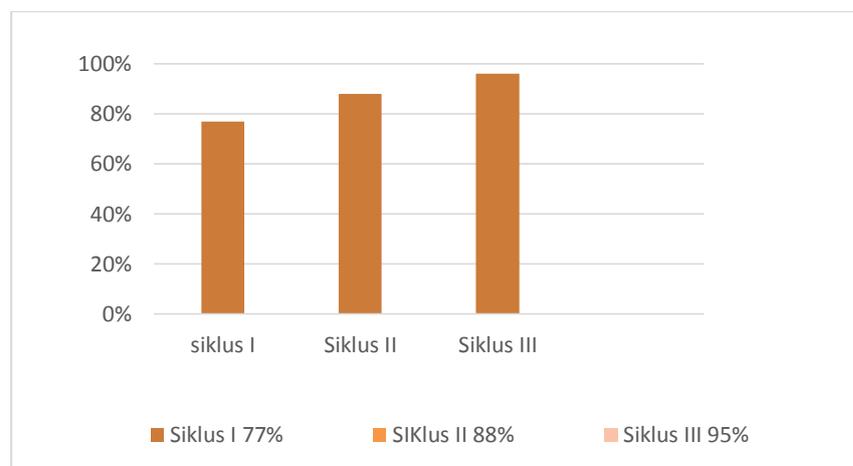


Figure 1. Increasing Knowledge Aspects

Aspect percentage results Attitudes show an increase in students' sensitivity to the environment, this is evident from the percentage of each cycle that increases. Cycle I obtained a score of 78%, Cycle II obtained a score of 88% and cycle III obtained a score of 96%.

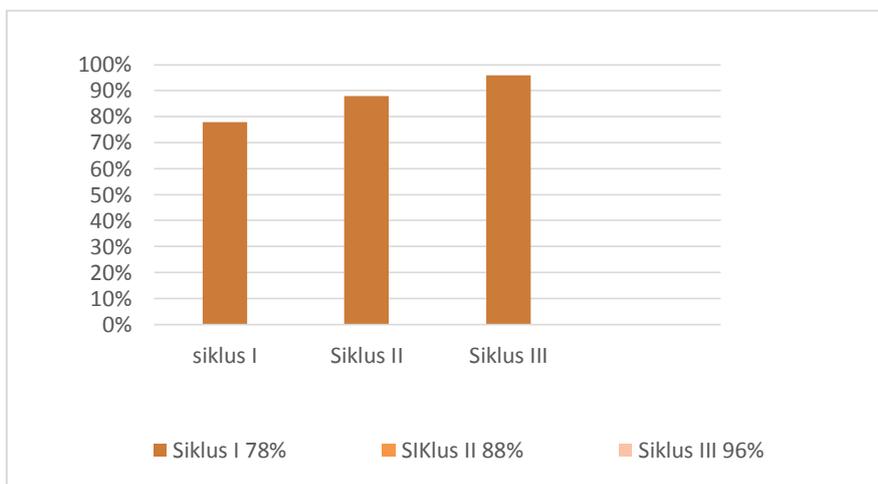


Figure 2. Increased Ecoliteracy Attitude

The results of the final aspect of the research are application aspects, in this aspect the research is said to be successful because in three cycles the score exceeds the maximum target of 85%. In the first cycle, the results obtained 75%, the second cycle obtained a score of 84% and in the third cycle the score reached 95%. The following is a chart of obtaining application aspect scores:

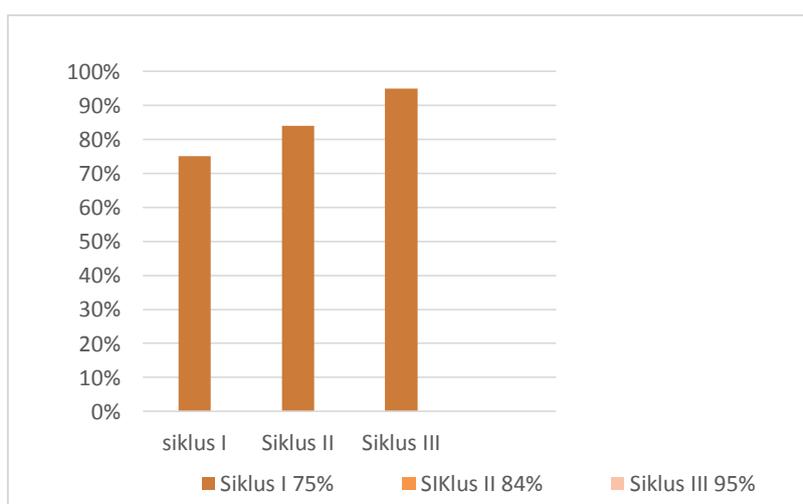


Figure 3. Increasing Aspects of Ecoliteracy Applications in Students

Discussion

A diagram to improve aspects of knowledge shows an increase in students' knowledge of ecoliteracy. Learners have been able to show significant improvement, this is indicated by an understanding of ecoliteracy knowledge about what urban farming is, how to overcome narrow rung but can still grow, what type of soil, fertilizers and plants can be used in urban farming activities.

The results obtained in the attitude aspect research are the attitude of environmental concern. Students have begun to grow awareness in preserving the environment, analyzing problems and finding solutions to problem solving. One form of awareness that is shown is the behavior of students who want to clean the classroom and school environment on a regular basis, in addition to the problem of the lack of a narrated green space by doing urban farming activities. Students plant vegetables in the school environment by using pots made from plastic waste which are processed into flower pots. After reforesting the students take care of the plants they plant by watering every morning on a regular basis, giving fertilizer, and reminding each other of the tasks of caring for the plants.

Application aspect research results show that by conducting urban farming activities in an ecoliteracy-based learning process can improve the application aspect in students which in the learning process students are not only concerned about the material of knowledge but will grow environmental sensitivity that is applied in the form of action. Actions taken by conducting urban farming activities and making students more responsible for managing the green environment despite limited land. Awareness of students grows and provides understanding under creativity can be developed to overcome existing environmental problems.

CONCLUSION

From the results of the research that has been done it can be concluded that the Class Action Research by applying the Project Based Learning model in urban farming activities is able to improve the ecoliteracy of elementary school students. this can be seen from the increase in scores in each cycle both in the aspects of knowledge, awareness and application shown by students' behavior towards the environment.

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