



Implementing the Hands-on Activity (HoA) Learning Model Based on Natural Surroundings (JAS) in an Effort to Improve Ecoliteracy and Learning Motivation of the Students of SD Negeri Ombul 3 Bangkalan

Asy'ari^(✉), Yuni Gayatri, and Sela Rizqiyah

Biology Education Department, Universitas Muhammadiyah Surabaya, Surabaya, Indonesia
asyari@fkip.um-surabaya.ac.id

Abstract. This research was conducted based on empirical findings that showed various symptoms of boredom and lack of exploration of the ability to re-coliterate and lack of motivation of the students of SD Negeri Ombul 3 Bangkalan. These problems require the need for an approach or learning model to handle them. The purpose of this study was to determine the effect of implementing the Hands on Activity (HoA) learning model based on Natural Surroundings (JAS) in an effort to improve Ecoliteracy and Learning Motivation of the students of SD Negeri Ombul 3 Bangkalan. The research method used is a Quantitative Research Approach, namely the Quasi-Experimental Method using a research design used Intract-Group Comparison, where there is one class that is used for research, but is divided into two, namely half the experimental group (which is treated) and half for the experimental group. control (which was not treated). Data collection techniques in this study through observation, questionnaires and photo documentation. The results of the processing of student responses to the Hands on Activity (HoA) learning model based on Natural Surroundings (JAS) obtained 62 students responding in a good category to the implementation of the Hands on Activity (HoA) learning model based on Natural Surroundings (JAS). The increase in students' ecoliteracy ability and motivation was seen by calculating the attitude questionnaire test of control class students towards ecoliteracy and motivation, it was found that 18% was included in the low category, while the increase in students' ecoliteracy ability and motivation was seen by calculating the experimental class student attitude questionnaire test towards ecoliteracy and learning motivation was obtained 82% is included in the high category. Thus, it means that the Hands on Activity (HoA) learning model based on Natural Surrounding (JAS) has a significant influence on the ecoliteracy ability and learning motivation of Ombul 3 Elementary School students Bangkalan.

Keywords: Hands on Activity · Exploring the Surrounding Nature · Ecoliteracy · Learning Motivation · Ombul 3 Elementary School

1 Introduction

Education is a learning process in which learners receive and understand knowledge as part of it and then manage it in such a way for the common good and progress [1, 2]. The education in question is not in the form of subject matter that is heard when spoken, forgotten when the teacher finishes teaching and only remembered when the replay or exam comes. But an education that requires a process that is not only good but also fun and interesting for both teachers and students [3, 4]. According to [5] that education as a tool that aims for renewal and progress that has an important role in developing science and technology.

Curriculum as a device in the plan and arrangement in accordance with the objectives, content, teaching materials and the way used as guidelines in 2 organize learning activities to achieve educational goals [6, 7]. The implementation of the current revised 2013 Curriculum provides [8, 9]. Contributions to realize the process of developing the quality of potential learners. The demands of the revised 2013 curriculum affirm the importance of 21st century skills that concern aspects of critical thinking, collaboration and communication that lead to improved literacy [10].

According to [11] is a strategy used by teachers to increase learning motivation, learning attitudes among students, being able to think critically, have social skills, and the achievement of more learning outcomes. The learning model contains teacher-choice strategies for specific purposes in the classroom. Meanwhile, strategy, according to [12] is a learning activity that must be done by teachers and students so that learning goals are achieved effectively and efficiently. Meanwhile, Dick and Carey stated learning strategies as a material device and learning procedures that are used together to bring learning outcomes to students.

One learning strategy can use several methods. The learning model is also based on various principles and theories of knowledge, including the principles of learning, psychological theory, sociology, system analysis, or other theories that help [13, 14]. In this regard, the learning model is a set of learning materials and procedures on the basis of a theoretical foundation for a particular learning purpose. One learning model is the Hands on Activity (HoA) learning model [15, 16].

According to [17] states that ecoliteration means a state in which people are already enlightened about the importance of the environment or describe awareness about the importance of the environment. Then [18]. stated that ecoliteration is building awareness of the disruption of ecosystems into the community's mind. Make it the center of attention and study for institutions that are authorized to increase its attention [19, 20].

Learning motivation is the desire or drive to learn [21], while according to [19] learning motivation is a driver that will describe the attitudes and behaviors of learners in learning. From some of the above opinions it can be concluded that motivation is an encouragement that can make a person to be able to achieve a goal in learning [1, 22].

2 Methodology

The research was conducted at SD Negeri Ombul 3 Bangkalan. The population in the study was students of Ombul State Elementary School 3 Bangkalan grades 1–6, while

the sample used in this study was 5th graders, only one class as an experimental group. Sampling techniques are done in a cluster random sampling, because the school does not allow random taking of each student and created a new group so that sampling is randomly taken in an existing class group.

The research method used is quantitative research approach, the quasi-experimental method using the research design used by Intract-Group Comparison, where there is one class used for research, but divided into two, namely half the group for experiment (which is treated) and half for the control group (which is not treated). Data collection techniques in this study through observation, questionnaire and photo documentation.

3 Results and Discussion

3.1 Analysis of Student Response Questionnaire Data

The results of the processing of student response questionnaires to the Hands on Activity (HoA) learning model based on Environmental Exploration (JAS) were obtained by 62 students to respond in the category of both the implementation of the Hands on Activity (HoA) learning model based on Environmental Exploration (JAS). Improvement of student ecoliteration and motivation skills is seen by calculating the test of student attitude questionnaire control towards ecoliteration and motivation obtained 18% included in the low category, while improvement in the ability of ecoliteration and student motivation is seen by calculating the test of the attitude of students of the experimental class towards ecoliteration and learning motivation obtained 82% included in the high category (Fig. 1).

Thus, it means that the Hands on Activity (HoA) learning model based on Environmental Exploration (JAS) has a significant influence on the ecoliteration and motivation of students of Ombul 3 Bangkalan State Elementary School.

3.2 Analysis of Interview Data

The interview process was conducted by researchers after taking questionnaire data. The interview process is carried out outside of lesson hours, precisely when students

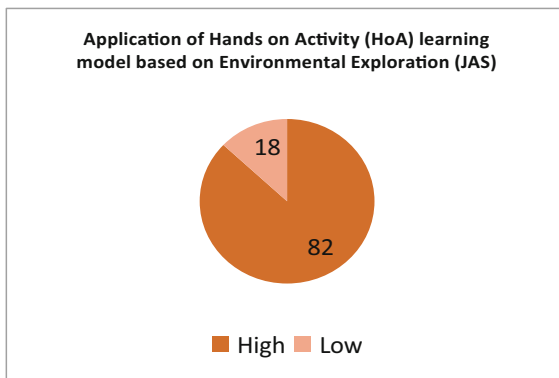


Fig. 1. Learning Model Presentation

Table 1. Activity (HoA) Model Activities based on Environmental Exploration (JAS)

Meeting	Number of scores	Percentase	Criterion
1	11	84,9%	Excellent
2	15	92,8%	Excellent

are at rest. Based on the results of interviews conducted to 10 learners, researchers drew the conclusion that all 1). Ombul 3 State Elementary Students are very happy with the Existence of a Hands on Aktivty (HoA) Based Learning Model of Environmental Exploration (JAS) Efforts to Improve Ecoliteration and Learning Motivation, 2). Students of Ombul State Elementary School 3 are easier in learning about ecoliteration, 3). Ombul 3 State Elementary Students become excited when studying outside the classroom.

3.3 Analysis of Observational Data

For the results of observation of the implementation of the program carried out by researchers at the time of the implementation of the application of learning models carried out outside the classroom. Analisis observation data on the implementation of the Hands on Activity (HoA) learning model based on Environmental Exploration (JAS) is converted into a suspension, a score of 1 for statements ticked in the “YES” column and a score of 0 for statements ticked in the “NO” column.

Results of Implementation of Hands on Activity (HoA) Model Activities based on Environmental Exploration (JAS) (Table 1).

The results of the analysis of observation data on the implementation of The Hands on Activity (HoA) activity based on Environmental Exploration (JAS) showed excellent criteria (81%–100%), with the final result at the first meeting of the percentage of 84.9% and at the 2nd meeting which was 92.8%.

3.4 Analysis of Documentation Data

Documentation data was taken during the implementation of the Hands on Activity (HoA) model based on Environmental Exploration (JAS) The result of the implementation of the Hands on Activity (HoA) model based on Environmental Exploration (JAS) is to create a project using the surrounding environment. There are documentations in the form of photos and videos that show that the children of Ombul 3 State Elementary School are very enthusiastic and interested in this learning and increasingly enthusiastic spirit in learning (Fig. 2).



Fig. 2. Student Work

4 Conclusion

Based on the results of activities on the Hands on Activity (HoA) model based on Environmental Exploration (JAS) by using environmental projects around the environment to strive for ecoliteration and student learning motivation, it can be concluded based on the results of research data analysis using questionnaire data analysis, interview data analysis, observation data analysis and documentation data analysis providing a significant influence on the ability of ecoliteration and learning motivation. Students of Ombul State Elementary School 3 Bangkalan.

In the percentage of results of the implementation of the Hands on Activity (HoA) model based on Environmental Exploration (JAS) 82% of students belong to the high category. In the analysis of the results of the interview conducted to 10 students by producing; 1). Ombul 3 State Elementary Students are very happy with the Hands on Aktiviti (HoA) Learning Model Based on Environmental Exploration (JAS) Efforts to Improve Ecoliteration and Learning Motivation, 2). Students of Ombul State Elementary School 3 are easier in learning about ecoliteration, 3). Ombul 3 State Elementary Students become excited when studying outside the classroom. As well as the results of the analysis of observation data on the implementation of The Hands on Activity (HoA) activity based on Environmental Exploration (JAS) showed excellent criteria (81%–100%), with the final result at the first meeting of the percentage of 84.9% and at the 2nd meeting which was 92.8%.

5 Suggestion

Based on the results of the study, the suggestions put forward to improve the ecoliteration and motivation of learning students are as follows:

1. In the teaching and learning process should be by more utilizing the environment around the school, in order to produce maximum achievements compared to the usual learning in the classroom.

2. In learning activities using the JAS (Environmental Exploration) model, every student should be able to create a work or project that utilizes the surrounding environment, in order to be able to ecoliteration and can motivate students.

References

1. D. J. Harvey, L. N. Montgomery, H. Harvey, F. Hall, A. C. Gange, and D. Watling, "Psychological benefits of a biodiversity-focussed outdoor learning program for primary school children," *J. Environ. Psychol.*, vol. 67, p. 101381, 2020, doi: <https://doi.org/10.1016/j.jenvp.2019.101381>.
2. Ahmad Abdullah, "Effect of Lecturer's Qualification and Academic Achievements on Learning Quality," *Angew. Chemie Int. Ed. 6(11)*, 951–952., vol. 4, no. 1, pp. 5–24, 1967.
3. S. Weichenthal, E. Dons, K. Y. Hong, P. O. Pinheiro, and F. J. R. Meysman, "Combining citizen science and deep learning for large-scale estimation of outdoor nitrogen dioxide concentrations," *Environ. Res.*, vol. 196, no. 2, p. 110389, 2021, doi: <https://doi.org/10.1016/j.envres.2020.110389>.
4. N. Spalie, Utaberta, Abdullah, M. Tahir, and A. Che, "Reconstructing sustainable outdoor learning environment in Malaysia from the understanding of natural school design and approaches in Indonesia," *Procedia - Soc. Behav. Sci.*, vol. 15, pp. 3310–3315, 2011, doi: <https://doi.org/10.1016/j.sbspro.2011.04.291>.
5. S. Schaal, M. Matt, and S. Grübmeier, "Mobile Learning and Biodiversity—Bridging the Gap between Outdoor and Inquiry Learning in Pre-Service Science Teacher education," *Procedia - Soc. Behav. Sci.*, vol. 46, pp. 2327–2333, 2012, doi: <https://doi.org/10.1016/j.sbspro.2012.05.479>.
6. P. M. Salmon, N. Goode, N. Taylor, M. G. Lenné, C. E. Dallat, and C. F. Finch, "Rasmussen's legacy in the great outdoors: A new incident reporting and learning system for led outdoor activities," *Appl. Ergon.*, vol. 59, pp. 637–648, 2017, doi: <https://doi.org/10.1016/j.apergo.2015.07.017>.
7. C. N. Orson, G. McGovern, and R. W. Larson, "How challenges and peers contribute to social-emotional learning in outdoor adventure education programs," *J. Adolesc.*, vol. 81, no. July 2019, pp. 7–18, 2020, doi: <https://doi.org/10.1016/j.adolescence.2020.02.014>.
8. K. A. Nice *et al.*, "Sky pixel detection in outdoor imagery using an adaptive algorithm and machine learning," *Urban Clim.*, vol. 31, no. February 2019, p. 100572, 2020, doi: <https://doi.org/10.1016/j.uclim.2019.100572>.
9. S. Z. Mirrahmi, N. M. Tawil, N. A. G. Abdullah, M. Surat, and I. M. S. Usman, "Developing conducive sustainable outdoor learning: The impact of natural environment on learning, social and emotional intelligence," *Procedia Eng.*, vol. 20, pp. 389–396, 2011, doi: <https://doi.org/10.1016/j.proeng.2011.11.181>.
10. K. Liu, T. Nie, W. Liu, Y. Liu, and D. Lai, "A machine learning approach to predict outdoor thermal comfort using local skin temperatures," *Sustain. Cities Soc.*, vol. 59, no. October 2019, p. 102216, 2020, doi: <https://doi.org/10.1016/j.scs.2020.102216>.
11. M. Lawton, "'Employers' perspectives on maximising undergraduate student learning from the outdoor education centre work placement," *J. Hosp. Leis. Sport Tour. Educ.*, vol. 21, no. January, pp. 1–12, 2017, doi: <https://doi.org/10.1016/j.jhlste.2017.05.001>.
12. I. Juriza *et al.*, "Outdoor camps experiential learning activities for teamwork and leadership among medical students," *Procedia - Soc. Behav. Sci.*, vol. 18, pp. 622–625, 2011, doi: <https://doi.org/10.1016/j.sbspro.2011.05.091>.

13. P. C. Dixon *et al.*, "Machine learning algorithms can classify outdoor terrain types during running using accelerometry data," *Gait Posture*, vol. 74, no. June, pp. 176–181, 2019, doi: <https://doi.org/10.1016/j.gaitpost.2019.09.005>.
14. N. Cosco, R. Moore, M. Monsur, and L. S. Goodell, "Outdoor Learning Environments as Active Food Systems: Effectiveness of the Preventing Obesity by Design Gardening Component," *J. Nutr. Educ. Behav.*, vol. 50, no. 7, pp. S118–S119, 2018, doi: <https://doi.org/10.1016/j.jneb.2018.04.263>.
15. A. Alkhafaji, S. Fallahkhair, and E. Haig, "A theoretical framework for designing smart and ubiquitous learning environments for outdoor cultural heritage," *J. Cult. Herit.*, vol. 46, pp. 244–258, 2020, doi: <https://doi.org/10.1016/j.culher.2020.08.006>.
16. H. Acar, "Learning Environments for Children in Outdoor Spaces," *Procedia - Soc. Behav. Sci.*, vol. 141, pp. 846–853, 2014, doi: <https://doi.org/10.1016/j.sbspro.2014.05.147>.
17. W. S. Ramadhani, Erman, and N. K. Indah, "Penerapan pembelajaran outdoor learning process (OLP) melalui pemanfaatan taman sekolah sebagai sumber belajar materi klasifikasi tumbuhan untuk meningkatkan hasil belajar siswa SMP," *J. Pendidik. Sains*, vol. 4, no. 3, pp. 1–7, 2016, [Online]. Available: <http://jurnalmahasiswa.unesa.ac.id/index.php/pensa/article/view/15312/13870>.
18. L. Oktamarina, "Meningkatkan Karakter Peduli Lingkungan Sejak Usia Dini Melalui Kegiatan Green School di PAUD Uswatunn Hasanah Palembang," *J. Ilm. Potensia*, vol. 6, no. 1, pp. 37–44, 2021.
19. A. R. Agusta, P. Setyosari, and C. Sa'dijah, "Implementasi Strategi Outdoor Learning Variasi Outbound untuk Meningkatkan Kreativitas dan Kerjasama Siswa Sekolah Dasar," ..., dan *Pengemb.*, no. 2016, pp. 453–459, 2018, [Online]. Available: <http://journal.um.ac.id/index.php/jptpp/article/view/10745>.
20. L. Gitleman, "PEMBELAJARAN OUTDOOR MENINGKATKAN KARAKTER PEDULI LINGKUNGAN ANAK USIA 5-6 TAHUN DI TK SUSTER PONTIANAK," *Pap. Knowl. . Towar: a Media Hist. Doc.*, pp. 1–9, 2014.
21. N. Baiti, "Desain Pengelolaan Lingkungan Bermain Dalam," *J. Pendidik. Islam Anak Usia Dini*, vol. 3, pp. 98–106, 2020.
22. I. G. A. D. Gunayanti, N. K. Suarni, and L. A. Tirtayani, "Penerapan Metode Bermain Outdoor untuk Meningkatkan Kemampuan Kognitif Anak," *J. Pendidik. Anak Usia Dini Undiksha*, vol. 3, no. 1, 2015.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

