ABSTRACT

NIKEN AJENG PRADITA. 2025. ***The Effect of Problem-Based Learning Based on Differentiated Instruction on Science Literacy and Environmental Literacy Skills (Experimental Study in Grade X at SMAN 1 Cihaurbeuti on the Ecosystem Topic for the 2024/2025 Academic Year***. *Thesis of the Department of Biology Education, Faculty of Teacher Training and Education, Siliwangi University, Tasikmalaya.*

Science literacy and environmental literacy are skills that need to be mastered in the 21st century, but in reality, both have not been optimally developed in the learning process, so it is necessary to apply a learning model that can improve science literacy and environmental literacy skills. This study aims to determine the effect of problem-based learning based on differentiated instruction on science literacy and environmental literacy skills in Grade X at SMAN 1 Cihaurbeuti on the topic of ecosystems for the 2024/2025 academic year. The population in this study consists of all Grade X students at SMAN 1 Cihaurbeuti, totaling 288 students. The research sample was taken using purposive sampling, resulting in two classes being selected as samples: class X-2 with 30 students as the experimental class and class X-1 with 30 students as the control class. The instruments used in this study were multiple-choice tests, consisting of 25 questions on science literacy skills and 19 questions on environmental literacy. The data analysis technique used was ANCOVA with a significance level of $\alpha = 0.05$. Based on the results of data analysis and hypothesis testing, the significance values for science literacy and environmental literacy were 0.010 and 0.009, respectively, which are < 0.05. Therefore, it can be concluded that there is an effect of problem-based learning based on differentiated instruction on students' science literacy and environmental literacy. This implies that the implementation of the problem-based learning model based on differentiated instruction can enhance students' science literacy and environmental literacy skills.

Keywords: Problem-Based Learning; differentiated instruction; science literacy; environmental literacy