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The Use of Biology Textbook based on Collaborative Learning Model to Improve Scientific Literacy Skill

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ABSTRACT

Scientific literacy skills are important skills taught to prepare students for the 21-st century learning era. Textbook based on collaborative learning model can be an alternative to improving students' scientific literacy skills. The purpose of the study was to describe scientific literacy skills and student responses through the use of biology textbook based on collaborative learning model. The type of research used is descriptive quantitative research with one group pretest-posttest research design. The instruments used are scientific literacy skills tests and response questionnaire sheets. The N-Gain score, a paired sample t-test, and the results of the students' responses were used to analyze the data. The results showed that the value of the science literacy skills test increased with an N gain of 0.67, sig 0.05, and 95% of students responded positively. These results indicate that textbook based on collaborative learning model is effectively used to train students' scientific literacy skills and can be tested widely.

INTRODUCTION

Science is a human effort to understand the universe through precise observations of the target, as well as using procedures, and explained by reasoning so as to produce a conclusion (Susanto, 2013). The provision of quality science education is expected to be able to equip students to face global problems. This is because, in science learning, especially through scientific literacy, students are trained to solve problems (Afriana et al., 2016). Scientific literacy is a competency that must be possessed by students by involving scientific issues, scientific ideas and being someone who thinks critically (OECD, 2016). Scientific literacy is the ability to interact with various basic values of science, so that it can be used in solving problems in the current era of technological progress (Laugksch, 2017; Saraswati et al., 2021). Some areas of science literacy were separated, such as the environment, climate, and earth (Suryani and Hariyono, 2021). Scientific literacy views the importance of thinking and acting skills that involve mastering thinking and using scientific thinking in recognizing and addressing social issues. Scientific literacy is important for students to understand the environment, health, the economy, modern society, and technology.

The results of a survey conducted by the Program for International Student Assessment (PISA), show that Indonesian students have low scientific literacy skills, which are ranked 69th out of 76 countries (OECD, 2016). Other studies have also proven the low scientific literacy skills of Indonesian students (Merta et al., 2020; Robbia and Fuadi, 2020; Diana et al., 2015). This should reflect educators' ability to create meaningful learning while practicing scientific literacy skills. Student must be trained in this skill more effectively because it can meet all of the demands of 21st century

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