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Science Learning Materials in Integrated PBL Scientific Literacy Model to Improve Problem Solving Ability of Junior High School Students

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ABSTRACT

This research is motivated by the low ability of students to solve problems. This research aims to produce the validity of the Problem Based Learning (PBL) model science learning tools integrated with scientific literacy to improve the problem solving skills of class VIII junior high school students. The research method used is the development method with Four-D (4D) stages.The subjects of this study were validated learning tools including the syllabus, lesson plans (RPP), Student Worksheets, and problem-solving ability tests. While the object of this research is the level of validity of the learning device. The data analysis technique was carried out in a qualitative descriptive manner based on the assessment of three validators. The results of the validation by three validators concluded that the syllabus had an average score of 3.97 with valid criteria, the Learning Implementation Plan (RPP) had an average score of 3.84 with a valid category, Student Worksheet with an average score 3.70 in the valid category and the problem-solving ability test assessment instrument gets an average score of 3.60 in the valid category. Based on the results of this validity analysis, the learning materials developed was declared valid for use in learning. Thus the learning materials developed can be used as an alternative in improving the problem solving ability of students in their learning.

INTRODUCTION

In the era of the 21st century, the demands are even greater to provide education that is able to produce reliable human resources so that they are able to answer the challenges of the times with all their problems. Knowledge is an important aspect that needs to be possessed by everyone who knows, through his work humans gain knowledge that is constructed from experience, the formation process runs dynamically and every new understanding causes reconstruction (Rizal, et al 2016). Piaget (in Slavin, 1994:145) states that students need to be encouraged to discover their own knowledge through direct interaction with their environment. Because building interactions with each other is very possible for knowledge transfer, collaboration is established which results in easier and lighter learning tasks (Ardianto & Rubini, 2016). So that teachers are required to prepare learning with various activities that involve students directly with the real world. Because as a mediator, the teacher should be able to generate positive energy for students with various active, innovative, creative, effective and fun learning activities such as practicum activities or demonstrations of real problems so that students' creativity in solving problems is explored. Presentation of problems from real phenomena can be packaged in the form of activities that exist in worksheet (Gestarini, et al., 2018). For this reason, it is very important for teachers to understand the potential and expertise of different students with varying levels of understanding and knowledge in managing information so that teachers need to know their thinking styles and construct their knowledge (Rahman & Setiawan, 2013). Applying Piaget's theory means

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