



## Science Literacy Profile of Junior High School Students Based on Knowledge, Competence, Cognitive, and Context Aspects

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### ABSTRACT

Humans are faced with industrial advances based on science and technology to meet the needs of human life and solve problems from related issues based on scientific literacy skills. This study aims to describe students' scientific literacy skills which include aspects of knowledge, aspects of competence, aspects of cognitive, and aspects of the context of junior high school students aged 15 years. This research is a quantitative descriptive analysis research. The instrument used to determine scientific literacy skills was a scientific literacy test consisting of 20 multiple choice questions. The science literacy test was validated by two expert lecturers at the State University of Surabaya and one science teacher at State Junior High School of 32 Surabaya. The research also aims to describe the correlation of scientific attitudes to scientific literacy skills. The instrument used was a response questionnaire with 20 yes and no questions. The results showed that the value of the knowledge aspect was 60.57%, the competency aspect was 60.60%, the cognitive aspect was 59.9%, and the context aspect was 60.19%. Scientific literacy skills can be improved by refractor, strategies, and appropriate learning methods. Teachers need to provide access to learning resources from various literary sources, including browsing information via the internet. Students need to be trained to be literate, hone critical and creative thinking, be competent in making decisions to solve problems, and communicate systematically.

### INTRODUCTION

Malik (2018) stated, "In the 21st century, we live in an interconnected world where globalization, Information Communication Technology and knowledge explosion have shrunk the world into a global village. Education, ICT, innovation and science technology are the main pillars of knowledge society. Technology is shaking the world". In other words, In 21st century is a century where industrial progress develops based on science and technology which aims to meet the needs of human life. The developing industry cannot be separated from investigative activities. Investigative activities are in the form of making observations, formulating problems, conducting analyzes, making conclusions and providing recommendations, communicating the results of experiments in writing and presentations (Aberšek, 2015). Investigation activities cannot be separated from the educational aspect.

Based on the global competitiveness index from The Global Competitiveness Report 2012-2013 published by the World Economic Forum (WEF), Indonesia ranks 50th out of 144 countries in 2012 at the world level, 46th out of 142 countries in 2011 and 44 in 2010 (Irianti, 2019). This condition was exacerbated by the achievement of scientific literacy reported by the 2018 PISA (Program for International Student Assessment) announced by the OECD (The Organization for Economic Co-operation and Development) which showed an average score of 489 scientific literacy, while Indonesia's score was 396 with

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