



## Application of A Guided Inquiry Learning Model to Improve Students' Scientific Literacy Skills

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### ABSTRACT

**Objective:** This study aims to determine the guided inquiry learning model's effectiveness in improving students' scientific literacy skills. **Method:** This is an experimental research with a one-group pretest-posttest design without using a control class. **Results:** The research results show that applying the guided inquiry learning model significantly increases students' scientific literacy. Data were analyzed using descriptive methods. Evaluation of the learning plan shows a good feasibility level in its implementation. Student learning outcomes have increased significantly, including understanding of science concepts and scientific skills. Most students progress positively in reading, understanding, and analyzing scientific information. These findings are strengthened by direct observations of students' active participation and involvement during learning. Thus, using the guided inquiry learning model positively contributes to increasing students' scientific literacy. **Novelty:** The novelty of this research lies in its new contribution to increasing scientific literacy by applying the guided inquiry learning model. The positive response from students to this learning model emphasizes its relevance in advancing scientific literacy. These findings show that the practical use of the guided inquiry model can improve students' understanding of concepts and scientific skills. Integrating this learning model into the learning context adds essential value to science education. The research results confirm that the effective use of the guided inquiry model can increase students' scientific literacy, making a significant contribution to preparing them to face future scientific challenges.

### INTRODUCTION

In higher education, scientific literacy skills are critical because they help students develop a deep understanding of science and scientific methods. This enables them to understand and interpret scientific information critically and recognize and avoid the spread of inaccurate or false information. A deep understanding of science is the foundation for developing solid scientific literacy skills. This includes understanding various scientific concepts and processes, as well as applying science in everyday life (Sigit et al., 2022). In the same context, research conducted by Miarsyah et al. (2021) underlines the importance of a solid scientific understanding as a basis for developing adequate scientific literacy. Students with a solid understanding of science will be better able to evaluate scientific claims, make informed decisions, and actively participate in meaningful scientific discussions. A recent study by Kahar et al. (2022) found that students with solid scientific literacy skills have better academic performance and a deeper understanding of scientific concepts. In addition, scientific literacy skills also prepare students to engage in research and innovation and enable them to provide critical, evidence-based thinking on social and environmental issues. Therefore, higher education institutions need to encourage and develop scientific literacy skills in their students.

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