Analysis Effectiveness of Guided Inquiry Implementation to Improve Students' Science Process Skills

Kartika Sulistyani[1], Sifak Indana[2], Elok Sudibyo[3]
[1,2,3] Universitas Negeri Surabaya, Surabaya, Indonesia

ABSTRACT

In improving science process skills, several learning approaches are carried out by teachers to achieve these objectives. One of the learning approaches used is the guided inquiry implementation. The objective of this research was to analyse effectiveness of the guided inquiry implementation to improve science process skills for elementary, junior high, and senior high school students. The research method used is study literature from various studies that have been published in journals, both nationally and internationally. Based on the analysis of 30 articles using the guided inquiry implementation, it is concluded that this learning approach is effective in improving science process skills, but teachers need to be aware for some strengths and weaknesses of this learning approach, so they need to be creative and innovative to develop the method used based on the characteristics of students in order to achieve the objective. Additionally, the use of the guided inquiry implementation can also improve long term memory, critical and creative thinking skills, motivation to learn science, and improve cognitive learning outcomes in science.

INTRODUCTION

Science is one of the knowledge that study everything around us systematically. Science is included in the category of special knowledge because it includes observation, experimentation, conclusion and the formulation of theories that are interrelated one another (Vom Brocke et al., 2020; Baskerville et al., 2018). In this case, science is more likely to learn something that has a process in improving students' abilities and skills so that certain learning approaches are needed to make students understand and apply learning materials easier in order the material delivered will be stored in student's long-term memory indirectly.

Nowadays, suspicion arises that science learning at school tends to be bored which is dominated by lecture method implementation. The main orientation of the science learning was suspected only at the completion of the material according to the allocated time based on the school curriculum used and it will make science learning cannot be optimal to develop student potential. The science learning approaches recommended by many experts is student-centered learning whereas provide opportunity for the students to learn "learning", not to learn "receiving" only (Ha & Kim, 2019). Discovery learning opportunities are developed in the form of inquiry base learning approach (Mariyana et al., 2020; Behfar & Okhuysen, 2018). Inquiry base curriculum is allocated 50% of the time for doing experiment so the students can solve the problem by finding their own concept and develop their curiousity.

Several methods of learning science are carried out by teachers, one of the methods used is inquiry (Quintana et al., 2018; Zhai, 2021; García-Carmona, 2020). According to

4._258_672-687_Final.doc