## Development of procedural understanding through constructivist writing among pre-university students in laboratory lesson

## Abstract

This study intended to explore how pre-laboratory activity specified in the constructivist writing approach could promote students' development of procedural understanding in the laboratory. A group of 15 preuniversity students from one of the Form 6 Centre at the West Coast Division of Sabah was given laboratory work with an inquiry-based strategy. Data was collected from students' writing tasks during the pre-laboratory activity and was triangulated with their conversation during the activity and reflection report. The students' procedural understanding was analyzed with a qualitative method using document analysis of the writing task, reflection report, and conversation analysis. The laboratory lesson is an inquiry-based instruction with an argumentative teaching method on the topic of organic chemistry. The finding shows the prelaboratory writing tasks, teachers' guidance throughout the lab investigations, and students' prior knowledge have a significant influence on the development of students' procedural understanding. This study suggests emphasizing the constructivist writing approach in the prelaboratory activity and teachers' guidance for students to enhance their procedural understanding through prior knowledge to solve a scientific problem.