

Enhancing higher order thinking skills via inquiry-based laboratory practices among science students

ABSTRACT

The purpose of this study was to compare the higher order thinking skills achievement tests of students who practice laboratory practices (LAB) and students who do not practise laboratory practices (RouT) towards two Biology chapters in secondary schools. At the same time, one of the HOTS items which was 'Planning-Experiment' open question was also being compared between the two groups. The data analysis results showed that students taught using LAB instructional method scored significantly higher in their higher order thinking skills than those taught using the routine teaching method on biology content. The post-test results of 'Planning-Experiment' item analysis also showed there was a significant higher in mean scores for LAB group higher than RouT. This indicated that LAB group can write better answers in the 'Planning-Experiment' after attended the laboratory classes compared to RouT who did not practice laboratory at all.

Keyword: Biology; Constructivism; Higher order thinking skills; Laboratory practices