

## **Exploring the Impact of Project-Based Learning and Discovery Learning to The Students' Learning Outcomes: Reviewed from The Analytical Skills**

### **ABSTRACT**

The purposes of the research were to know the difference between the student cognitive achievement who learned using PjBL and Discovery Learning models, between the student who had the high and low analyzing ability, and their interaction. The research population included the seventh-grade students in one of the Islamic state schools in Surakarta. The research subjects were students with different knowledge capabilities from low to high levels. The method has been implemented was experimental research. A two-way Anava test was chosen for the technique of analyzing data in this research. In collecting data, the multiple-choice test was used based on aspects of analytical abilities, namely mental flexibility, verbal reasoning and reading comprehension, scientific and mechanical reasoning. The result showed that there is the effect of the application of PjBL and Discovery learning model on cognitive achievement with the significance value  $<0,05$ , there is the effect between high and low analyzing ability on cognitive achievement with the significance value  $<0,05$  and there was no interaction between learning model and analyzing ability on cognitive achievement with the significance value  $>0,05$ . This study implies that the PjBL model and discovery have a significant impact on student learning outcomes so that they can be used for other science subjects by paying attention to the internal factors of students that will be used as a review.