

ABSTRACT

Trio Junira Fernando. 2021. “The Effect Of HOTS Oriented Worksheets With Barcode Assistance In Online Learning To The Students' Critical and Creative Thinking On Heat and The Kinetic Theory Of Gases Learning Topic In Grade XI Of 1st Harau District Senior High School” *Undergraduate Thesis*. Padang: Physics Education of Study Program, Department of Physics, Faculty of Math and Natural Science, Universitas Negeri Padang.

Education is one of the most important components in face the times. It is characterized by the use of science and technology in all facets of life. The demands that a person must have in living in the 21st century is mastering various skills, one of which is HOTS. To realize HOTS, the government is currently implementing the 2013 curriculum. HOTS (Higher Order Thingking Skill) is the ability to use information to solve problems, analyze arguments, and make predictions. Based on Bloom's taxonomy revision 2017. HOTS indicator is that students are able to think critically, make decisions and think creatively, the ability to solve problems. Critical and creative thinking indicators here become the main focal point, because by mastering critical thinking skills and creative mindset students will be trained to face complex problems. However, real conditions in schools show that students' critical and creative thinking skills in school are still relatively low, this is because the learning process in schools has not implemented the 2013 curriculum optimally and in the midst of the covid'19 pandemic which demands that learning must be maintained online. One solution to this problem is to apply a barcode-assisted HOTS-oriented worksheet to the online learning process. This study aims to find out the improvement of students' critical and creative thinking skills by applying HOTS-oriented worksheet assisted by barcodes with an inkuiri model guided on heat material and gas kinetic theory grade XI Of State High School 1 Harau Subdistrict.

This type of research is pseudo experimental research. The research design is Randomized Control-Group Only Design. The population of this study is students of grade XI science 1 and XI science 4. Sampling is done by purposive sampling technique and cluster random sampling. The samples in this study were grade XI science 1 as a class that implemented a barcode-assisted HOTS-oriented student worksheet and a science 4 grade XI as a control class. This research only observes aspects of knowledge. The research data were analyzed using descriptive analysis, normality and homogeneity tests, and hypothesis tests at a real level of 0.05.

Based on the results of data analysis, it can be stated that students' critical and creative thinking skills of each class indicator using a barcode-assisted HOTS-oriented student worksheet have increased significantly. So that it can be concluded that there is an improvement in students' critical and creative thinking skills by applying HOTS-oriented student worksheet with barcode-assisted heat material and gas kinetic theory grade XI High School 1 Harau Subdistrict with a level of 95% trust.

Key Words : Critical and Creative, Thinking Skills, barcodes, Guided Inkuiry