

ABSTRACT

YUNIA RIZKI. Development of Virtual Chemistry Laboratory as Interactive Practical Media for Senior High School Grade XI on Topic Solubility and Solubility Product. Postgraduate Program State University of Medan 2018

The purpose of this study was to develop and tested the feasibility of virtual chemistry laboratory (VCL) as practical media in class XI SMA. This study also aimed to analyze student achievement, student understanding of submicroscopic level and student activity in learning using VCL on topic solubility and solubility product. The samples to test the feasibility of media were two expert validators and five chemistry teachers. This research was conducted in State Senior High School 1 Binjai. Samples of this research were 64 students that was divided into two classes, experiment class and control class. Experiment class was learned by using virtual chemistry laboratory while control class was learned without using virtual chemistry laboratory. The instruments were questionnaire to analyze the feasibility of VCL media, objective tests (multiple choice) to analyze student achievement, worksheet (essay test) to measure understanding of students in submicroscopic level and observation sheet to observe students activity. Normality test of student achievement in control class and experiment class were 0.057 and 0.642 respectively, while student understanding of submicroscopic level in control class and experiment class were 0.104 and 0.126 respectively, it means the data were normally distributed. Homogeneity test of student achievement and student understanding in submicroscopic level were 0.083 and 0.446 respectively, it means the samples were homogeneous. The result obtained (1) virtual chemistry laboratory media that developed is suitable with eligibility standard of BSNP (National Education Standards Board) (2) student achievement that was learned by using virtual chemistry laboratory media is higher than learned without using virtual chemistry laboratory media (3) students understanding of submicroscopic level that was learned by using virtual chemistry laboratory media is higher than learned without using virtual chemistry laboratory media (4) student activity that was learned by using virtual chemistry laboratory media is more active than learned without using virtual chemistry laboratory media (5) student activity has positive correlation with student achievement $r = 0.518$ and coefficient determinant 26.9% (6) student activity has positive correlation with student understanding of submicroscopic level $r = 0.505$ and coefficient determinant 25.5%

Keywords : *Virtual Chemistry Laboratory, student achievement, student understanding of submicroscopic level, student activity,*