

GENDER DIFFERENCES AND JUNIOR HIGH SCHOOL STUDENTS CONCEPTUAL MASTERY BY USING VIRTUAL LABORATORY MEDIA ON OPTIC TOPICS

Annisa Nurramadhani

0902175

International Program On Science Education
Indonesia University Of Education

ABSTRACT

Based on previous research, virtual laboratory or multimedia interactive can improve students conceptual mastery and boys students has outperformed in physics subject than girls, boys also outperformed than girls in multimedia interface. So, this research is done to investigate gender differences and junior high school students conceptual mastery by using virtual laboratory media on optic topics. Based on the purpose of this research, the method that is used in this research is quasi experiment with the subject are two classes, VIII A (Boys class) and VIII B (Girls class) in Pribadi Bilingual Boarding School Bandung and the research design is matching pretest-posttest comparison group design. The research instrument that is used is item test for conceptual mastery, interest in physics questionnaire, and virtual laboratory learning media which is developed by the researcher. To develop virtual laboratory learning media, storyboard of media should be developed then, it should be judged. After that, virtual laboratory can be made by using macromedia flash. Data processing was done by independent sample t-test using Microsoft Office Excel 2010 and SPSS 18. The result of this research shows $t_{\text{computation}} \text{ value} > t_{\text{table}}$, $t_{\text{computation}} \text{ value}$ is $3,348 > 2,020$ that there are significant differences conceptual mastery improvement between boys class and girls class by using virtual laboratory in optic topics. The level cognitive between girls class and boys class are different and interest in physics also has differences between boys class and girls class. For whole result, boys has outperformed in conceptual mastery and level cognitive than girls class. Also boys have more interest in physics than girls class.

Keywords: *Gender differences, Conceptual mastery, Virtual laboratory*