

**THE DIFFERENCE BETWEEN VIRTUAL LABORATORY MEDIA AND
REAL LABORATORY TO INCREASE STUDENT'S ACHIEVEMENT
IN SENIOR HIGH SCHOOL ON LEARNING
ACID-BASE TITRATION**

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ABSTRACT

The thesis entitle the difference between virtual laboratory media and real laboratory to increase student's achievement in senior high school on learning acid-base titration. This research aimed to know if there is significant different between the using of virtual laboratory media and real laboratory due to the increasing of student's achievement. The virtual laboratory media used was built by Macromedia Flash Pro 8. The population of research is senior high school students year XI and due to the limitation, SMAN 1 Percut Sei Tuan students year XI was choosen as sample. The samples were two classes which are selected randomly. The experiment class was treated with virtual laboratory media while the control class was treated by real laboratory. The research instruments used are questions (instrument test) for pre test and postest and character observation sheet. These instrument have been validated by the expert validator. For instrument test, it was analyzed by using SPSS 17 for the validity and realibility and using Microsoft Excell for its difficulty level and discrimination index. From 30 items of instrument test, finally gotten 20 items valid and reliable to be used.

As this research aimed to know the difference of student's achievement using virtual laboratory and real laboratory, the researcher done analyzing process based on the result of pre test and post test. The average of pre test in control class is 25.94 while in experiment class is 24.53. After done learning process, the average of post test in control class is 63.13 while in experiment class is 63.13. Normality and homogeneity test were done in order to make the data can be statistically analyzed. Then, using independent sample t test (two-tailed), gotten the result as 0.00 below the significant level of 0.05, means there is significant different in student's achievement. Affective aspect was analyzed to the students treated by virtual laboratory media. The characters observed were responsibilty and activeness, from two times class conducted, the students overall got the development of responsibility as 32.29% and activeness as 30.73%.