

**THE EFFECTIVENESS PROBLEM BASED LEARNING WITH
HANDOUT MEDIA TO INCREASE STUDENT'S
ACHIEVEMENT ON COLLOIDAL SYSTEM**

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ABSTRACT

The objectives of this research are (1) to determine whether the student's achievement that teaches by problem based learning with using handout media is significant higher than teach by direct instruction method, (2) to know the percentage of the student's curiosity character can be developed by problem based learning with handout media, (3) to know the percentage of the student's responsive that give to handout media, (4) to know the correlation student's curiosity character and student's achievement that teach by problem based learning with using handout media on the topic of colloidal system. The population of this research was all class in Grade XI Science on 2nd semester from SMA Negeri 2 Balige. Sample was chosen by randomly sampling and taken 2 classes from the population. The first class was used as experimental class and second class as control class. There were 62 students that coming from the sample. The instruments that used were 20 items of multiple choice test., an observation sheet of student's curiosity character that has 4 indicators to observe the development of student's character. In addition, there is questionnaire of curiosity character to support the data of the observation sheet. In experimental class, the method that used is problem based learning while in control class; the method that used was direct instruction method. Before conducting the research, the pretest was done in both classes, and the data was tested by using homogeneity test. The result shows that the sample was homogeneous. Then the research was conducting in both of class and the observation sheet of student's curiosity character were done during the process of research in experimental class but in control class, the observation of student's curiosity character does not occur if the learning process only used direct instruction method. In the last meeting the questionnaire was given to student in experimental class. The increasing student's achievement (gain) in experimental class is 78% (high) while in control class is 69% (medium). After conducting the teaching learning process, the posttest was done in both of class. It used SPSS 14 for windows program to calculate the data while the hypothesis testing was tested by using Sample T-test with one tailed t-test. The results of research are (1) there are significant higher of student achievement that taught by problem based learning with handout media that the student's achievement that taught by direct instruction method, (2) the development of student's curiosity character that taught by problem based learning with handout media is 83.94% (high), (3) the development of student's curiosity character that taught by problem based learning model with handout media is 54.05% (medium), and (4) there is high (60%) correlation student's curiosity character and student's achievement that teach by problem based learning with using handout media on the topic of colloidal system.

Key word: Problem based learning, handout media, and colloidal system