

**THE DEVELOPMENT OF INNOVATIVE AND INTERACTIVE
LEARNING MATERIAL IN MULTIMEDIA BASED ON
THE TEACHING OF BUFFER SOLUTION**

Ayu Lestari Nababan (Reg.Number : 4133131008)

ABSTRACT

The development and innovation of learning material based multimedia in buffer solution was done to help student in learning . The study is aimed to obtain a good and standart learning material in buffer solution which can improve the student learning outcomes and student motivation to learn. The study was conducted through the development,innovation,integration of learning and multimedia on buffer solution and then trial and implementation of the learning material to the student. The material is then designed in printed and electronic basesThe population of this study was all of the students in grade XI senior high school. The research sample was taken from SMAN 1 Berastagi, SMAN 1 Kabanjahe, and SMAN 2 Kabanjahe which consist of two classes, the experimental class and control class. The experiment class learn by using the developed and innovated learning material based multimedia, while the control class learn by using chemistry handbook. The results show that : (1) the chemistry books about buffer solution that were analyzed have an average of assesment 3.27, (2) the component which are integrated into develop learning material were the integration of relevant laboratory experiment, application, pictures, problems and examples, sets of evaluation and key answer, and macromedia flash. The integration of multimedia done by make the developed learning material to be an e-book that created using the flip book maker software, (3) the assessment result from the expert validator toward the developed learning material is 4.27and the standarization result from student is 4.1 (4)Innovated learning material is very effective to improve students achievement in chemistry. Students achievement in experimental class which were taught by innovated textbook is higher than control class that are taught by ordinary references with $t_{count} > t_{table}$ ($4.586 > 1.654$). (5) The student motivation in using the interactive learning material based multimedia gotten the percentage is 76% means that the motivaton in category of very good.

Keywords : learning material , student achievement, buffer solution