

THE DEVELOPMENT OF INNOVATIVE LEARNING MATERIAL REACTION RATE WITH ACTIVE LEARNING AND MULTIMEDIA

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ABSTRACT

The development of innovative learning material reaction rate with active learning and multimedia is explained in this thesis. The study is aimed to obtain good and standard chemistry learning material for senior high school students. The study is conducted through the development, innovation, integration of active learning and multimedia on reaction rate in learning material. The development of learning material on the topic of reaction rate is based on the suitability description material, core standard and basic competences of the *Kurikulum 2013* (K13) syllabus. The development of standard chemistry learning material reaction rate consists of 4 subtopics, they are the concepts of reaction rate, reaction order and rate equation, the collision theory and activation energy and factors affecting the reaction rate. There are some integration of the following relevant laboratory experiment, contextual application, the illustration, pictures and graph to support the reaction rate materials, problems and examples, solving problems, sets of evaluation and key answer and the address of relevant website for further study in the learning material. The innovation on learning material is downloaded video completed with *hyperlink* and the appropriate website address. The integration of active learning on reaction rate such as web-based learning, a reaction to video, collaborative learning group, laboratory experiences and classroom discussion. The integration of multimedia on reaction rate such as text and illustration (pictures), animations, videos and e-book for e-learning. Standardization of the learning material have been carried out by making questionnaire and the expert lecturers are agree with responses **3.61**, students in SMA N 3 Medan with responses **3.51**, students in SMA N 4 Medan with responses **3.58** and students in SMA N 1 Perbaungan with responses **3.61**. The total average of the responses is **3.57** means that chemistry learning material is valid and good. The learning material set in e-book to make it easy to use in teaching and learning process in offline system. The innovative learning material reaction rate with active learning and multimedia can use in senior high school in teaching and learning process.

Keyword : Learning Material, Reaction Rate, Senior High School