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Innovation of Contextual Chemistry Teaching Materials Based on Research Results of Producing Liquid Organic Fertilizers Made of Bamboo Shoots (Dendrocalamus Asper)

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ABSTRACT

One of the problems related to the quality of education, especially those related to Chemistry learning, is the existence of difficulties that are still experienced by students in learning this subject. The difficulty of Chemistry is related to the characteristics of Chemistry itself as referred to by Kean Middlecamp, that most of Chemistry concept is abstract, sequential and rapidly developing, chemistry is a simplification of the actual material, not only solving problems but the material to be studied is plentiful.To overcome the problem experienced by students in studying Chemistry, a learning strategy is needed to change students' view that learning Chemistry is fun and less difficult. One of the strategies offered by experts and has been proven to increase students' understanding of chemical concepts and scientific literacy is contextual-based learning. Contextual-based learning is closely related to the life around us everyday, namely the environment and the surrounding culture. The students' environmental and cultural backgrounds have a greater effect on the educational process than the effects contributed by the provision of learning materials.One context that can be used as a focus in chemistry learning is the manufacture of liquid organic fertilizer from bamboo shoots (Dendrocalamus Asper) through a fermentation process with the help of bacteria. This fermentation process can be followed by measuring changes in the volume of gas produced at any time. Therefore, this fermentation can be a very interesting theme in the learning process of reaction rate material. One of the sub-topics of reaction rate is the determination of the order of the reaction. In this research, the process of fermenting bamboo shoots into liquid organic fertilizer is the theme of the experiment to determine the order of the reaction that can be done by students through a project-based learning model.

Keywords: *Bamboo Shoots; Contextual Teaching Materials; Project Based Learning; Liquid Organic Fertilizer*