THE EFFECT OF THE PROBLEM BASED LEARNING (PBL) MODEL ASSISTED BY THE WORDWALL APPLICATION ON IMPROVING ELEMENTARY SCHOOL STUDENTS' MATHEMATICAL UNDERSTANDING

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ABSTRACT

This research was motivated by the low level of elementary school students' understanding of mathematical concepts, particularly on fraction material. The purpose of this study was to identify, analyze, and describe the effect of the model Problem Based Learning (PBL) assisted by the Wordwall application on improving elementary school students' mathematical understanding. This study employed a quantitative approach with a quasi-experimental method and a nonequivalent control group design. The sample consisted of two classes, namely an experimental class that received learning through the model Problem Based Learning (PBL) assisted by Wordwall, and a control class that received conventional learning through lectures. The research instrument used was an essay test to measure students' conceptual understanding before and after the treatment. Based on the results, the average posttest score of the experimental class was 85.87, while the control class was 67.31. The independent sample t-test showed a significance value of <0.001, indicating a highly significant difference between the two classes. Moreover, the effect size calculation yielded a value of 2.759, classified as a large effect. The implementation process of the model Problem Based Learning (PBL) assisted by Wordwall in the experimental class also ran very well and in accordance with the syntax, where students appeared more enthusiastic and actively engaged in group discussions as well as during interactive quizzes using Wordwall compared to the control class. Thus, it can be concluded that applying the model Problem Based Learning (PBL) assisted by the Wordwall application is proven to be effective in enhancing elementary school students' understanding of mathematical concepts on fractions. Therefore, teachers are encouraged to utilize the model Problem Based Learning (PBL) supported by interactive media in mathematics learning to foster active student participation and strengthen their conceptual understanding.

***Keywords**: Problem Based Learning, Wordwall, Mathematical Understanding, Elementary School Students*