The Effectiveness of Learning Mathematics with the Work Example Method and ARCS Model in terms of Transfer Ability, Cognitive Load and Motivation of Vocational Students.

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ABSTRACT

The purpose of this study is to describe: (1) how effective learning using the worked example method is in terms of student transfer ability; (2) how effective learning with the ARCS Model is in terms of student motivation; and (3) the relationship between the worked example method and the ARCS model in terms of students' near transfer, far transfer, motivation, and cognitive load abilities.

This study uses a 2×2 factorial design experiment (WE × PS vs ARCS × Conventional), resulting in four experimental groups, namely (1) worked example and ARCS model, (2) worked example only, (3) problem solving and ARCS model, and (4) problem solving only. This study was carried out at one of the Indonesian archipelago's vocational high schools. This study included 131 students with an average age of 15 years. The instrument used in this study included a near transfer and far transfer (post-test) ability test, as well as a self-rating scale to assess students' cognitive load and motivation. ANCOVA was used as a data analysis technique to test the main effects and interactions of existing variables at a significant level of 0.05 with covariates in the form of students' initial abilities.

According to the findings of the data analysis, 1) learning using the worked example method is more effective than learning using problem solving in terms of transfer ability, cognitive load, and student motivation; 2) learning using the ARCS model strategy is more effective than learning without the ARCS model in terms of transfer ability, cognitive load, and student motivation; and 3) learning using the ARCS model strategy is more effective than learning without the ARCS model. The interaction between the two is significant when viewed from the near transfer test, cognitive load in near transfer, motivation in near transfer, far transfer, and motivation in far transfer.

Kata Kunci: *worked example, ARCS model, transfer, cognitive load, motivation*