

Analysis of Factors of Student Learning Difficulties in Linear Algebra Lectures

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ABSTRACT

This study aims to determine the main factors causing students' difficulties in learning linear algebra. The focus of this research is on factors that include attitudes towards linear algebra courses, motivation, prior knowledge, lecturer abilities, teaching methods and teaching materials. The research conducted was descriptive research and used a survey method. In this study, we used 30 student respondents from the Department of Mathematics Education, FMIPA, University of Yogyakarta, semester 6. Questionnaires and interviews were used to obtain data.

According to the results of the questionnaire analysis, three main factors were found to cause students' learning difficulties in learning linear algebra. These factors are prior knowledge, attitudes towards linear algebra courses and lecturer competencies with respective percentages of 46.6% (medium category), 55.5% (medium category) and 60% (medium category). While other factors, namely motivation, teaching materials and learning methods each have a percentage of 65.2%, 73.4% and 76.7%, all of which fall into the weak category. Even though on average they were in the medium category, in the initial knowledge questionnaire, two student responses were found which had a percentage of 34.7% (strong category), namely the questionnaire related to reduced row echelon matrix material. and 42.7% (medium category), which is related to solving a system of linear equations using an inverse matrix. The last two materials are procedural in nature which require a long time so that supporting application software is needed so that they can speed up the completion process.

Based on these results it is known that there are several main factors causing student learning difficulties in studying linear algebra courses. These findings can be used as input for lecturers in linear algebra courses to improve the quality of learning effectiveness and learning outcomes.

Kata Kunci: linear algebra, learning difficulties, prior knowledge, learning methods.