

# The Development of STEM-Discovery Learning Module in Differential Equations: A Need Analysis.

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- **Abstract:** The Differential Equations (DE) is an important subject for solving the problems in various fields. However, the teaching and learning of DE in Indonesia are still textbooks-oriented, focusing on delivery knowledge and not considering learning psychology principles. The module is one of the teaching materials that can be used to promote students' activities. Hence, this study aimed to analysis the students' responses to the need for a Science, Technology, Engineering, and Mathematics (STEM)-Discovery Learning Module in teaching and learning of DE. The respondents were 124 students, 96 females and 28 males in mathematics and mathematics education in fifteen public and private universities in Indonesia. The data were collected by questionnaires and analyzed descriptively. The results revealed that about 60% of respondents stated that the teaching and learning of DE are teacher-centered and without the module. Almost 7% of respondents confirmed the use of the STEM approach in learning, and more than 95% of students believe the importance of developing the STEM-Discovery Learning Module to improve the quality of learning. In conclusion, the STEM-Discovery Learning Module development is in high demand for T&L of DE.
- **Keywords:** Discovery Learning Module, STEM approach, Differential Equations (DE)