

# Peran Trait Kepribadian dan Keterampilan Metakognitif terhadap Mathematics Cognitive Failure pada Mahasiswa Sarjana Jurusan Matematika = The Role of Personality Trait and Metacognitive Skills in Mathematics Cognitive Failure among Mathematics Undergraduate Students

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## Abstrak

Pembelajaran matematika secara konsep akan semakin abstrak di jenjang pendidikan tinggi. Mahasiswa matematika lebih banyak menghadapi penyelesaian soal berupa pembuktian teorema. Tuntutan kognitif yang semakin berat dapat memperbesar peluang untuk mengalami cognitive failure. Penelitian ini dilakukan untuk mengetahui prediktor dari mathematics cognitive failure pada mahasiswa matematika yang secara khusus harus mendalami banyaknya konsep matematika. Pengukuran variabel dilakukan dengan mengkonstruksi Mathematics Cognitive Failure Questionnaire, mengadaptasi Metacognitive Skill Scale, dan menggunakan IPIP-BFM-25 Versi Indonesia. Pengambilan data dilakukan dengan accidental sampling kepada mahasiswa matematika dari 3 universitas terbaik di Indonesia menurut QS World University Ranking 2023. Total responden penelitian yang akan diolah menggunakan uji regresi berganda sejumlah 104 orang mahasiswa matematika dari semester 3, 5, dan 7. Hasil penelitian menunjukkan bahwa extraversion, agreeableness, conscientiousness, neuroticism, dan openness, serta keterampilan metakognitif bersama-sama dapat memprediksi mathematics cognitive failure secara signifikan. Besar sumbangan efektif dari prediktor yang mampu mempengaruhi mathematics cognitive failure pada mahasiswa matematika secara signifikan adalah 21,715% dari kepribadian openness, 16,125% dari keterampilan metakognitif, dan 8,539% dari kepribadian neuroticism. Penelitian ini menunjukkan bahwa semakin tinggi keterbukaan individu dengan hal baru dan kemauan untuk mengawasi pembelajarannya dengan strategi metakognitif, serta meminimalisir gejala dari neuroticism, maka individu akan terhindar dari mathematics cognitive failure.

.....The concepts of mathematical learning become increasingly abstract at the higher education level. Mathematics undergraduate students must engage in proving theorems in each problem-solving activity. The cognitive demands will become increasingly severe, thereby increasing the chances of experiencing cognitive failure. This research was conducted to determine the predictors of mathematics cognitive failure in students of mathematics that have to study many mathematical concepts. Variable measurements were carried out by constructing the Mathematics Cognitive Failure Questionnaire, adapting the Metacognitive Skill Scale, and using the Indonesian version of IPIP-BFM-25. Data collection was carried out by accidental sampling among mathematics students from the three best universities in Indonesia based on QS World University Ranking 2023. The total number of research respondents who will be processed using multiple regression tests is 104 mathematics students from 3, 5, and 7 academic semesters. The results of the research show that extraversion, agreeableness, conscientiousness, neuroticism, and openness, as well as metacognitive skills together, can predict mathematics cognitive failure significantly. The effective contribution of predictors that can significantly influence mathematics cognitive failure in mathematics students is 21.715% from openness personality, 16.125% from metacognitive skills, and 8.539% from neuroticism personality. This research shows that the higher an individual's openness to new things and the

willingness to monitor their learning with metacognitive strategies, as well as minimizing neurotic behavior, the individual will avoid mathematics cognitive failure.