THE INFLUENCE OF MATHEMATICS ANXIETY ON STUDENTS' DAILY MATHEMATICS TEST RESULTS IN MADRASAH IBTIDAIYAH IN MALANGBONG

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Abstract

This study aims to determine the effect of mathematics anxiety on the daily mathematics test results of Madrasah Ibtidaiyah (MI) students in Malangbong District. Mathematics anxiety is a form of negative emotional response that can decrease students' academic performance. This research uses a quantitative approach with a simple linear regression design. The sample consisted of 99 students from three different MI schools selected using stratified random sampling. Data were collected through a questionnaire and documentation of students' daily mathematics test scores. The results showed a significant negative effect of mathematics anxiety on students' daily test performance. These findings highlight the need to consider students' psychological aspects in primary-level mathematics instruction.

Keywords: *Mathematics Anxiety, Daily Test Performance, Madrasah Ibtidaiyah.*

مستخلص البحث

يهدف هذا البحث إلى معرفة تأثير قلق الرياضيات على نتائج الاختبارات اليومية لمادة الرياضيات لدى طلاب المرحلة الابتدائية في المدارس الإسلامية (المدرسة الابتدائية) في منطقة مالانغبونغ. استخدم البحث منهجا كميا مع أسلوب المسح. تألفت العينة من ٩٩ طالباً من ثلاث مدارس مختلفة تم اختيارهم بطريقة العينة الطبقية العشوائية. تم استخدام استبيان لقياس القلق من الرياضيات بالإضافة إلى وثائق نتائج الاختبارات اليومية. أظهرت نتائج تحليل الانحدار الخطي البسيط وجود تأثير سلبي معنوي للقلق من الرياضيات على نتائج الاختبارات. كلما زاد مستوى القلق، انخفضت نتائج الطلاب. تؤكد هذه النتائج على أهمية الانتباه للجوانب النفسية للطلاب في تعليم الرياضيات في المرحلة الابتدائية.

الكلمات المفتاحية: *قلق الرياضيات ونتائج الاختبارات اليومية والمدرسة الابتدائية الإسلامية.*

INTRODUCTION

Academic assessment plays a crucial role in evaluating students' learning outcomes. One commonly used form of assessment is daily testing, which aims to measure how well students have understood a particular topic. However, daily tests often become a source of anxiety—especially in mathematics, a subject many students perceive as difficult. This condition is even more evident at the Madrasah Ibtidaiyah (MI) level, where cognitive development is still in progress and emotional maturity is relatively low.

According to Ashcraft and Moore, mathematics anxiety is "a negative emotional response involving fear, tension, or worry when dealing with math-related situations".[1] Such anxiety not only disrupts cognitive processes but also undermines students' self-confidence, leading to poor test performance.

Previous studies show that math anxiety significantly contributes to students' low achievement.[2] In Indonesia, research conducted by the Ministry of Education's research body shows that more than 40% of elementary and junior high school students experience moderate to high math anxiety.[3] However, studies specifically targeting MI students—especially in the context of daily mathematics tests—are still limited.

METHOD

This study applied a quantitative approach with a simple linear regression design. The research was conducted in three Madrasah Ibtidaiyah schools in Malangbong District: MIS An-Nur 1, MIS An-Nur 8, and MIS Ma'arif 1. The sample consisted of 99 upper-grade students selected through stratified random sampling.

The instruments used were:

- A 25-item mathematics anxiety questionnaire using a 4-point Likert scale.
- Documentation of students' daily math test scores obtained from teachers.

Validity testing identified 20 valid items (correlation > 0.3), while 5 items (items 6, 11, 15, 20, 25) were excluded. The reliability test produced a Cronbach's alpha of 0.87, indicating high internal consistency.

Data were analyzed using SPSS, specifically through:

- Descriptive statistics
- Simple linear regression analysis

RESULTS AND DISCUSSION

1. Validity and Reliability

Out of 25 questionnaire items, 20 were validated. The questionnaire demonstrated strong reliability, with a Cronbach's Alpha value of 0.87, indicating consistent measurement of mathematics anxiety among students.

[1] Ashcraft, M. H., & Moore, A. M. (2009). *Mathematics Anxiety and the Affective Drop in Performance*. Journal of Psychoeducational Assessment, 27(3), 197–205
[2] Suparno, P. (2018). *Filosofi Pendidikan Matematika*. Yogyakarta: Kanisius.
[3] Balitbang Kemendikbud. (2020). *Laporan Nasional Survei Pendidikan Matematika*. Jakarta: Kemendikbud.

2. Descriptive Analysis

Most students exhibited moderate to high levels of mathematics anxiety. Symptoms included nervousness, sweaty palms, avoidance behavior, and difficulty concentrating before or during math tests. This aligns with Spielberger's differentiation between trait anxiety and state anxiety, in which both temporary and long-term feelings of anxiety negatively affect performance.[4]

3. Regression Analysis

Simple linear regression analysis showed that mathematics anxiety had a significant negative influence on students' math test scores ($p = 0.000 < 0.05$). The regression coefficient was negative, suggesting that as anxiety increases, test scores tend to decrease proportionally.

Discussion

This study supports the hypothesis that mathematics anxiety negatively affects academic performance, particularly in testing situations. The result is consistent with research by Ahmad & Rahman[5] and Ashcraft[6], which found that emotional disturbances such as anxiety interfere with attention and working memory, leading to poor problem-solving abilities.

Several factors were identified as contributors to anxiety, including:

1. Pressure from parents and teachers,
2. Fear of failure or embarrassment,
3. Negative past experiences with math.

Students who lack self-efficacy—the belief in one's ability to succeed—are more likely to develop high anxiety.[7] This finding aligns with Bandura's theory that self-perception plays a major role in academic persistence and resilience.

CONCLUSION

There is a statistically significant negative effect of mathematics anxiety on students' daily mathematics test performance at the MI level. This suggests that anxiety management must be integrated into the learning process, especially in foundational subjects such as mathematics.

[4] Spielberger, C. D. (2010). *Anxiety and Anxiety Disorders: A State of the Art*. Wiley

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[7] Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.

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