THE EFFECT OF MATHEMATICS ANXIETY ON ACADEMIC PROCRATINATION MODERATED WITH SELF-CONTROL FACTORS IN MECHANICAL ENGINEERING STUDENTS OF UPI

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Abstarct

Mathematics is a study that is used as a basic science of various other exact sciences, teaching mathematics is a priority in the development of education and mathematics has an important role because mathematics is a method of logical, critical, creative thinking, order, art, and language as well. Because mathematics is a measure of a person's intelligence or intelligence, many avoid mathematics so that many students choose to do other things that are more fun or important when dealing with mathematics. Feeling anxious, worried, and uncomfortable when dealing with math, or feeling math anxiety. Math anxiety is also associated with academic procrastination to avoid feeling anxious. Procrastination is also one of the causes of a person's delay in completing his studies because individuals choose to do other things that are more enjoyable. Academic procrastination is a person's tendency to procrastinate with illogical reasons. Many of the students do academic procrastination while working on their thesis or final assignment so that these students are late in completing their studies. There are factors that can influence the occurrence of math anxiety and academic procrastination, namely good self-control in final semester students who are working on their thesis or final assignment. This study aims to analyze self-control as a variable that moderates the effect of math anxiety on academic procrastination in students of UPI mechanical engineering education. This research method uses a literature review report presentation system.
Keywords: Math Anxiety, Academic Procrastination, Self-Control, Proceedings, Abstract, 2023

Introduction

Mathematics is a study that is used as the basic science of various other sciences such as Physics, Chemistry, Economics, Statistics (Ramdhani, Wimbarti, and Susetyo, 2018). Mathematics has long been seen as a science that brings the discipline of logical thinking to the highest level of education (Kilpatrick, et. al., 2001; Thanheiser, 2023). Mathematics is often referred to as a "pattern of science" (Steen, 1988; Thanheiser, 2023) and an intellectual activity to prove and reach a conclusion (Joseph, 2010; Thanheiser, 2023). So that the teaching of mathematics is one of the priorities in the development of education, mathematics is a compulsory subject in schools which has a very important role in the continuity of the education of students, because mathematics is a method of logical, critical, creative, orderly, artistic and language thinking which not only helps research in fields of science and technology but also for the formation of tenacity, personality and character of students (Restianti, Salam, M, and Suhar, 2019).

Until now mathematics has become a measure of one's intelligence or intelligence (Thanheiser, 2023). The value of the mathematics subject is one of the requirements for a student's graduation (passing the final exam or passing the entrance exam) at every level of education, as a result of this fact, the purpose of learning mathematics has shifted from the initial arrangement of reasoning, to a mere arrangement of student graduation (oriented education). on the product not on the process) (Kamarullah, 2017). So that many students are very fluent in completing routine math problems in effective ways, but not understanding what is being done as well as the impact of changing these goals, coupled with hatred and laziness in students in learning mathematics (Kamarullah, 2017).

Mathematics is often considered not easy by a group of students so that it can trigger feelings of anxiety and fear during learning. According to some people, anxiety, fear and tension are natural things to feel when learning, but this anxiety can interfere psychologically and performance when learning. learning activities (Priyanto, 2017). Anxiety is a feeling of worry, nervousness or restlessness, which usually appears as a typical event that will happen soon or something with uncertain results. Anxiety is common in everyday life such as work stress, stress of academic activities such as facing exams (Tetreault, 2020).

Meanwhile math anxiety or math anxiety is a feeling of fear, tension and discomfort that can interfere with the performance of math tasks when faced with math lessons so that it can interfere with students' mathematics learning process (Putri and Muqodas, 2019). Students who experience math anxiety tend to avoid conditions where they have to be faced with mathematics, so they feel threatened and pressured, which has the result of negative assumptions about themselves, math anxiety cannot be ignored because students who are unable to adapt to mathematics lessons cause students to difficulties and fear of mathematics, causing low student learning outcomes (Julianti and Pujiastuti, 2020).

For some students to be able to get rid of anxiety about mathematics is to do other activities that are more fun so that students prefer to do academic procrastination (Putri and Kurniasari, 2019). Academic procrastination itself is not a new phenomenon, namely students delay academic activities without a clear purpose (Mc.Closkey and Scielzo, 2015). Procrastination is a condition in which a person refuses to complete his academic assignments (Leung and Tan, 2016). Academic procrastination is something that is connected with a person's subjective experience that is less balanced because it is suspected that high academic procrastination is connected with bad experiences, for example poor grades and reduced experience, causing disruption of one's life balance (Kuhnle, Hofer, and Kilian, 2011).

The most frequent academic procrastination behavior by students is the habit of procrastinating such as delaying completing homework or assignments, making reports, and studying to prepare for tests or exams (Hidayah and Atmoko, 2014). Academic procrastination does not look at status and education so that it can occur at any level of students (Burka and Yuen, 2008). Academic procrastination has occurred since the days of Egypt and Ancient Greece, even today there are still many academic procrastination actors who mostly occur in undergraduate and graduate students (Klassen et. al., 2010; Suhadianto and Pratitis, 2020). Students often carry out academic procrastination, especially in working on their final assignment or thesis, this can be proven by several studies regarding academic procrastination (Saman, 2017). Indonesia is one of the highest countries with students doing academic procrastination with a percentage of 50% or even more than 50% (Wahyuningtyas, et. al., 2019), reaching 78.5% (Huda, 2015), 81% (Muyana, 2018).

Based on the phenomenon of academic procrastination, research conducted by Steel and Klingsieck (2016) found that 18% of students made laziness a reason for academic procrastination. Followed by research conducted by Rengganis and Muis (2017) academic procrastination can also occur in mechanical engineering students in the final semester, 308 as many as engineering faculty student respondents including mechanical engineering students carry out academic procrastination, there are 65% of students in the medium category, 20% of students in the high category, and 15% of students are in the low category.

Because, individuals who have academic procrastination behavior have difficulties in self-regulation, such as being impulsive and easily distracted because of a lack of self-control and preferring to do things that are more fun than completing obligations, especially in academic matters that will affect them. As stated by Henden (2008) self-control is defined as a person's ability to hold back his own desires. Kuhnle, Hofer, and Kilian (2011) have a definition that self-control is a person's capacity to support him in setting the right goals and helping someone to achieve success.

Many students have low self-control (Ramadhani, 2016). This statement is proven in research conducted by Ursia, which has the result that low self-control is one of the causes of students being late in completing their studies (Ursia, et. al., 2013). Based on some of these research results, it is necessary to develop a new research model to test the hypothesis of the effect of self-control moderation variables on the correlation between academic procrastination and math anxiety. Moderating variables are variables that can strengthen or weaken the relationship between the independent and dependent variables, which are also known as the second independent variable (Sudaryono, 2021). The moderating variable in this study is self-control. Self-control is a good character that is very important for everyone to have as well as one of the factors that is important for everyone to have because it is important for everyone to have good self-control (Zulfah, 2021), especially in completing more important work such as theses or final assignments (Fachrozie , 2021).

Self-control is important for everyone because if someone has good self-control, they're knows that they're has choices and can control his actions, besides that self-control also equips a person with strong

character because the individual is able to refrain from indulging and having fun and instead focuses on responsibility" (Borba, 2008). Individuals with low self-control refer to the inability of individuals to hold back in doing something and do not care about long-term consequences. Conversely, individuals with high self-control can refrain from dangerous things by considering long-term consequences (Ray, 2011).

The level of student self-control is very important to achieve timely completion of studies. Students who are late in completing their studies have problems with self-discipline or self-control that is less assertive (Sarajar, 2016). The results of research conducted by Aini and Mahardayani (2011) showed that there was a relationship between self-control and academic procrastination, the results showed that there was a very significant negative relationship between self-control and academic procrastination in completing theses for UMK students. Similar research conducted by Purwanti, et. al. (2016), the results of this study indicate that there is a significant relationship between self-control and academic procrastination in class X students of SMA Negeri 1 Sungai Ambawang.

Methods

This research method uses a literature review that examines academic procrastination, math anxiety, which is moderated by self-control factors. The data collection technique in this research is documentation, namely seeking data in the form of results from various literature studies that will be used to identify the influence of academic procrastination variables, math anxiety which is moderated by self-control factors in UPI mechanical engineering education students.

Mathematic Anxiety

Mathematics anxiety is a phenomenon that usually occurs in someone who has an impact on their performance on tasks or work related to mathematics (Ashcraft and Kirk, 2001). Individuals with high or low math anxiety can be described from the behaviors, experiences, and beliefs experienced and owned by these individuals (Pizzie, 2022). Math anxiety is related to the experience of anxiety and is "associated" with generalized anxiety and test anxiety (Pizzie, 2022). Although math anxiety is related to the experience of anxiety experienced by someone, math anxiety is a construction that is separate from other anxiety (Pizzie and Kraemer, 2019; Pizzie, 2022).

Measurement of Mathematic Anxiety Scale

Mathematic anxiety is a feeling of anxiety, nervousness, discomfort when dealing with math lessons. Mathematical anxiety in this study was obtained from aspects of mathematical anxiety compiled by Ikegulu (1998), including physiological anxiety, cognitive anxiety, affective anxiety, and behavioral anxiety.

Academic Procrastination

Academic procrastination is defined as procrastinating behavior in completing assignments or submitting assignments on time even though it is self-defeating (Johnson and Bloom, 1995; Yan and Zhang, 2022). In addition, academic procrastination is also the behavior of students who often delay one or more academic assignments, academic procrastination can also affect the negative effects of learning (Zhou, et. al., 2022). Procrastination is also often done by students to avoid unpleasant conditions (Wardah and Suwarjo, 2021).

Measurement of Academic Procrastination Scale

Academic procrastination is a motivational problem that can undermine academic performance, and is carried out on formal tasks related to academics, thus making these tasks neglected. Academic procrastination in this study was obtained from aspects of academic procrastination compiled by Mc.Closkey and Scielzo (2015), including Psychological beliefs regarding abilities, Distraction of attentions, Social factors of procrastination, Time management skills, Personal initiative, and Laziness.

Self-Control

Self-control is individual ability to over his desire to procrastinate (Steel, 2007). Individuals with low self-control refer to the inability of individuals to hold back in doing something and do not care about long-term consequences. Conversely, individuals with high self-control can refrain from dangerous things by considering long-term consequences (Ray, 2011). Self-control is important if a person has good self-control,

then he knows he has choices and can control his actions, besides that self-control also equips a person with strong character because the individual is able to refrain from indulging and having fun and instead focus on responsibility" (Borba, 2008).

Measurement of Self-Control Scale

Self-control is an individual's ability to consider various consequences for behavior and self-control in himself such as the ability to compose, guide, regulate, and direct behavior that can lead to positive consequences. In this study, self-control has aspects obtained from Tangney, Baumeister, and Boone (2004), namely breaking habits, resisting temptation, and self-discipline.

Conclusion

Mathematics is an important science for students to learn, because mathematics is the science of all exact sciences. Even so, mathematics is also a science that is avoided by many students because it is considered too difficult, so many of the students prefer to do other activities that are more enjoyable when compared to learning mathematics or doing academic procrastination. Academic procrastination is an act of procrastination in matters related to academics. Academic procrastination is often encountered by students because it is dominated by feelings of laziness. So that with good self-control, students are able to avoid academic procrastination behavior. Conversely, if students have poor self-control then they have a tendency to do academic procrastination. This study aims to investigate the influence of academic procrastination variables on math anxiety which is moderated by self-control factors in UPI mechanical engineering education students.

Acknowledge

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