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THE EFFECT OF LEARNING ENVIRONMENT AND STUDENTS INDEPENDENT LEARNING ON STUDENTS LEARNING OUTCOMES

*[1]Agustina Setyaningsih, [2]Nur Kholik, [3]Achmad Abdul Azis,
[4]Tri Yusnanto, [5]Abdurrahman Sadikin

[1]Politeknik Ilmu Pelayaran Makassar, [2]Universitas Alma Ata, [3]IAI Khozinatul Ulum Blora,
[4]STMIK Bina Patria, [5]Universitas Lambung Mangkurat

Email: *[1]agustina.s@pipmakassar.ac.id

Abstrak: *Penelitian ini bertujuan untuk mengevaluasi hasil belajar siswa dalam pelajaran matematika ditinjau dari kemandirian belajar dan lingkungan belajar. Salah satu sekolah menjadi tempat penelitian. Penelitian ini menggunakan metode survei untuk mengumpulkan data dan merupakan penelitian deskriptif kuantitatif. Temuan penelitian mengungkapkan bahwa: Nilai rata-rata hasil belajar siswa pada mata pelajaran matematika lebih rendah dari nilai KKM sekolah. Hasil belajar siswa dalam pelajaran matematika agak dipengaruhi secara positif dan signifikan oleh kebebasan belajar siswa. Hasil belajar siswa dalam bidang studi matematika dipengaruhi secara signifikan dan positif oleh lingkungan belajar siswa. Hasil belajar siswa pada bidang studi matematika dipengaruhi secara bersamaan oleh lingkungan belajar dan kemandirian belajar siswa.*
Kata kunci: kemandirian belajar, lingkungan belajar, hasil belajar

Abstract: This study intends to evaluate school students' learning outcomes in mathematics classes in terms of learning independence and learning environment. One of schools served as the research site. This study uses survey methods for data collecting and is a quantitative descriptive study. The findings revealed that: The average score for student learning outcomes in mathematics courses is lower than the school's KKM score. Student learning results in mathematics classes are somewhat affected favorably and significantly by student learning freedom. Student learning results in mathematical learning areas are significantly and positively impacted by the student learning environment. Student learning results in mathematics are concurrently influenced by the learning environment and student autonomy.
Keywords: self regulated learning, learning environment, learning outcomes

Introduction

The potential that exists in students can be developed in various ways, one of which is through learning mathematics. This is because mathematics is a systematic discipline that can be used by humans to help solve everyday problems that surround them. In addition to this, mathematics also has several terms including: mathematics is a science that is structured, deductive, and is the queen and servant of other sciences. Meanwhile Shadiq states that the mathematics learning process can be said to be successful when students are able to solve the problems at hand (Astuti, 2016). This is because in solving a particular mathematical problem students must be able to use the mathematical knowledge that has been obtained in the learning process and students must have a good attitude towards mathematics. In the process of its development, it can be seen that mathematics is a basic science that has become a tool for studying other sciences. Mathematics is one of the sciences that underlies the development of science and information technology and has an important role in the development of thinking power (Awan, 2017). Therefore, mastery of mathematics is absolutely necessary (Astuti E. D., 2023).

Mathematics has an important role in life, but in fact there are still many students who find it difficult to understand mathematics. This is due to the characteristics of mathematics subjects which have abstract

objects of study, refer to agreements, have deductive thinking patterns, thus making mathematics subjects always considered as difficult and complicated lessons because they are always related to symbols, numbers, formulas and counting (Bella, 2019). This thinking makes it more difficult for students to understand the material presented. Students still have difficulties in solving mathematical problems related to mathematical concepts and principles, students have difficulty in using images or symbols to be able to present a mathematical concept.

Students are the center point of the learning process. Students' abilities that must be developed in mathematics learning activities are creativity, can solve challenging problems, can think logically, solve contextual problems. The use of innovative and creative methods in learning mathematics can make understanding of mathematics subject matter more interesting (Celik, 2011). The use of learning media will create a pleasant learning atmosphere for students and can solve problems independently. In addition, in a learning process so that students can obtain maximum learning outcomes can be influenced by internal and external factors.

One of the internal factors that can affect student learning outcomes is the attitude of student learning independence. The attitude of learning independence is one of the good or positive attitudes that can support student achievement and mathematical ability (Fahrurrozi, 2017). Therefore, learning independence needs to be developed in students. This is in line with Sumarmo's opinion which reveals that learning independence needs to be developed in students who study mathematics, because there is a relationship between goals and the nature of mathematics learning (Gunawan, 2017). The main characteristics of learning independence, namely: analyzing mathematics learning needs, formulating goals and designing learning programs; choosing and implementing learning strategies; monitoring and self-evaluating whether the strategies have been implemented correctly, checking the results of processes and products), and reflecting to obtain feedback. So that in the learning process for students who have learning independence, they will be confident in solving their problems (Kholik, 2019).

Student learning independence was still classified as a sufficient category because there were still students who did not take notes on the material presented, students still lacked the initiative to find other learning resources related to the material studied, and there was no courage from students to express their opinions when discussing the subject matter (Kusumawati, 2020). There are still students who have low learning independence which is indicated by a lack of initiative in learning, students still depend on friends' notes and have difficulty carrying out the learning plan that has been made. Researchers also found problems related to learning independence during the Introduction to School Field (PLP) activities. The observation results show that the learning independence of students is not optimal (Shadiq, 2008). This can be seen when the class is empty or there is no teacher, students joke around so that the class becomes crowded, after receiving a reprimand from the teacher, the students then do the assigned tasks. This shows that students' learning initiative is still lacking (Suparlan, 2019).

In addition, the results of interviews conducted by researchers with students also show that students are still dependent on others in learning. Students still have to be told by parents to study, not of their own accord. The observation results also show that during learning activities, students' confidence in their work is still lacking (Syam, 2017). This can be seen when there is a student who has finished doing the task when other students have not finished. When asked by the teacher whether he had finished, the student did not answer. Furthermore, a friend sitting behind him said that the student had finished. After that, the student showed his work to the teacher (Syibli, 2018). Based on the results of interviews with teachers conducted by researchers, teachers also realize that students are still very dependent on teachers (Nugroho, 2023). In the learning process, the teacher also has not actively involved students.

Whereas in the era of education 4.0, the teacher should no longer be the main resource person in the learning system. but as a companion, encourager, and facilitator. This means that if 4.0 is to be successful in achieving its goals, then students must be educated to be more active. This is in line with the demands of the curriculum which requires students to be able to deal with increasingly complex problems in the classroom and outside the classroom and students are expected to no longer depend on others in their daily lives. This study aims to analyze student learning outcomes in mathematics subjects based on learning independence and student learning environment (Trisnani, 2019).

Method

This type of research is quantitative descriptive research. This study used purposive random sampling and obtained 77 students as respondents who later became samples in the study. In this study, data collection techniques used questionnaires or closed questionnaires and open questionnaires made in google form for

easy access by students. Psychological scales were used to obtain data from the learning environment and student learning independence. Meanwhile, to find out the intelligence of students, a test in the form of mathematical description questions on the material of the line pattern and Cartesian plane was used. Tests were conducted using linear regression or classical assumption tests.

Findings and Discussion

Based on the results of the analysis, the asymptotic significance value is 0.200> 0.05, it can be concluded that the data is normally distributed. Based on the results of the linearity test, it is known that the significant value of the learning independence variable on learning outcomes is 0.303 so that the significance value> 0.05, then the relationship between learning independence and learning outcomes is linear. Likewise, the significance value of the student learning environment on learning outcomes is 0.648 which means the significance value> 0.05, then the relationship between learning outcomes and the learning environment is linear. Based on the multicollinearity test results, it is known that the VIF value for the learning independence variable (X1) and the learning environment (X2) is 1.290 < 10.00. So referring to the basis for decision making in the multicolinearity test, it can be concluded that there are no multicolinearity symptoms in the regression model.

From the regression equation above, it can be interpreted as follows, The constant value is -3.201. The constant value is negative, meaning that the value of the learning independence variable (X1) and the learning environment (X2) if it is considered constant or equal to zero, then the students' math learning outcomes will be less or lower. The coefficient value of X1 is 0.989. The coefficient value of X1 is positive, meaning that the effect of learning independence on learning outcomes is positive and quite strong. If the level of student learning independence is high, the student's math learning outcomes will be higher. The coefficient value of X2 is 0.182. The X2 coefficient value is positive, meaning that the effect of the learning environment on student math learning outcomes is positive and quite strong. If student learning independence increases, student math learning outcomes will increase.

The first t test was conducted to determine whether there was an effect of learning independence (X1) on student math learning outcomes (Y). Based on data processing result, it is known that the significance value (Sig) of the learning independence variable (X1) is 0.002 <0.05, it can be concluded that H1 or the first hypothesis is accepted. This means that there is an effect of learning independence (X1) on student math learning outcomes (Y). Likewise, when viewed based on the t value, the calculated learning independence variable is 3.340. Because the calculated t value is 3.340> 2.004 t table, it can be concluded that H1 or the first hypothesis is accepted. This means that there is an effect of learning independence (X1) on student math learning outcomes (Y).

The second t test was conducted to determine whether there was an effect of student learning independence (X2) on student math learning outcomes (Y). Based on data processing result, it is known that the significance value (Sig) of the student learning environment (X2) is 0.001 <0.05 so it can be concluded that H2 or the second hypothesis is accepted. This means that there is an effect of student learning independence on student math learning outcomes (Y). Likewise, when viewed based on the t value, the student learning environment variable is 3.432. Because the calculated t value is 3.432> t table 2.004, it can be concluded that H2 or the second hypothesis is accepted. This means that there is an influence of the student learning environment on student math learning outcomes. Based on data processing result, the Sig. value is 0.000. Because the value of Sig. 0.000 <0.05, then in accordance with the basis for decision making in the F test it can be concluded that the hypothesis is accepted or in other words, learning independence and student learning environment simultaneously affect students' math learning outcomes. This is supported by the calculated F value of 7.166> 3.16 F table, so as the basis for decision making in the F test it can be concluded that the hypothesis is accepted. The magnitude of the coefficient of determination (R^2) is 0.210 or equal to 21%. This figure means that the variables of learning independence and student learning environment simultaneously have an effect of 21% on student math learning outcomes. While the remaining 71% is influenced by other variables not examined.

Discussion

Students' learning independence can greatly affect their learning outcomes. Independent students tend to be more able to manage their time well, have high intrinsic motivation, and can choose the most effective learning methods for them. In the context of formal education, learning independence can be defined as students' ability to self-regulate in achieving their learning goals. Students who are independent learners can usually develop positive study habits such as setting study schedules, utilizing available supporting resources, and monitoring their learning progress independently.

Students who are independent learners tend to be more successful in achieving their learning goals because they have greater control over their learning process. They can choose the ways of learning that are most effective for them and overcome learning obstacles more easily. In contrast, students who lack independence are likely to experience difficulties in achieving their learning goals. They may not have good study habits and tend to rely on help from others. This can cause them to have difficulties in managing their time and choosing the most effective way of studying for them.

Psychologically, students' learning independence can greatly affect their learning outcomes. Students who are independent learners tend to have higher intrinsic motivation in learning, as they feel they have control over their own learning process. This can increase students' confidence and sense of competence in achieving their learning goals. In addition, learning independence can also help students develop self-regulation ability, which is an important psychological skill in achieving life goals. In an educational context, self-regulation ability can help students overcome procrastination, organize their time and energy effectively, and manage stress associated with learning tasks. Self-regulation ability can also help students identify their strengths and weaknesses in learning, and take necessary actions to improve their learning performance. In contrast, students who lack self-regulated learning tend to experience external pressures in learning, such as demands from parents or teachers. This can reduce students' intrinsic motivation in learning and result in lower learning outcomes. In addition, a lack of learning independence can also limit students' ability to develop self-regulation skills, so they may have difficulty in achieving their learning goals.

From a psychoanalytic perspective, students' learning independence can influence learning outcomes through psychological factors such as motivation, self-perception and self-confidence. According to psychoanalytic theory, the satisfaction of basic psychological needs such as the need for security, love, and self-recognition, can affect students' motivation level and learning independence. Students who have their psychological needs met tend to have higher motivation to learn and feel more confident in overcoming learning challenges. Therefore, high learning independence will be more easily achieved by students who have their psychological needs met. In addition, positive self-perception and high self-confidence can also affect student learning outcomes. Students who feel confident in their ability to learn and overcome learning challenges tend to be more successful in obtaining good learning outcomes. Conversely, students who feel insecure tend to feel anxious and fearful of failure, which can inhibit their learning independence and learning outcomes.

Learning independence is also influenced by students' relationships with the social environment and the influence of those closest to them. In psychoanalysis, positive social interactions with others can influence students' self-perception and motivation to learn. Support and motivation from parents, teachers and peers can help increase students' confidence and motivation to learn independently. Overall, students' learning independence affects learning outcomes from a psychoanalytic perspective through psychological factors such as motivation, self-perception and self-confidence. Meeting basic psychological needs, having positive self-perception and self-confidence, and support from the social environment can help improve students' learning independence and their learning outcomes.

A good learning environment can have a significant impact on student learning outcomes. The learning environment includes all factors that affect student learning, such as the physical and social environment, learning facilities, and support from parents or family. A comfortable and safe physical environment can help students focus and avoid distractions that can interfere with the learning process. Conversely, an uncomfortable and unsafe environment can hinder students' ability to focus and result in low learning outcomes. In addition, the social environment can affect student learning outcomes. Supportive and motivating friends and family can help students to face learning challenges and overcome anxiety associated with the learning process. A positive social environment can also help students collaborate and learn together, thus improving understanding and resulting in better learning outcomes.

Adequate learning facilities can also affect student learning outcomes. Facilities such as libraries, laboratories and adequate learning equipment can help students explore material more effectively. Good learning facilities can also increase students' motivation to learn and increase their engagement in the learning process. Finally, support from parents or family can also affect student learning outcomes. Parents or families who are involved in students' learning process can help them in organizing study time and provide the motivation needed to face learning challenges. Support from parents or family can also help students in planning their learning goals and achieving better learning outcomes.

A student's learning environment can affect learning outcomes psychologically. The learning environment includes all factors that affect students' learning, such as the physical, social and psychological environment. A good learning environment can increase students' motivation to learn, reduce stress, and

improve understanding and retention of information. A comfortable and safe physical environment can help reduce stress and increase students' comfort in learning. Excessive stress can interfere with students' ability to focus and negatively affect their learning outcomes. In a comfortable and safe environment, students can feel more calm and focused in learning, which can improve their learning outcomes.

The social environment can also affect learning outcomes psychologically. Positive social interactions with peers and teachers can increase students' motivation to learn. In addition, support from family and friends can help reduce stress and increase students' confidence in facing learning challenges. This can help improve students' learning outcomes. Adequate learning facilities can help students feel more confident in learning and improve their ability to understand and remember information. In addition, support from teachers and adequate facilities can increase students' motivation to learn and improve their learning outcomes.

From a psychoanalytic perspective, students' learning environment can influence learning outcomes through psychological factors such as motivation, self-perception and self-confidence. Psychoanalytic theory suggests that the experiences students have in the learning environment can shape their mindset, motivation and behavior related to learning. A conducive and stimulating learning environment can help increase students' motivation and interest in learning. Factors such as facilities, interactive teaching and an interesting curriculum can influence students' motivation to learn. In addition, influences from teachers, peers and parents also play an important role in shaping students' perceptions and motivation towards learning. In addition, the learning environment can also influence students' self-perception and confidence related to their ability to learn. A supportive and caring learning environment can help boost students' confidence and reduce the anxiety and fear that often hinder their learning independence.

Psychoanalysis also emphasizes that students' past experiences, including experiences in the learning environment, can shape their mindset and behavior related to learning. Negative experiences such as pressure from parents or authoritarian teachers, as well as unpleasant learning environments, can reduce students' motivation and learning independence. Overall, students' learning environment affects learning outcomes from a psychoanalytic perspective through psychological factors such as motivation, self-perception and self-confidence. A supportive, stimulating and caring learning environment can help increase students' motivation and learning independence, as well as build positive self-perception and confidence in their ability to learn.

Conclusion

Based on the results of the research conducted and referring to the data that has been obtained by researchers, it can be concluded: Student learning outcomes in mathematics subjects are included in the low category, because the average score obtained by researchers for student learning outcomes in mathematics subjects is below the school kkm value in mathematics subjects. Student learning independence partially affects their learning outcomes. The student learning environment partially affects learning outcomes. Student learning independence and learning environment simultaneously affect student learning outcomes.

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