The Influence Of Student Motivation And Behavior On The Learning Outcomes Of Economic Mathematics Courses

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Abstract

The purpose of this study was to analyze the influence of student motivation and behavior on learning outcomes in economics mathematics. The initial understanding of this problem will greatly support the lecturers as educators in educating prospective teachers well. In addition, education observers can also use the results of this study as a reference material in increasing student motivation and behavior. This is the main attraction for researchers to conduct a deeper study of the influence of student motivation and behavior on learning outcomes in economic mathematics courses.

Specific targets to be achieved through this research are to determine the effect of student motivation and behavior on learning outcomes in economic mathematics courses, and to motivate students to the importance of taking this course in order to know the direction and purpose of the material provided online and off line so that can improve learning outcomes and add insight or knowledge in the field of economics.

The method used in this research is quantitative research methods to determine and describe the influence of student motivation and behavior on learning outcomes in economic mathematics courses.

The results of this study can be concluded that there is an influence between motivation and behavior with learning outcomes in economics mathematics, either partially or simultaneously. Thus, the results of a student's degree can be determined by how much motivation he has to learn and behave well.

Keywords: motivation, behavior, result study

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I. Introduction

Economic mathematics is an approach or method of solving economic problems using mathematical symbols and mathematical logic. Initially, economic mathematics was born from a small branch of economic theory until it was widely used by experts. This development was caused by economists sympathizing with neoclassical economics which represented economic theory with mathematical formulations. Lecture material in this research is conducted online. Thus, researchers can see the extent of student motivation and behavior to carry out the intended lecture activities. The motivation and behavior of these students can be used as benchmarks in assessing the competence of graduates of economic mathematics courses.

The competence of graduates in tertiary institutions is one of the minimum criteria components for the National Education Standards Law Number 20 of 2003 article 1 paragraph 17 concerning the National Education System. The quality of competence of graduates from a tertiary institution is strongly influenced by several components that support the intellectual development of the graduates during the educational process.

Piaget (Wilis, 1996: 157) suggests 5 factors that influence the intellectual development of students, namely maturity, physical experience, logico mathematical experience, social transmission and balance processes (equilibration) or the process of self-regulation (self-regulation).

The learning system applied in higher education directs students to be able to do learning independently. Schunk and Zimmerman (Arjanggi, 2010: 92) explain that independent learning has implications for the capacity and ability of students to self-regulate in the teaching and learning process. Zimmerman (Widawati, 2008: 189) argues that in the process of development, individuals need the ability to organize themselves in such a way that they can be used as a means of adaptation to any changes in their surroundings.

Suryabrata (Ilhamsyah, 2012: 19-22) explains that there are several factors that affect student learning achievement, which are divided into internal factors and external factors. Internal factors include physiological factors (physical) and psychological factors (intelligence, interests, talents, attention, motivation, maturity and readiness). External factors include social factors (family, school environment and community) as well as non-social factors. However, it is different from Boekaerts (Susanto, 2006: 65) states that, even though a student has a good level of intelligence, personality, home environment, and a school environment that supports him, but not supported by good self-regulation skills, the student will still not be able to achieve optimal performance.
Based on these conditions, the researchers assume that self-regulation factors play a role in the achievement of student learning achievement. Winne (Adicondro, 2011: 18) explains that self-regulation or self-regulation is the ability in a person to bring up and monitor his own thoughts, feelings and behavior to achieve a certain goal, in this case the learning goal. Zimmerman (Ghufron & Risnawita, 2010: 58) argues that self-management is related to self-awakening both thoughts, feelings and actions that are planned and the reciprocity that is adjusted to the achievement of personal goals. In this case the intended purpose is general, for example the purpose of learning. So it can be concluded that self-regulation referred to in this study is a person's ability to control his own behavior including motivation and behavior. Self-regulation plays an important role in achieving the learning goals of students, especially in subjects that are classified as difficult and require high analysis, for example mathematics. The characteristics of such mathematics lessons require an ability that can foster optimism and great fighting power in learning. In this case, optimism and fighting power are associated with Adversity Quotient (AQ). Stoltz (Sudarman, 2012: 56) explains that Adversity Quotient intelligence in overcoming difficulties. It further adds that a person's AQ can be increased. One of the efforts that can be made in increasing AQ is through self-awakening, both through thoughts, feelings and planned actions as well as feedback (evaluation) tailored to achieving goals.

Given the extent of problems related to motivation and behavior that affect student learning outcomes, this research is limited to aspects of motivation both external and internal and student behavior. This is based on the findings and facts in the field which indicate that student motivation and behavior greatly affect student learning outcomes.

Motivation is a very important element in the educational process and when someone carries out tasks in everyday life. A person's motivation can be seen or concluded from the existence of a steady effort, a tendency to work even though it is not under supervision, or a willingness to maintain voluntary activities towards the completion of a task (Ardhana, 1990). Motivation is usually defined as a process that stimulates a person's behavior or moves a person to action. It is motivation that makes a person act in a certain way (Arends, 2007). In another part, Pintrich (2003) sees that motivation comes from the Latin movere and refers to what makes individuals move towards certain activities and tasks. Motivation is also defined as the strength contained in an individual, which causes the individual to act or act (Uno, 2011: 3).

Winkel (1983: 27) defines motivation as the driving force that has become active, while learning motivation is the overall driving force within students that causes learning activities, which ensures the continuity of learning activities, and which gives direction to learning activities. Then the goals desired by students are achieved. Meanwhile, Aydin and Coskun (2011) define motivation as a force that drives behavior, where that power moves people to do or not do something in order to achieve certain goals. The motivation referred to here is the desire to succeed in achieving positive results in learning. Psychologists distinguish between two main types of motivation, namely intrinsic and extrinsic motivation. Brookhart & de Voge (2000) and Eggen & Kauchak (2007) assert that if behavior is driven internally by one’s own interest or desire or solely pure pleasure obtained from an experience, it is intrinsic motivation. Conversely, when individuals are influenced to act by external or environmental factors such as rewards, punishments, or social pressure, it is called extrinsic motivation. Every learning activity in the classroom, both intrinsic and extrinsic motivation, has an equally important role. Teachers can use both to achieve the desired learning behavior.

One of the most important types of motivation in educational psychology is achievement motivation (McClelland, 1969). Someone who has achievement motivation tends to try until he is successful and choose activities that lead to the achievement of goals. Students who have high achievement motivation will last longer on a task than students who lack low achievement motivation. In addition, students who have high achievement motivation also tend to attribute their failures to a lack of effort (internal factors but conditions can be changed). In addition, failure is not associated with external factors, such as task difficulty or luck.

II. Research Method

This research was conducted at the Mathematics Education Study Program, Teaching and Education Faculty, University of Nusa Cendana, Kupang. This research method is a quantitative method by distributing questionnaires and tests to respondents. The population of this study were all students who program Mathematics and Economics courses. Because the number of population is the same as the number of samples, the respondents also act as samples. The data analysis in this research is descriptive and statistical analysis to describe the results obtained from the data collection process related to learning motivation, student behavior and student learning outcomes taking online economic mathematics courses.
III. Result

Deskriptive Data
This research has been carried out in the Department / Study Program of Mathematics Education FKIP Undana. The subjects of this study were 33 mathematics education students who programmed economics mathematics courses. The data obtained during this study consisted of learning outcomes scores, questionnaire scores on learning motivation and student behavior. Overall data from the results of this study were processed with the help of SPSS.16.0.

To find out the average data after treatment, the data are grouped in order to conclude the difference in the average student learning outcomes.

Table 1. Average Result of Student Learning
Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Result</td>
<td>33</td>
<td>66.8182</td>
<td>7.98614</td>
<td>55.00</td>
<td>85.00</td>
</tr>
</tbody>
</table>

From the table above, it can be seen that the average student learning outcomes are 66.81, with a standard deviation of 7.98.

Data Analysis with Inferential Statistics
The data obtained in this study will be analyzed using SPSS software. The output obtained is used to interpret whether the data comes from a normally distributed population or not. The population normality test in this study used the Kolmogorov-Smirnov test. The method used to interpret the output of the Kolmogorov-Smirnov test analysis results is by the decision criteria if the probability value is greater than 0.05, the data population obtained is normally distributed, whereas if the probability value is less or less than 0.05, the data population will be obtained not normally distributed.

The results of the data normality analysis explain that the probability or significance value is greater than 0.05. (See the following Table 2)

Table 2 Data Normality
One-Sample Kolmogorov-Smirnov Test

<table>
<thead>
<tr>
<th></th>
<th>Perilaku Mahasiswa</th>
<th>Motivasi Belajar</th>
<th>Hasil Belajar</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>33</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Normal Parameters</td>
<td>Mean</td>
<td>155.0606</td>
<td>97.7879</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>38.77253</td>
<td>9.84491</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
<td>Absolute</td>
<td>.181</td>
<td>.138</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>.181</td>
<td>.138</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>-.119</td>
<td>-.135</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>1.038</td>
<td>.795</td>
<td>1.475</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.231</td>
<td>.552</td>
<td>.026</td>
</tr>
</tbody>
</table>

a. Test distribution is Normal.

From the table, it can be seen that the sig. or the probability is greater than 0.05, the data is normally distributed.

In addition, the results of data analysis showed a correlation between learning outcomes, learning motivation and student behavior. (See table 3)

Table 3. Corelation between Variables

<table>
<thead>
<tr>
<th></th>
<th>Student Learning Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>Student Behavior</td>
</tr>
<tr>
<td></td>
<td>Student Learning Motivation</td>
</tr>
</tbody>
</table>

From the table, it can be seen that 0.656 or 65.6% of learning outcomes correlate with student behavior and 0.903 or 90.3% learning outcomes correlate with student learning motivation. Meanwhile, the simultaneous
correlation was obtained of 0.911 or 91.1% of learning outcomes correlated with student motivation and behavior (See table 4).

### Table 4. Simultaneous correlation of independent variables and dependent variables

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.911</td>
<td>.831</td>
<td>.819</td>
<td>3.39314</td>
</tr>
</tbody>
</table>

b. Dependent Variable: Hasil Belajar Mahasiswa

From the table, it can be seen that simultaneously learning outcomes are influenced by learning motivation and student behavior by 0.911 or in other words that 91% of the learning outcomes obtained are influenced by learning motivation and student behavior.

**Hypothesis Test**

Hypothesis testing is a step or procedure to determine whether the hypothesis stated in the previous chapter is accepted or rejected. The assumption test or prerequisite test that has been described shows that the number of assumptions required for testing the hypothesis has been fulfilled. Thus, further analysis is feasible. For more details, see the following table.

### Table 5. Research Hypothesis Test ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>1695.507</td>
<td>2</td>
<td>847.754</td>
<td>73.632</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>345.402</td>
<td>30</td>
<td>11.513</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2040.909</td>
<td>32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Motivasi Belajar Mahasiswa, Perilaku Sosial Mahasiswa

b. Dependent Variable: Hasil Belajar Mahasiswa

From table 5 above, it can be seen that the value of $F_{count} = 73.632$ and a significance value of 0.00. This is smaller when compared to 0.05, it can be concluded that there is an effect of learning motivation and student behavior on the learning outcomes obtained.

**IV. Discussion**

**Effect of Learning Motivation on Student Learning Outcomes**

The results of this study indicate that there is an effect of learning motivation on learning outcomes obtained by students. The results of this study are appropriate and supported by previous researchers conducted by Sheeraz Ahmad Rather (2016), and Tella (2007). The results of research conducted by Sheeraz Ahmad Rather (2016) prove that the learning motivation category has an impact or influence on students' academic abilities, where academic ability has increased according to the learning motivation category. Students who have high learning motivation will have better academic abilities than students who have low learning motivation. Tella (2007) proved that students who have high learning motivation get better learning outcomes than students who have low learning motivation.

The results of this study indicate that there is an influence on the learning outcomes of students who have high learning motivation and students who have low learning motivation. This means that strong motivation in learners will increase interest, ability and high enthusiasm in learning, because between motivation and enthusiasm for learning has a close relationship. As stated by Schunk et. al (2008) motivation is able to overcome one's pressure and emphasize a goal. Motivation plays a very important role in learning, with this motivation students become diligent in the teaching and learning process, and with this motivation the quality of student learning outcomes can be realized properly. Students who are in the learning process have a strong motivation will persevere and succeed in their studies.

Slavin (2000) states that learning motivation is the desire to gain success in playing a role in activities and influencing the results obtained because one's success depends on effort and ability. These results indicate that learning motivation has a big role in learning. Motivation to learn in students will affect the formation of
student knowledge and skills so that it leads to an increase in expected learning outcomes. Students who have high learning motivation have better learning outcomes than students who have low learning motivation in both the experimental and control classes. This difference is influenced by differences in learning motivation that students have in learning. Students with high learning motivation have a high enthusiasm for following applied lessons. Meanwhile, students with low motivation tend to follow the learning as is and seem less enthusiastic in following every stage of the learning process that is applied.

Motivation that arises from within students will result in the formation of knowledge and skills that lead to increased learning outcomes. Students who have high learning motivation mean that they have a high desire to learn and they will be more actively involved in participating in learning. Conversely, students who have low learning motivation will appear passive in following learning. Students who have high learning motivation will have more collaborative relationships and interactions with lecturers and other students that allow the learning process to occur, so that it will have an impact on the higher student understanding of learning.

Motivation plays a role in determining learning reinforcement, clarifying learning objectives and determining learning persistence, so that learning motivation is important in the learning process, this is in line with Ardhana (1990), saying that motivation is a very important element in the learning process and carrying out tasks, in daily life. In the learning process, motivation has a very big role on learning outcomes because motivation can foster students' interest in learning. Students who have strong motivation will have the desire to carry out learning activities. So it is possible that students who have high enough intelligence fail due to lack of motivation, because learning outcomes will be optimal if there is the right motivation. For this reason, if students experience failure in learning, this is not solely the student's fault, but maybe the learners are not successful in arousing student motivation.

Motivation to learn as a condition that arises in students that can provide a driving force for learning and the appearance that students have learned from the learning process in class. Learning outcomes are largely determined by motivation, the more precise the motivation is given, the more successful the mastery of the subject matter is because motivation determines the intensity of the learner's efforts to be more active in learning. Motivation is an important aspect related to student academic performance, therefore this variable is considered as one of the factors. important that affects learning outcomes and the learning process in higher education.

Based on the findings of these studies, it shows that the level of motivation is very influential on the achievement of learning outcomes, the higher the student's learning motivation, the higher the learning outcomes. Motivation serves as a driving force in achieving learning outcomes, with diligent efforts based on motivation, students will be able to produce good learning outcomes.

Motivation is a force that encourages students to carry out learning activities. The difference in learning motivation in a lesson will have a significant effect on the learning outcomes they obtain, as the findings of this study. In learning activities, motivation as a driving force for attitudes and behavior to seek progress in learning and to pursue optimal achievement. Students who have high learning motivation have a desire to succeed, they work hard, never give up in realizing maximum learning outcomes.

The Influence Of Student Behavior on Student Learning Outcomes

Based on the results of data analysis, it is known that learning behavior affects learning outcomes of economic mathematics in students of the Mathematics Education Study Program, Faculty of Teacher Training and Education, University of Nusa Cendana, Kupang.

The results of hypothesis testing indicate that learning behavior affects learning outcomes. Where 63% of learning outcomes are influenced by student behavior. These results support Nugraha's (2013) research which proves that learning behavior has a significant positive effect on the level of accounting understanding. The level of understanding of student accounting at 17 August 1945 University Semarang is influenced by student behavior in class learning activities, the desire to deepen knowledge by reading supporting books in the library.

Rampengan in Hanifah and Abdullah (2001) states that in the learning process, learning behavior is needed in accordance with educational goals, where with this learning behavior educational goals can be achieved effectively and efficiently, so that academic achievement can be increased. Things that are related to good learning behavior can be seen from the habit of attending lessons, the habit of reading books, visits to the library and the habit of facing exams. Therefore, good learning behavior will lead to maximum understanding of the lesson. Conversely, the impact of bad learning behavior will lead to less than optimal understanding of subjects. Jayadi (2013) has conducted research on the effect of emotional intelligence and learning behavior on accounting understanding, the results of his research stated that learning behavior as measured by aspects of the habit of attending lessons, reading habits, visiting the library, and the habit of facing exams significantly affect accounting understanding.
Students as prospective teachers certainly must have the ability to organize themselves in every learning activity, in speaking or in communicating. This is closely related to self-regulation to behave in accordance with applicable rules and in social life. The learning system applied in higher education directs students to be able to do learning independently. Schunk and Zimmerman (Fadillah & Baist, 2017) explain that independent learning has implications for the capacity and ability of students to self-regulate in the teaching and learning process. Furthermore, Zimmerman argues that in the process of development, individuals need the ability to organize themselves in such a way that they can be used as a means of adaptation to any changes in their surroundings.

So it can be concluded that self-regulation is a person's ability to control his own behavior including motivation and behavior. Self-regulation plays an important role in achieving the learning goals of students, especially in subjects that are classified as difficult and require high analysis, for example, economics mathematics courses. The characteristics of economic mathematics lessons like that require an ability that can foster optimism and great fighting power in learning it. So that the results of this study prove that behavior affects student learning outcomes, especially in economic mathematics courses.

The Effect of Learning Motivation and Behavior on Student Learning Outcomes

Based on the results of data analysis, it is obtained that Fcount > Ftable with a significance level of less than 0.05 indicates that there is a significant influence between the independent variables (motivation and behavior) on the dependent variable (learning outcomes) of students in the economic mathematics course.

The influence of motivation and behavior as one of the supporting aspects of students’ intellectual development which is important to consider in the teaching and learning process in economic mathematics courses in particular and for other subjects in general. Learning behavior while in college also affects a student’s academic achievement. Student learning habits or behavior are closely related to the good use of time for studying and other activities. Hanifah and Syukry (2001: 67) argue that efficient learning can be achieved if you use the right strategy, namely the existence of good time management in attending lectures, studying at home, in groups or for taking exams. Good learning behavior can be realized if students are aware of their responsibilities as students, so that they can divide their time well between studying and activities outside of learning. Motivation and self-discipline are very important in this case because motivation is the direction for the achievement to be obtained and discipline is a feeling of being obedient and obedient to the values that are believed and doing the job properly if it is felt it is a responsibility.

Student learning behavior while in college affects student learning outcomes in Economics Mathematics courses. However, in Indonesia, the ongoing learning process in general cannot be viewed as an independent learning process (Suwardjono, 2004: 7). The lecturer determines what sources of knowledge the student needs to learn in the form of a syllabus or study program, then the students undergo the learning program, and the lecturer controls the student learning process. For this reason, the level of student learning outcomes will be seen from the motivation and behavior of student independent learning that has taken place. Through student learning outcomes in the Mathematical Economics course, it can be seen how much economic mathematics a student already has in order to carry out his professional role as a teacher as well as an entrepreneur in the world of work.

The sign of a student understanding economic mathematics is not only shown from the grades obtained in the course but also if the student understands and can master the related concepts that exist. Therefore, higher education is responsible for developing the skills of its students for careers in an environment that is always changing and tight with competition. Thus, the motivation and behavior of these students greatly influence the learning outcomes obtained by students.

V. Conclusion

Based on the results of this study, it can be concluded that there is an influence between motivation and behavior with the learning outcomes of economic mathematics courses either partially or simultaneously. Thus, the results of a student's degree can be determined by how much motivation he has to learn and behave well.

References

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