Analysis of the Relationship between Interest and Learning Independence with High School Students' Biology Learning Outcomes

Syifana Rahmah¹, Ria Yulia Gloria², Laita Nurjannah³

Abstract
This research aims to determine the relationship between interest in learning and learning independence with students' biology learning outcomes. This research uses a quantitative approach to analyze data. The research population was students of the MIPA MAN 2 Kuningan class for the 2021/2022 academic year with a sample of 98 students using a purposive sampling technique. Instruments for collecting data use questionnaires and documentation. This research data was analyzed using descriptive and inferential statistical techniques. The research results concluded that 1) the relationship between interest in learning and biology learning outcomes has a significant and positive relationship, with a correlation contribution in the weak category, namely 5.4%. 2) the relationship between learning independence and biology learning outcomes has a significant and positive relationship, with a correlation contribution in the weak category, namely 11.4%.

Keywords: Interest in Learning, Independence in Learning, Learning Results

A. Introduction
Education is a planned effort to create a learning atmosphere and learning process so that students can actively develop their potential for religious mental strength, self-control, personality, wisdom, noble qualities and skills that are needed by themselves and the general public (Rozikin, 2018). To fulfill educational goals, learning is carried out. Dimyati (2016) states that learning is an effort made to deliberately involve and use the professional knowledge possessed by teachers with the aim of achieving educational goals. One indicator to see the achievement of educational goals can be seen from the level of learning difficulties experienced by students during learning activities. Every difficulty felt by students can be observed in learning activities, because the readiness of each student in studying material has an impact on the achievement of learning outcomes.

One of the subjects at high school level is Biology. The essence of biology is not only theory, remembering and understanding concepts, but also the process of application, even discovery, so that in learning students must actively interact with certain objects (Chania, 2016). Biology material contains many Latin terms so students often feel bored studying. Some students even find lessons difficult because there is too much material to memorize, especially Latin. When learning takes place in the classroom, most students just sit quietly and listen to the teacher explaining and seem less enthusiastic about learning (Rizal, 2015).

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Learning is a process of changing attitudes accompanied by a series of activities, for example reading, observing, listening, imitating and so on (Wulan, 2018; Prastika, 2020). Therefore, learning is also a change that includes permanent changes in knowledge, understanding, skills and attitudes. According to Nurmayani (2018), learning is a long and complicated process and requires continuous effort and energy. According to Handayani (2021), learning outcomes are a form of change in both the knowledge aspect and the attitude aspect obtained after experiencing the learning process. Susanto (2013), states that student learning outcomes are influenced by two factors, namely, internal factors and external factors. Internal factors include students' thinking abilities, motivation, interests and readiness, both physically and spiritually. External factors include infrastructure that supports learning activities, teacher competence, teacher creativity, learning resources, methods and support from the environment.

One of the important things that can influence student learning outcomes is student characteristics. One of the characteristics of students that can influence learning outcomes is interest in learning. In teaching and learning activities, students who have an interest in certain subjects will show their character, who tend to be seen to continuously pay attention to the learning process (Islamiah, 2019). According to Silfitrah (2020), interest is a feeling of preference and interest in something or activity voluntarily without anyone telling you to. Based on several opinions, it can be concluded that interest is the tendency of each person to be able to have a feeling of pleasure without any coercion so that it can result in changes in knowledge, skills and behavior. Gloria's research (2016) found that interest in studying science, especially biology, was influenced by learning strategies, one of which was effective was integrating biology material with Islamic material.

Learning independence is a factor other than interest in learning that has a role in influencing student learning outcomes. Nahdiyati (2016), states that students' learning independence can be known from several indicators, namely initiative, self-confidence, responsibility, motivation and discipline. According to Astuti (2015), states that there are several indicators of learning independence, namely having confidence in one's own abilities, learning activities are predominantly carried out by oneself, having a sense of responsibility. Interest in learning is also related to intelligent thinking habits or Habits of Mind (Gloria, et al., 2017).

The results of previous observations were based on data from interviews with biology subject teachers at one of the top level schools in West Java, Indonesia. The most important problem was that students' biology learning results were less than optimal, so that in the end remedial measures had to be carried out to improve the results. student learning. The fact obtained by researchers is that research has never been conducted regarding students' interest and independence in learning. Apart from that, information was also obtained that there are still some students who feel that biology is a difficult subject, this is because they have to memorize theories and concepts in Latin.

Students' interest in learning has a supporting role in achieving learning objectives. Students who have the characteristics of a high interest in learning are expected to continue studying diligently so that it will result in improvements in their biology learning outcomes. Based on the results of observations in the field, it is known that each student's interest in learning is at different levels. This can be seen during learning activities, there are students who pay good attention to the teacher's explanations, but there are also those who choose to chat with their classmates rather than pay attention to the explanations given by the teacher. Apart from that,
there are students who are active in asking about things they don't understand and there are also students who rarely ask the teacher either during class or outside class hours.

Factors that influence learning outcomes other than students’ interest in learning are learning independence. Students who have high learning independence are expected to be able to study well so as to improve their biology learning outcomes. The results of observations show that the level of learning independence for each student is at different levels. This can be seen during learning activities where when given homework, there are students who can do it well and there are also students who do the homework at school by copying their friends’ work. If a teacher gives a written test, there are students who are able to do the questions themselves well and there are also students who copy their friends’ answers. Therefore, the aim of this research is to determine the relationship between students' learning interest and learning independence and students’ biology learning outcomes. So the results of this research can be a reference to determine the level of interest and independence of each student and can be used as a reference by teachers to increase interest and independence in learning for students.

B. Methods

This research uses survey research and is correlational in nature. Survey research is research conducted on large or small populations, but the data studied is data from samples taken from that population, so that relative events, distributions and relationships between sociological and psychological variables will be obtained (Sugiyono, 2018). This research uses survey research methods and correlational techniques because this research investigates the relationship between several research variables. The research variables consist of two independent variables, namely learning interest (X1) and learning independence (X2) and one dependent variable, namely biology learning outcomes (Y).

The population in this study were all MIPA class students at one of the high schools in Kuningan, West Java in the 2021/2022 academic year, totaling 361 students. The sampling technique in this research is purposive sampling. This sampling technique was carried out based on the results of observations of the researcher’s assessment of the relevance of potential respondents to answering statements in the research questionnaire. In this study, the sample was 98 students from 3 classes.

The instruments used in this research were questionnaires and documents regarding learning outcomes. The questionnaire instrument is a questionnaire for collecting data on learning interest and learning independence. Data on student learning outcomes was obtained from report cards for semester 2 of the 2021/2022 academic year. The collected data was analyzed using descriptive and inferential statistical analysis with the normality test and Pearson product moment correlation test using the SPSS version 20 program.

C. Findings and Discussion

The data obtained regarding learning interest, learning independence, and Biology learning result were tested for normality. Before the data is tested statistically, a prerequisite test is first carried out. The prerequisite test carried out is the normality test. In this study, researchers used a data normality test regarding the relationship between students' learning interest and learning independence and biology learning outcomes. The normality test used by researchers is the Kolmogorov Smirnov test and the test uses SPSS version 20. The criterion for normality of
research data is that if the significance value is greater than 0.005 then the data can be said to be normally distributed (Sugiono, 2018). Based on the normality test in Table 1 above, it is known that the significance value of each variable includes the learning interest variable of 0.509, the learning independence variable of 0.683, and the biology learning outcome variable of 0.283. Based on the value of each variable which shows a value greater than 0.05. So it can be concluded that each variable is declared to have a normal distribution. The results of the normality test are presented in Table 1.

Table 1. Normality Test of Learning Interest, Learning Independence, and Biology Learning Results

<table>
<thead>
<tr>
<th>Normality Test</th>
<th>Sig. value</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Interest</td>
<td>0.509</td>
<td>Normally Distributed</td>
</tr>
<tr>
<td>Learning Independence</td>
<td>0.683</td>
<td>Normally Distributed</td>
</tr>
<tr>
<td>Biology Learning result</td>
<td>0.283</td>
<td>Normally Distributed</td>
</tr>
</tbody>
</table>

One of the characteristics of students that can influence learning outcomes is interest in learning. In teaching and learning activities, students who have an interest in certain subjects will show their character, who tend to be seen to continuously pay attention to the learning process (Islamiah, 2019). According to Silfitrah (2020), interest is a feeling of preference and interest in a thing or activity, without anyone telling you to. Based on the opinions above, it can be concluded that interest is the tendency of every person to be able to have a feeling of pleasure without any coercion so that it can result in changes in knowledge, skills and behavior. The results of the analysis of descriptions of students’ interest in learning biology, including the distribution of percentages and categories, are presented in Table 2.

Table 2. Categories of Interest in Learning Biology for Class XI MIPA Students

<table>
<thead>
<tr>
<th>Category</th>
<th>Intervals</th>
<th>frequency</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hight</td>
<td>&gt;66</td>
<td>15</td>
<td>15.31%</td>
</tr>
<tr>
<td>Midle</td>
<td>51-65</td>
<td>70</td>
<td>71.43%</td>
</tr>
<tr>
<td>Low</td>
<td>&lt;52</td>
<td>13</td>
<td>13.27%</td>
</tr>
</tbody>
</table>

The results of the analysis of descriptions of learning interest consisting of 98 respondents illustrate that students’ interest in learning biology based on the categorization of learning interest variables is in the sufficient category, reaching 71.43%. Student interest in learning is an important asset to support the achievement of learning goals which can be seen from learning outcomes. Each individual student has a different level of interest in learning.

Students who have an interest in learning tend to show characteristics including having a tendency to feel interested and happy to learn, always actively participating in learning activities, having a tendency to pay attention and having great concentration power, feeling comfortable when studying, having the capacity to make related decisions, with the learning process carried out (Yunitasari, 2020). Furthermore, for each percentage of the sub-variable student interest in learning can be seen in Figure 1.
Based on Figure 1, it shows the percentage of each indicator on interest in learning, namely, feeling happy in learning is 17%, interest in learning is 15%, attention in learning is 23%, student involvement in learning is 26%, and active learning is 19%.

According to Ricardo (2017), high involvement and attention in the learning process is an indicator that can influence students' interest in learning. Student involvement in the learning process makes it easier for students to understand the concepts of explanations given by the teacher. Developing interest in a subject basically aims to help students accept the material presented by educators so that predetermined learning goals can be achieved. Students who are interested in learning tend to be serious about learning, whereas students who are less interested in learning tend not to follow the learning process well. The importance of interest in learning in the learning process needs to be considered by all parties involved in the educational process. Efforts to increase interest in learning can be associated with feelings of joy, student interest, attention, and student involvement (Sulistyan, at al., 2016). Learning independence is an important factor besides interest in learning which has a role in influencing student learning outcomes. According to Nahdiyati (2016), students' learning independence can be known from several indicators, namely initiative, self-confidence, responsibility, motivation and discipline. Meanwhile, according to Astuti (2015), there are several indicators of learning independence, namely having confidence in one's own abilities, learning activities are predominantly carried out by oneself, and having a sense of responsibility.

Learning independence is a skill possessed by students to be able to carry out individual learning activities based on their own wishes. Learning independence is an effort to understand material in a subject so that it can be used as an alternative to solving the problems faced (Amalia et al., 2018). The results of the descriptive analysis of student learning independence which includes the distribution of numbers, percentages and categories are presented in Table 3.

<table>
<thead>
<tr>
<th>Category</th>
<th>Intervals</th>
<th>Frequency</th>
<th>Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>&gt;48</td>
<td>19</td>
<td>19.4%</td>
</tr>
<tr>
<td>Midle</td>
<td>40-47</td>
<td>60</td>
<td>61.2%</td>
</tr>
<tr>
<td>Low</td>
<td>&lt;39</td>
<td>19</td>
<td>19.4%</td>
</tr>
</tbody>
</table>
The results of the analysis of learning independence with 98 respondents were the biology learning independence of class less with a frequency of 19 respondents (19.4%). Learning independence is in the sufficient category, reaching 61.2%. Student learning independence is an important asset to be able to support the achievement of learning goals which can be seen from learning outcomes. Each individual student has a different level of learning independence.

Students who have independent learning tend to show characteristics such as self-directing learning activities, being critical and creating lots of questions in learning activities, not completely dependent on the teacher, preferring to solve problems rather than just focusing on explaining the material, being more active in participate in a discussion, be able to evaluate learning outcomes, understand one's own weaknesses and strengths as a student in completing certain tasks, and have a targeted strategy for solving every problem (Tahar, 2010). The independence possessed by each student is independence which aims to foster a sense of self-confidence which is very important for each student (Diniyah, 2018). Furthermore, for each percentage of the student learning independence indicator can be seen in Figure 2.

Based on the diagram above, it shows the percentage of each indicator on learning independence, namely being active in learning has a percentage of 15%, not depending on other people has a percentage of 23%, having a sense of self-confidence has a percentage of 22%, having a sense of responsibility has a percentage of 14%, behaving based on one's own initiative has a percentage of 11%, and having discipline in learning has a percentage of 15%. So if you add them all together they will produce a percentage of 100%. According to Amalia (2018), not depending on other people in the learning process is an indicator that can influence student learning independence. Not depending on other people in the learning process makes students accustomed to thinking critically and being able to learn to analyze their own learning material, so that this will be a useful added value as a provision for solving the problems they face. Developing independent learning in a subject basically aims to help students accept and gain understanding of the material taught in various ways that can be done independently and not only depend on what is given by the teacher so that predetermined learning goals can be achieved.

Based on the indicators that have been researched regarding student interest and learning independence and student learning outcomes, researchers conducted a correlation test to determine the relationship between learning interest and learning outcomes and learning independence and
learning outcomes. The results of inferential analysis to determine the relationship between each independent variable and the dependent variable are presented in Table 4.

**Table 4.** Correlation between interest in learning, learning independence with Biology learning outcomes

<table>
<thead>
<tr>
<th>Correlation analysis</th>
<th>R value</th>
<th>Fd value</th>
<th>Sig. value</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interested in learning – Biology learning outcomes</td>
<td>0.233</td>
<td>0.054</td>
<td>0.021</td>
<td>Correlated</td>
</tr>
<tr>
<td>Learning independence – Biology learning outcomes</td>
<td>0.338</td>
<td>0.114</td>
<td>0.001</td>
<td>Correlated</td>
</tr>
</tbody>
</table>

The results of the analysis of the relationship between interest in learning and biology learning outcomes obtained a correlation value (r) of 0.233, the relationship between these two variables is in the weak category. The real relationship between interest in learning and biology learning outcomes is marked by a significance value of 0.021. The frequency of determination (Fd) value is 0.054, this means that students' interest in learning contributes 5.4% to students' biology learning outcomes. According to Nurlia (2017) Interest is a trait that is relatively persistent in a person. In carrying out its function, interest is closely related to thoughts and feelings.

Feelings or emotions are processed in a part of the brain called the limbic system. When the limbic cortex receives a stimulus or stimulus, a series of processes that regulate the emergence of feelings in a person begin. When we start to be interested in an object, the hypothalamus will release dopamine into the body (a neuropeptide which is responsible for controlling human feelings). The results of this research are the same as the results of research conducted by Aprijal (2020) which states that interest in learning is related or related to learning outcomes. This is also in accordance with Reski's (2021) theory which states that interest in learning influences learning outcomes.

In general, the research results show that there is a relationship between interest in learning and learning outcomes, and there is no gap with the results of previous research. The weak relationship between interest in learning and biology learning outcomes shown in the results of this research does not mean that interest is an unimportant factor in supporting learning outcomes, but that interest in learning also needs to be supported by other factors that influence student learning outcomes to be able to create results desired learning in accordance with the learning objectives.

The results of the analysis of the relationship between learning independence and biology learning outcomes obtained a correlation coefficient (r) of 0.338. So it is known that the relationship between these two variables is in the weak category. The real relationship between learning independence and biology learning outcomes is marked with a significance value of 0.001. The determination frequency value is 0.114, meaning that student learning independence contributes 11.4%. On students' biology learning outcomes. A student can be said to have learning independence if he has his own will to learn, is able to solve problems, has responsibility and has self-confidence in every learning process. Learning independence can be seen or addressed by students in daily learning activities, such as how students plan and carry out learning (Aini, 2012). Independence in learning is a factor that influences student learning outcomes. Students with high learning independence will try to complete the tasks given by the teacher, while students with low learning independence will depend on other people (Fitriana,
The results of this research are the same as the results of research conducted by Indah et al., (2021), which states that learning independence is related or related to learning outcomes. The results of this research are the same as the results of research conducted by Nurrahmah, et al (2016) that learning independence is related to learning outcomes, and is in accordance with the theory which states that there is a relationship between learning independence and learning outcomes. Based on the research results, the researcher concluded that there is a relationship between learning independence and learning outcomes and there is no gap between theory, previous research results and the results of research conducted by researchers, so that the results of research conducted by this researcher can strengthen theory and previous research.

D. Conclusion

Based on the results of the research and discussion that have been described, the researcher can draw conclusions: 1) the relationship between interest in learning and students' biology learning outcomes has a significant correlation and is positive with a significant value of 0.021<0.05. Having a correlation coefficient value of 0.233 which is in the weak category with a coefficient of determination of 0.054 means that interest in learning only has a 5.4% influence on biology learning outcomes, 2) The relationship between learning independence and students' biology learning outcomes has a significant correlation and is positive with a significant value of 0.001 <0.05. Having a correlation coefficient value of 0.338 which is in the weak category with a determination coefficient of 0.114 means that independent learning only has an influence of 11.4% on biology learning outcomes.

References


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Media Group.

