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The Relationship between Learning Motivation and Learning Outcomes of Grade XI Science Students at Public High School 1 Payakumbuh

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Abstract: This study aims to determine the relationship between students' learning motivation and learning outcomes in biology among Grade XI science student at Public High School 1 Payakumbuh. This research employed a descriptive design using a quantitative research method. The study was conducted at Public High School 1 Payakumbuhwith a population of 287 Grade XI science students enrolled in the odd semester of the 2022/2023 academic year, from which a sample of 167 students was selected. The sampling technique used was probability sampling, carried out randomly with a 5% margin of error. Data were collected using a questionnaire containing statements related to students' learning motivation in biology learning, measured using a Likert scale, as well as documentation of students' biology scores from the final examination of the odd semester of the 2022/2023 academic year. The results of the Pearson product–moment correlation test showed a value of 0.977 for intrinsic motivation and 0.976 for extrinsic motivation, indicating that there is a relationship between learning motivation and biology learning outcomes of Grade XI science student at Public High. The results of the t-test revealed a t-value of 6.549 for intrinsic motivation and 7.138 for extrinsic motivation, indicating that the relationship is statistically significant. The coefficient of determination for intrinsic motivation was 96%, while for extrinsic motivation it was 25%, indicating that intrinsic motivation (X1) and extrinsic motivation contribute to the biology learning outcomesof Grade XI science student at Public High School 1 Payakumbuh
Keywords: Relationship, Motivation, Biology learning outcomes, Science Student

Introduction

Education is an integral part of human life. The development of education is one of the most important keys to the growth and progress of a nation. The current educational phenomenon in Indonesia is still in a stage of development; therefore, the quality of education must be improved so that Indonesian society can progress toward a better direction. Educational improvement is an effort to enhance the quality of learning at a particular level of education. Education is expected to be able to create future generations who possess a harmonious integration of various values, including intellectual values, religious values, social ethics, and national character values.The learning process must be focused on contexts and experiences that engage students, fostering interest and active participation in learning activities. Biology learning is a scientific discipline in which truth can be verified through systematic studies of nature involving the use of the senses. Biology learning is not merely concerned with knowledge in the form of facts, concepts, and principles, but also emphasizes the process of discovery. Therefore, biology instruction should emphasize direct experiences to develop students' skills, enabling them to study the natural environment in an authentic manner (Mastika et al., 2014).Students' learning motivation is one of the determining factors in improving learning outcomes. Students who are motivated to learn are more likely to achieve high learning outcomes (Hamdu & Agustina, 2019). Conversely, students who lack learning motivation tend to obtain lower learning outcomes. Students with strong learning motivation will make every effort to achieve good academic results (Damopolii et al., 2018).

Highly motivated students are characterized by persistence, diligence, and resilience; they actively strive to improve their learning outcomes, such as by consistently reading and studying learning materials. In contrast, students with low learning motivation tend to show a lack of seriousness in completing assignments, give up easily, pay little attention during lessons, frequently disturb their peers, and often sleep in class. As a result, these students experience learning difficulties and achieve lower learning outcomes (Rahmat & Helendra, 2022).

Students' success in education can be observed through their learning outcomes (Salsa et al., 2022). In line with this view, Irsyad et al. (2020) state that the level of students' success in education can be determined through measurements of the learning outcomes obtained after the learning process. Therefore, learning outcomes are influenced by the learning motivation possessed by each student. This is consistent with the

findings of Damopolii et al. (2018), who state that learning outcomes are related to motivation. Students tend to achieve good learning outcomes when they possess strong intrinsic motivation.

Research Objectives

The objectives of this study are as follows:

1. To determine and describe the relationship between intrinsic learning motivation and students' learning outcomes in biology among Grade XI science-track students at Public High School 1Payakumbuh.
2. To determine and describe the relationship between extrinsic learning motivation and students' learning outcomes in biology among Grade XI science-track (MIPA) students at Public High School 1 Payakumbuh.

Literature Review

According to Arfani (2016), learning is an effort to acquire intelligence or knowledge, to practice, and to change behavior or responses as a result of experience. Learning is also defined as an activity aimed at enhancing personal development through experience, based on an individual's ability to learn under the guidance of a teacher. Fundamentally, learning is a series of core activities in the educational process at school. This can be understood because the success or failure of educational objectives largely depends on how the learning process itself is carried out. Therefore, the learning process has always been a primary focus, particularly for education experts. However, in a broader sense, learning is not only defined as a process that occurs in schools between teachers and students, but also includes all experiences in life that enable individuals to move from a state of not knowing to knowing, from being unable to being able, and so forth.

Motivation is derived from the word *"motive,"* which refers to an effort or drive that causes an individual to act in order to achieve certain goals (Lomu & Widodo, 2018). Motivation is defined as the totality of internal drives within an individual that can direct the learning process so that the expected objectives can be achieved (Masni, 2015). According to Hidayati et al. (2022), individuals with high motivation possess strong reasons for engaging in the actions they desire. Motivation arises when individuals have the willingness, opportunities, and skills to act. Motivation plays a very important role because it can enhance achievement and contribute to the development of each individual's abilities.The learning process is strongly influenced by students' learning motivation. Educators must provide encouragement to students in learning in order to achieve instructional goals. According to Emda (2017), motivation has three main functions, namely:

1. Motivation encourages individuals to perform actions; thus, motivation serves as the driving force behind every action undertaken.
2. Motivation determines the direction of actions to be achieved. In this sense, motivation guides individuals toward actions that are aligned with the formulated objectives.
3. Motivation selects actions, meaning it determines which actions should be carried out in order to achieve the intended goals.

Many factors determine students' success in learning, one of which is learning motivation. Each student possesses a different level and type of motivation, which results in varied impacts on the learning process. These differences are influenced by the diverse needs of individual students during learning activities. Such variations in learning motivation present a challenge that must be understood by educators, requiring them to identify appropriate solutions to address these differences.

According to Muhammad (2016), learning outcomes can be identified after students undergo learning experiences and exhibit changes in behavior. The changes that occur in students as a result of learning experiences are referred to as learning outcomes. In this regard, learning outcomes represent the transformations experienced by students after engaging in learning activities. To determine whether students have mastered the learning material, assessments are conducted with the purpose of measuring students' learning outcomes.

Research Results

Based on the data obtained, the results of the study on the relationship between learning motivation and biology learning outcomes of Grade XI science-track students at at Public High School 1Payakumbuhare presented. The total population of Grade XI students at Public High School 1Payakumbuhconsisted of 287 students, from which 167 students were selected as the research sample. Each respondent who participated as a sample in this study completed a learning motivation questionnaire (X), which consisted of intrinsic motivation (X1) and extrinsic motivation (X2). Data on students' biology learning outcomes (Y) were obtained from the final examination scores of the odd semester of the 2022/2023 academic year.The collected data were analyzed through several statistical tests, including the validity test of the learning motivation questionnaire in biology learning (Appendix 15, page 212), reliability test (Appendix 17, page 215), descriptive analysis test (Appendix

18, page 216), normality test (Appendix 19, page 222), homogeneity test (Appendix 20, page 223), and correlation test (Appendix 21, page 224), which are described as follows:

Conclusion

Based on the data analysis and research findings, it can be concluded that there is a significant relationship between intrinsic motivation and extrinsic motivation and the biology learning outcomes of Grade XI science-track students at atPublic High School 1Payakumbuh. The correlation coefficient for intrinsic motivation (X1) was 0.978, while the correlation coefficient for extrinsic motivation (X2) was 0.502. The results of the t-test showed that intrinsic motivation had a calculated t-value of 6.549, which was greater than the t-table value of 1.654, while extrinsic motivation had a calculated t-value of 7.138, which was also greater than the t-table value of 1.654. The coefficient of determination for intrinsic motivation (X1) was 96%, and for extrinsic motivation (X2) was 25%. This indicates that 96% of intrinsic motivation and 25% of extrinsic motivation contribute to the biology learning outcomes (Y) of Grade XI MIPA students at atPublic High School 1 Payakumbuh.

Recommendations

Based on the results, discussion, and conclusions of this study, the following recommendations are proposed:

1. The findings of this study are expected to serve as a reference for schools in evaluating the implementation of the learning process in order to enhance students' learning motivation.
2. For readers, this study is expected to be used as an additional reference for examining similar issues related to the relationship between learning motivation and students' learning outcomes in biology.
3. The researcher acknowledges that further and more in-depth investigations are needed in future studies regarding the relationship between learning motivation and biology learning outcomes.

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