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Understanding Contextual Strategies and Engaging Learning from SMA NW Kopang Biology Teacher to Enhance Student Motivation

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Abstract: Challenges in learning biology often arise, especially due to the complex nature of the material and requires a deep understanding of interrelated concepts. This causes many students to experience decreased motivation. The biology teacher of SMA NW Kopang keeps students motivated in learning. This study aims to understand the strategies applied by biology teachers at SMA NW Kopang in increasing students' learning motivation. This research uses a qualitative approach with the methods of observation, in-depth interviews, and document analysis. The selected one teacher was Mrs. Misnatussolihat, eight students were selected based on their varying levels of motivation to learn and their engagement in biology class. The research findings show that teachers use various strategies such as contextual learning, the use of educational technology, personalised approaches, as well as the insertion of ice breaking and rewards to create an interactive and relevant learning atmosphere. In addition, the integration of Islamic values in biology learning provides a moral dimension that strengthens the relationship between science and student character. Internal factors such as student interest and confidence, as well as external factors such as teacher support and learning environment, were found to have a significant influence on learning motivation. These strategies not only help students understand complex biological material, but also encourage their active involvement in learning. This research contributes to the development of learning methods that are innovative and relevant to students' needs, particularly in Islamic-based schools. Further research is recommended to explore the long-term impact of these strategies on students' learning outcomes across different educational contexts.

Keywords: Learning Motivation, Biology Learning, Teacher Strategy, Islamic Values

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Introduction

Biology learning has an important role in building students' understanding of the basic concepts of life, from the structure and function of living things to their interactions with the environment (María et al., 2019). As one of the core subjects in secondary education, biology contributes greatly to the development of students' critical and scientific thinking skills (Daryanes & Sayuti, 2023; Jamil et al., 2024). However, challenges in learning biology often arise, mainly due to the complex nature of the material, which requires a deep understanding of interrelated concepts. Research by Hadiprayitno et al., (2019) revealed that students face difficulties in learning biology due to the complexity of the topics and their learning habits.

One of the main factors leading to decreased student motivation in learning biology is their difficulty in remembering and understanding knowledge related to the structure, function, components, and interactions in living things and their environment (Husna et al., 2023). Based on initial observations at SMA NW Kopang, materials such as body anatomy, metabolic processes, and ecosystems are often considered abstract and difficult to understand. This causes students to feel less confident, lose motivation, and ultimately has an impact on their low learning outcomes. Akbari & Sahibzada (2020) dan Amalia et al., (2022) explained that low self-confidence in students can lead to decreased participation, reduced interest in lessons, and increased anxiety, affecting their learning outcomes.

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To overcome these problems, an innovative learning strategy is needed that suits students' needs. Several studies have shown that experiential learning strategies, such as project-based learning and contextual teaching and learning, can increase students' motivation to learn. Susanti et al., (2022) research found that interactive digital books based on project-based learning can increase student learning motivation by 96.37% in biology courses. Research by Jannah et al., (2023) showed project-based learning can increase student engagement and motivation in learning biology by 4% and 11%, respectively. In addition, research by Laenggeng (2018) demonstrated that the contextual teaching-learning approach positively affects students' motivation and thinking skills in biology, leading to better learning outcomes. This strategy emphasizes students' active involvement in the learning process, connects learning materials with real situations, and provides opportunities for students to explore and discover knowledge independently. Approaches that incorporate visual media, simulations, and interactive aids can also help students understand difficult concepts and increase their motivation to learn.

Some previous studies have analysed to understand teachers‘strategies in increasing students’ motivation in learning biology. Research by Sukimarwati (2019) shows that teachers can choose strategies to increase students' biology learning motivation using inquiry learning design. Research by Lelea et al., (2023) concluded that the Outing class activities strategy has a good impact on increasing student motivation, which in turn can improve their cognitive scores. Research by Jhon et al., (2023) explained that the teacher's strategy used was to increase the teacher's role as a motivator in the classroom. In addition, Tafonao et al.,(2024) revealed that teachers must often provide challenging tasks and rewards if the task is successfully completed by students. So that after that it will increase student motivation. The results of these studies are certainly not directly successful if applied in other schools that have different student characters and material complexity, especially in Islamic schools.

Based on the observation, SMA NW Kopang, a private Islamic school, is unique in its approach to learning, particularly in biology, which must be integrated with Islamic values. This integration adds complexity to the learning process, as teachers are not only required to deliver academic material but also to ensure that Islamic values become an integral part of the curriculum. This presents an additional challenge for teachers in designing effective teaching strategies that are relevant to students' contexts and that enhance student motivation.

To date, there has been no research in Lombok, West Nusa Tenggara, specifically addressing how teachers' strategies for teaching biology can be adapted to the context of Islamic values and can increase student motivation. Therefore, this study aims to understand the strategies employed by teachers to enhance students' motivation to learn biology at SMA NW Kopang. By exploring effective teaching practices, this research is expected to contribute significantly to broadening insights into biology learning approaches that not only focus on academic achievement but also emphasize character development based on religious values.

Methods

This study used a qualitative approach to explore the strategies applied by teachers in increasing motivation to learn Biology at SMA NW Kopang. This approach was chosen because it is able to provide a holistic picture of the teaching context, including the nuances of complex classroom interactions and dynamics (Nassaji, 2015). Qualitative methods are interpretative and flexible, allowing researchers to obtain data that is relevant to field conditions through in-depth interpretation (Sugiyono, 2019). The qualitative approach used in this research is in accordance with the case study type. This type was chosen because the research focuses on an in-depth exploration of biology teachers‘strategies at SMA NW Kopang in increasing students’ learning motivation, which is a specific phenomenon in one particular location and context, namely a private Islamic school.

The research design involved three main techniques: learning document analysis, classroom observation, and interviews with Biology teachers. Observations were conducted to directly observe teachers' teaching practices, thus providing authentic data about the teaching process (Turner et al., 2015). In-depth interviews with teachers were designed to explore information about teaching strategies, challenges faced, and their influence on student learning motivation. In addition, lesson plan documents were analysed to understand the framework and curriculum principles on which Biology teaching is based. The object of this study is the teaching strategies used by teachers to increase student learning motivation, while the subjects include Biology teachers and students involved in learning at SMA NW Kopang. The selection of subjects was done through purposive sampling technique, which ensured the participation of teachers and students relevant to the research objectives. The selected one teacher was Mrs. Misnatussolihat, eight students were selected based on their varying levels of motivation to learn and their engagement in biology class.

The data obtained was analysed using the inductive thinking method, which includes the stages of data reduction, data presentation, and conclusion drawing. The analysis process focused on identifying patterns, grouping teaching strategies, and the constraints faced. Integration of data from various sources was carried out to reveal the main findings, including the teaching process applied by teachers, factors that influence students' learning motivation, and the impact of teaching strategies on Biology learning.

Results and Discussion

Biology Learning Activity Process at SMA NW Kopang

The biology learning process at SMA NW Kopang is designed systematically, including introductory, core, and closing activities. The introductory activity serves as the first step to build students' learning readiness. Teachers use strategies to attract students' attention by linking the subject matter with current conditions. When discussing ecosystems, the teacher starts with a discussion on current environmental issues, such as climate change or pollution. This approach aims to build relevance between the biology material and students' daily lives, thus increasing their curiosity. Klionsky (2017) explained that building relevance between biology material and students' daily lives promotes an interest in learning and increases the likelihood of students remembering the information.

In core activities, teachers implement contextual learning strategies to help students grasp abstract concepts. Tanjung et al., (2022) noted that utilizing technology-based tools, like learning videos, can enhance students' understanding of ecosystems. Teachers frequently create opportunities for students to engage actively in discussions, ask questions, and share their opinions. This approach not only fosters classroom interaction but also encourages critical thinking. Research by Haryanto & Kencanawati (2023) indicates that presenting contextual questions that challenge students' critical thinking can deepen their comprehension of complex concepts. Additionally, teachers employ tools such as videos, simulations, and simple experiments to clarify challenging topics like photosynthesis and the biogeochemical cycle. During these sessions, teachers also administer short quizzes as a form of formative assessment, rewarding students who answer correctly. Rewards, such as praise or extra points, can enhance students' motivation and confidence. According to research by Santosa & Yulianti (2020), quizzes in biology learning significantly boost students' motivation, achieving an average score of 91.25.

The closing activity is done by reflecting on the material that has been learnt. The teacher asks students to summarize the day's lesson and provides feedback on the learning process. In this stage, the teacher also links learning with Islamic values, such as the importance of protecting the environment as a form of responsibility for God's creation. The integration of these values provides a moral dimension to learning, so that students not only understand biological material scientifically but also ethically and spiritually. Write the results and discussion of the service that has been carried out. Listyono et al., (2018) revealed that integrating Islamic values in biology lessons facilitates character building and helps develop students' morality and knowledge.

Factors that Influence Student Learning Motivation

Learning motivation plays an important role in student success, especially at SMA NW Kopang which integrates Islamic values in biology learning. High motivation can encourage students to be more focused, active, and enthusiastic in participating in learning, which in turn can improve their learning outcomes. In the context of biology learning, motivation is a key element to help students face the challenges of complex material, such as understanding the structure and function of living things, as well as their interaction with the environment (Howard et al., 2021).

The results of the study based on observations, interviews, and document analysis of students' grades show that learning motivation at SMA NW Kopang is influenced by various factors. Some students show a high level of motivation when teachers use interactive learning methods that are relevant to everyday life (Regmi & Devkota, 2022). In addition, interviews with teachers revealed that rewards in the form of praise or simple gifts can encourage students to be more enthusiastic in learning (Faysal et al., 2023). Analysis of grade documents also indicated an increase in learning outcomes for students who were actively involved in the learning process.

Internal factors that influence student learning motivation include interest, self-confidence, and a sense of responsibility for learning tasks. Students who have a high interest in biology tend to be more enthusiastic in learning the material taught. Self-confidence also plays an important role; students who believe in their own abilities are more motivated to complete tasks well. In addition, a sense of responsibility towards learning obligations, fueled by Islamic values, is one of the significant drivers of intrinsic motivation (Regmi & Devkota, 2022).

Meanwhile, external factors that influence students' learning motivation include support from teachers, the learning environment, and the learning approach used (Burke et al., 2024). Teachers at SMA NW Kopang play an active role in creating a conducive and supportive classroom atmosphere. The use of strategies such as contextual learning, integrating Islamic values into biology materials, and giving awards proved effective in increasing student motivation. In addition, parental involvement and peer support are also external factors that influence students' enthusiasm for learning.

Furthermore, the integration of Islamic values in biology learning provides a new dimension that affects student motivation (Jamaludin et al., 2022). Teachers not only act as educators but also as role models in applying these values to the learning process. This strategy creates a more meaningful connection between students and

the subject matter, thus increasing their motivation to learn and understand biology in a broader context. Thus, this study confirms the importance of a holistic.

SMA NW Kopang Biology Teacher's Strategy in Learning

The results of this study show various strategies adopted by Biology teachers at SMA NW Kopang to increase students' biology learning motivation. By detailing the results of classroom observations, interviews, and document analyses, the following findings can be presented as follows:

Use of Contextualised Learning Methods

Contextual learning methods are the primary strategy employed by biology teachers at SMA NW Kopang to help students grasp complex concepts. According to Galuh Galuh (2015), contextual learning model in biology increases student motivation and improves learning outcomes compared to direct learning. Classroom observations reveal that teachers consistently connect biology topics to real-life situations relevant to students' daily experiences. For instance, when discussing ecosystems, the teacher references local environments such as rice fields, forests, and gardens in the Kopang area. This approach enables students to better understand the relationship between theoretical concepts and their real-world applications, ultimately increasing their motivation to learn.

Interviews with teachers revealed that this method was chosen because students often find it difficult to understand abstract material. By providing a real context, the teacher tries to stimulate students' curiosity. The use of local cases such as the impact of deforestation on biodiversity around their village makes it easier for students to understand ecological concepts. Teachers also provide space for students to discuss and argue, so that learning becomes more interactive and involves them directly. Research by Vercellotti (2018) revealed that interactive learning spaces do not significantly impact overall student achievement, but may make classroom instruction more effective and efficient.

When students' enthusiasm seems to decline during the learning process, the teacher uses ice breaking as a way to restore the energy of the class. This ice breaking is in the form of educational games that are still related to biology material. The teacher conducts a quick quiz on the characteristics of living things or makes a group game to arrange the life cycle of certain organisms. This activity not only refreshes the atmosphere, but also strengthens students' understanding of the material that has been taught. In line with the results of research by Sari et al., (2023) that showed icebreaking in learning increases student enthusiasm and learning outcomes at Darma Medan Middle School.

In addition, teachers also give rewards as a form of appreciation to students who are active or able to answer questions correctly. This reward is not always a physical gift, but can also be in the form of direct praise, additional points, or symbolic awards such as being the group leader in the next activity. Based on interviews with students, they feel more motivated to participate actively because of the appreciation from the teacher. This reward is also an effective way to encourage students who usually lack confidence to be more involved in learning.

Teacher Use Educational Technology

The use of educational technology is one of the leading strategies implemented by biology teachers at SMA NW Kopang to improve students' motivation and understanding. Based on observations, teachers utilize various technological devices, such as laptops, projectors, and digital learning platforms, to deliver materials in a more interesting and interactive way. In explaining cell structure, the teacher uses a 3D animation video that shows the cell components in detail and how each component functions. This visualization helps students who previously had difficulty imagining abstract structures to better understand the material. According to Stadlinger et al., (2021), video animation can help integrate molecular, cellular, and clinical processes in modern education, engaging visual learners and facilitating deeper learning when desired.

Interviews with teachers show that technology is also used to make learning more varied and tailored to students' needs. Teachers often use online quiz apps such as Kahoot or Quizizz to evaluate students' understanding at the end of the session. This approach not only provides quick feedback on the extent to which students understand the material, but also creates an atmosphere of healthy and fun competition (Tanaka et al., 2016). Students revealed that they felt more motivated to learn due to the engaging and interactive quiz format.

Additionally, teachers use online learning platforms like Google Classroom to assign tasks and share supplementary materials. This platform enables students to access learning resources at any time, whether in the form of articles, videos, or practice questions. According to student interviews, this easy access is particularly beneficial for those who struggle with in-class learning, allowing them to review the material independently. Teachers also guide students on how to find credible references online, helping them develop their independent learning skills. In the learning process, teachers not only use technology to deliver content but also actively engage students in its utilization. For example, students are invited to create digital presentations using applications like PowerPoint or Canva on specific biology topics. This activity enhances their technical skills while also building confidence and critical thinking abilities. Throughout this process, teachers provide guidance to ensure that students comprehend the material while nurturing their creativity.

Personalized Approach

The personalization approach is one of the strategies employed by biology teachers at SMA NW Kopang to enhance students' motivation to learn. According to Zhang et al., (2023), this approach enables teachers to tailor their teaching methods to the needs, interests, and abilities of each student. Results from interviews with teachers indicate that personalization is implemented by observing students' learning styles whether visual, auditory, or kinesthetic and providing tasks that align with these preferences. For instance, students who prefer visual learning receive additional materials in the form of infographics, while auditory learners benefit from comprehensive oral explanations.

During the learning process, teachers also pay special attention to students who appear less active or struggle to understand certain materials. Observations reveal that teachers take the time to engage with students individually or in small groups, particularly during practical learning sessions, where they offer direct guidance tailored to each student's needs. Students have reported that this personal interaction makes them feel more valued and motivates them to learn more effectively.

Teachers also utilize a personalized approach to enhance student engagement in biology, which is often considered an abstract subject. They give students the freedom to choose their preferred projects within a specific theme, such as ecosystems or biotechnology. According to research by Evans & Boucher (2015), providing choices allows students to feel more in control of their learning, which, in turn, increases their motivation. For example, students interested in technology may choose a biotechnology-related project, while those more concerned about the environment may focus on a conservation theme.

Conclusion

The results of this study show that various strategies implemented by biology teachers at SMA NW Kopang have impact in increasing students' learning motivation. Strategies such as contextual learning, the use of educational technology, personalised approaches, as well as the insertion of ice breaking and rewards proved effective in creating an interactive, relevant and student-centred learning atmosphere. By linking biology material with real-life situations and Islamic values, teachers are able to present learning that is not only academically orientated but also builds student character.

In addition, this study revealed that internal factors, such as students ‘interest and confidence, as well as external factors, such as teacher support and learning environment, influence students’ learning motivation. The integration of Islamic values in biology learning provides a deep moral dimension, making students better understand the relationship between science and their responsibilities as believers.

Recommendation

Further research is recommended to explore the long-term effects of this strategy on student learning outcomes as well as its effectiveness in various other educational contexts. This will help enrich the literature on innovative teaching strategies that are relevant to the needs of students in the modern era.

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