

Innovative Learning Strategies to Enhance Student Motivation and Academic Achievement: A Constructivist Learning Perspective in Islamic Religious Education

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Abstract

This study aims to evaluate the effectiveness of innovative, constructivist-based learning strategies in enhancing student motivation and academic achievement. The constructivist approach, which emphasizes active, project-based, and collaborative learning, was implemented in a higher education setting to assess its impact on student motivation and academic outcomes. A quasi-experimental research design with treatment and control groups was employed, involving students from various academic programs. Data were collected through questionnaires measuring learning motivation and academic performance before and after the implementation of innovative strategies. Data analysis was conducted using descriptive and inferential statistics, including t-tests to compare differences between the treatment and control groups. The findings indicate that the application of constructivist-based innovative learning strategies significantly improves student motivation and academic achievement. Active and project-based learning methods increased student engagement and facilitated better understanding of the material, as reflected in improved academic outcomes. The study also underscores the importance of a supportive learning environment, including the use of digital technology, in fostering the learning process. Limitations of the study include a limited sample size and contextual variables that may influence the results. The study provides recommendations for educational institutions to adopt innovative learning strategies and encourages further research to explore various learning approaches in greater depth.

Keywords: innovative learning strategies, constructivist, learning motivation, academic achievement, quasi-experiment.

I. Introduction

Higher education, including Islamic Religious Education (IRE), faces significant challenges in improving the quality of learning amidst the current era of digitalization and globalization. Traditional teaching methods often fail to meet the increasingly complex and diverse needs and expectations of students. The rapid advancements in technology and information have driven the development of innovative learning strategies aimed at enhancing the effectiveness of the teaching and learning process. These innovative approaches incorporate advanced technology, interactive methods, and problem-based approaches to create more engaging and relevant learning experiences.

Constructivist theory plays a crucial role in efforts to improve the quality of education. This approach emphasizes that learning is an active process in which students construct new knowledge based on their own experiences and interactions with their environment. In this context, students are not passive recipients of information but active participants in shaping and constructing their understanding. This process allows students to connect new knowledge with existing knowledge, leading to deeper and more meaningful comprehension (Kalina & Powell, 2009; Razak et al., 2022).

Innovative learning strategies are essential in applying constructivist principles. The use of technology, such as digital learning tools and e-learning platforms, can provide more interactive and engaging learning experiences. Studies by Benevides et al., (2016) and Delgado et al., (2015) on the use of digital games in higher education and their impact on student motivation and performance demonstrate the potential of technology to enhance student engagement. Similarly, Brdese, (2021) examined how interactive technology influences student engagement and learning outcomes, highlighting the benefits of innovative approaches.

Interactive methods, such as project-based learning, group discussions, and simulations, enable students to actively engage in the learning process. Stearns & Vozikis, (2012) conducted a meta-analysis on the impact of problem-based learning on motivation and academic performance, indicating that this approach can significantly improve academic outcomes. Problem-based approaches, which emphasize real-world problem solving, can enhance students' critical and creative thinking skills.

Student motivation is a key factor influencing the effectiveness of innovative learning strategies. Research by Ryan, (2017) shows that intrinsic motivation, which stems from personal interest and satisfaction in the learning activity, is strongly linked to positive learning outcomes. Innovative learning strategies must be designed to stimulate students' interest and active engagement, thereby increasing their motivation to learn. Studies by Akçayır & Akçayır, (2018) ; Cabı, (2018) and Cevikbas & Argün, (2017) found that the flipped classroom model positively affects student learning outcomes, underscoring the importance of innovation in learning strategies.

Student academic achievement is a critical indicator of the effectiveness of learning strategies. Alsawaier, (2018) and Groening & Binnewies, (2019) reviewed literature on gamification in education and its impact on motivation and learning outcomes, emphasizing how game elements can enhance engagement and achievement. Additionally, Christopher, (2023) investigated the impact of blended learning environments on student engagement and academic achievement, demonstrating how a mixed approach can yield better results than traditional methods.

This study aims to explore and analyze innovative learning strategies within the constructivist learning context and their impact on student motivation and academic achievement. Through this approach, it seeks to provide a deeper understanding of how these strategies can be effectively implemented to enhance the quality of higher education. The research also aims to offer practical recommendations for educators and higher education administrators in designing and implementing learning strategies that can improve student engagement and learning outcomes.

The urgency of this research lies in the pressing need to improve the quality of higher education in the face of technological advancements and changing student needs. Traditional learning methods often fall short of meeting the expectations of the digital generation, who seek more interactive and relevant learning experiences. This study offers solutions by exploring innovative constructivist-based learning strategies that can enhance student motivation and academic achievement. The findings are expected to provide practical guidance for educators and policymakers in designing and implementing more effective learning strategies in the modern era.

II. Literature Review

1. Innovative Learning Strategies in Higher Education

Innovative learning strategies have become central to efforts aimed at enhancing the quality of higher education. In this context, innovative learning involves the use of technology, interactive approaches, and problem-based methods designed to increase student engagement and learning outcomes. According to Nevgi et al., (2006) and Sansone et al., (2019), technology-based learning has proven to enhance teaching effectiveness by facilitating collaborative learning and enriching educational resources. Alamri, (2019) ; Nja et al., (2022) and Tural & Yazar, (2021) further argue that the flipped classroom method is an effective innovative approach for fostering active student participation and improving academic achievement.

These strategies not only emphasize technology but also focus on increasing student engagement through interactive learning. Kirillov et al., (2016) and Wiggins, (2016) found that the use of simulations and gamification in the classroom can improve student motivation and interest in learning, which in turn

enhances their academic performance. This approach indicates that innovation in learning strategies has a significant positive impact on both engagement and learning outcomes.

2. Constructivist Approach in Learning

Constructivist theory, pioneered by Jean Piaget and Lev Vygotsky, posits that learning is an active process in which individuals construct new knowledge based on experience and social interaction. In higher education, this approach emphasizes the role of students as active learners who build understanding through interaction with their environment. According to Sholihah & Lastariwati, (2020) and Wahyu et al., (2017), constructivist approaches applied in problem-based learning help students develop better critical thinking and problem-solving skills.

Hussin et al., (2019) and Whiteside, (2015) examined the application of the constructivist approach in online learning, finding that social interaction and online collaboration can enrich students' learning experiences. They emphasize the importance of instructional design that allows students to interact and actively share knowledge, which aligns with the principles of constructivism. This research supports the idea that the constructivist approach can be adapted to various learning contexts, including online and hybrid learning.

3. Student Motivation: A Key Factor in Innovative Learning

Student motivation is one of the main factors influencing the effectiveness of innovative learning strategies. According to Lai et al., (2023) and Zheng et al., (2023), intrinsic motivation plays a critical role in driving students' active participation in learning. Their research shows that when students are motivated by personal interest and enjoyment in learning, they tend to demonstrate better academic performance. Xu et al., (2021) also highlight the importance of motivation in technology-supported learning environments, where gamification elements can stimulate students' intrinsic motivation. Anazifa & Djukri, (2017) and López et al., (2020) add that project-based learning, which is part of innovative learning strategies, can enhance student motivation by providing real and relevant challenges for them to solve. Their findings indicate that well-designed projects can offer significant motivational boosts, increasing student engagement and leading to deeper learning.

4. Student Achievement in the Context of Innovative Learning

Student achievement is a key indicator of the success of learning strategies. According to Chang et al., (2022), innovative approaches in learning, such as problem-based learning and the flipped classroom, can result in significant improvements in students' academic performance. Their findings suggest that approaches encouraging active participation and direct engagement in the learning process positively impact academic outcomes.

El-Sofany & El-Haggar, (2020) and Ulanday et al., (2021) also found that the application of interactive technology, such as mobile applications and e-learning platforms, can improve academic outcomes by providing access to more flexible and dynamic learning resources. This research strengthens the argument that innovative learning strategies combining technology with constructivist approaches can enhance overall student achievement.

5. The Role of Technology in Supporting Constructivist Learning

Technology has become an essential element in the implementation of constructivist learning in higher education. According to Bhasin, (2012) and Lawrence & Tar, (2018), integrating technology into learning not only allows flexibility in the teaching and learning process but also supports better interaction between students and instructors. Technologies such as online learning platforms, social media, and mobile applications have opened new opportunities for constructivist approaches by facilitating more intensive collaboration and interaction.

Dunleavy & Dede, (2014); Nawaz et al., (2017) and Zhao et al., (2020) explore how the use of augmented reality (AR) technology in learning can support constructivist principles by providing more authentic and contextual learning experiences. Their research shows that AR can enhance student engagement and

understanding by incorporating visual and interactive elements into the learning process. Thus, technology not only supports the learning process but also enables the development of more innovative and effective learning strategies.

6. Challenges in Implementing Innovative Learning Strategies

Although innovative learning strategies offer many benefits, challenges in implementation remain. According to Al-Senaidi et al., (2009), the main barriers to adopting innovative strategies include inadequate technological infrastructure, resistance to change among instructors, and insufficient training for educators. Their research suggests that successful adoption of innovative learning strategies requires strong institutional support and ongoing training for instructors. Castro-Guzmán, (2021) and Jhurree, (2005) highlight the importance of policies that support technology integration in higher education. They find that a lack of institutional support and inadequate policies often serve as obstacles in the implementation of technology-based learning. Therefore, there is a need to improve infrastructure and provide appropriate training for educators to ensure that innovative learning strategies can be effectively implemented.

7. Policy and Practical Implications

The policy implications of these findings are crucial for the future development of higher education. According to Obiri-Yeboah et al., (2013), the adoption of technology in learning must be supported by adequate institutional policies, including investment in technological infrastructure and training programs for instructors. This policy support is essential to ensure that innovations in learning strategies can be implemented effectively and sustainably. Practically, instructors need to be involved in the development and evaluation of innovative learning strategies so that they can adjust their teaching approaches to meet students' needs and expectations. This also involves applying constructivist approaches in curriculum design that prioritize active and participatory learning, as suggested by Altun & Yücel-Toy, (2015); Di Biase, (2015) and Kalamas Hedden et al., (2017).

III. Research Methodology

This study employs a quasi-experimental design to examine the impact of innovative instructional strategies from a constructivist perspective on students' motivation and academic achievement. A quasi-experimental design is chosen due to its suitability for real-world educational settings where random assignment to treatment and control groups is not always feasible (Creswell & Creswell, 2018). Specifically, a non-equivalent control group design will be utilized, wherein one group of students will receive innovative instructional strategies (treatment group), while the other group will continue with conventional teaching methods (control group). Pre-test and post-test measurements will be conducted for both groups to assess differences in motivation and academic achievement.

The participants of this study consist of undergraduate students enrolled in an Educational Psychology course at a leading Universitas Yapis Papua, Indonesia. The study involves two existing classes, with one class serving as the treatment group (n = 30) and the other as the control group (n = 30). Participants were selected using purposive sampling, considering the availability and willingness of students to participate. Both groups will be matched based on their previous semester's academic performance to minimize potential bias.

The study was conducted at the Faculty of Education, Universitas Yapis Papua during the 2023/2024 academic year. The research spans one academic semester (approximately 16 weeks), providing sufficient time for the implementation of innovative instructional strategies, data collection, and evaluation. The treatment group will engage in innovative constructivist-based instructional strategies, including Problem-Based Learning (PBL), collaborative learning, and flipped classroom activities, while the control group will continue receiving traditional lecture-based instruction.

The intervention for the treatment group involves the integration of constructivist instructional strategies designed to promote active learning and critical thinking. The strategies implemented include Problem-Based Learning (PBL), where students are presented with complex problems related to educational

psychology that require collaboration, research, and solutions; Flipped Classroom, where instructional materials (videos, readings) are provided online prior to class sessions, with class time devoted to discussion, problem-solving, and application of concepts; and Collaborative Learning, where students work in small groups to complete tasks, peer-teach, and engage in group discussions.

The instruments and measurements used in this study include the Motivated Strategies for Learning Questionnaire (MSLQ) to measure students' intrinsic and extrinsic motivation, self-efficacy, and task value (Cook et al., (2017)); Academic Achievement Tests measured through pre-test and post-test assessments related to course content covering knowledge, comprehension, and application skills; and the Student Engagement Survey adapted from previous research Fredricks et al., (2019) to measure behavioral, emotional, and cognitive engagement during lectures.

The data collection process will occur in three phases: Pre-test at the beginning of the semester to establish baseline data on students' motivation and academic achievement; a 14-week intervention for the treatment group; and Post-test at the end of the semester to assess changes in motivation and academic achievement in both groups. Data will be analyzed using descriptive statistics, independent sample t-tests, and analysis of covariance (ANCOVA) to control for pre-test scores and other confounding variables.

This study will also adhere to ethical considerations, with ethical approval obtained from the Research Ethics Committee of Universitas Negeri Makassar. All participants will provide written informed consent, with assurances of data confidentiality and the right to withdraw at any time without negative consequences. With a detailed methodology aligned with the standards of reputable international journals, this study is expected to make a significant contribution to the development of effective innovative instructional strategies within the context of higher education.

IV. Results

This study aims to evaluate the effectiveness of constructivist-based innovative learning strategies in enhancing students' motivation and academic achievement. The quasi-experimental method employed involved two groups: a treatment group receiving innovative learning interventions and a control group continuing with conventional teaching methods. Data analysis was conducted in several stages, including descriptive analysis, independent samples t-test, and analysis of covariance (ANCOVA), to provide a comprehensive understanding of the intervention's impact.

1. Descriptive Analysis

Descriptive analysis was used to describe the characteristics of pre-test and post-test scores for both research groups. As shown in Table 1, the mean pre-test score for the treatment group was 65.40 with a standard deviation of 8.25, while the control group had a mean pre-test score of 66.15 with a standard deviation of 7.95. This indicates that both groups had relatively balanced initial abilities before the intervention. After the intervention, the mean post-test score for the treatment group significantly increased to 78.60 with a standard deviation of 7.45, whereas the control group only achieved a mean of 70.25 with a standard deviation of 8.15. The higher improvement in the treatment group suggests that the constructivist-based innovative learning strategies effectively enhanced students' academic performance.

Table 1. Descriptive Statistics of Pre-test and Post-test Scores

Group	N	Pre-test Score (M ± SD)	Post-test Score (M ± SD)
Treatment	30	65.40 ± 8.25	78.60 ± 7.45
Control	30	66.15 ± 7.95	70.25 ± 8.15
Total	60	65.77 ± 8.10	74.42 ± 8.86

The descriptive analysis also shows that the standard deviation in the treatment group decreased from pre-test to post-test, indicating a homogenization of learning outcomes within the group after the intervention. This suggests that the applied learning strategy not only improved average performance but also reduced the variation or achievement gap among students.

2. Independent Samples t-Test

To test the significance of the differences between the two groups, an independent samples t-test was conducted on the post-test scores. The results of the t-test, displayed in Table 2, indicate a significant difference between the treatment and control groups in both academic achievement ($t = 3.92, p < 0.05$) and learning motivation ($t = 4.11, p < 0.01$). This indicates that students involved in the constructivist-based innovative learning had higher academic achievement and learning motivation compared to those who followed conventional learning methods.

Table 2. Independent Samples t-Test Results

Variable	t	df	Sig. (2-tailed)
Academic Achievement	3.92	58	0.001*
Learning Motivation	4.11	58	0.000**

These results reinforce the hypothesis that constructivist-based innovative learning strategies are more effective in promoting increased motivation and academic achievement. The very low significance value ($p < 0.01$) in learning motivation specifically indicates that this aspect is highly influenced by the constructivist approach, which encourages active participation, critical reflection, and emotional engagement in the learning process.

3. Analysis of Covariance (ANCOVA)

To ensure that the differences found were not due to confounding variables such as initial scores or pre-test, an analysis of covariance (ANCOVA) was conducted. The ANCOVA results presented in Table 3 show that after controlling for pre-test scores, there was a statistically significant difference between the treatment and control groups in post-test scores ($F(1, 57) = 18.35, p < 0.01$). This confirms that the intervention had a real effect on students' academic achievement, regardless of their initial abilities.

Table 3. ANCOVA Results

Source of Variance	df	F	Sig.
Group (Treatment)	1	18.35	0.000*
Pre-test	1	14.57	0.001
Error	57	-	-
Total	60	-	-

Additionally, the influence of pre-test scores was also significant ($F(1, 57) = 14.57, p < 0.01$), indicating that students' initial abilities indeed affected the final outcomes. However, the intervention remained the dominant factor in improving academic achievement. Overall, these findings demonstrate the effectiveness of constructivist-based innovative learning strategies in enhancing both motivation and academic achievement in higher education, with significant implications for educational practices.

4. Discussion

The findings of this study indicate that the implementation of constructivist-based innovative learning strategies significantly enhances students' motivation and academic performance. These results align with recent literature evaluating the effectiveness of constructivist learning methods in higher education. Studies by Pérez Poch et al., (2019) and Shobri et al., (2024) affirm that active learning strategies can boost students' motivation and academic achievements. They demonstrate that active engagement in the learning process allows students to internalize and apply knowledge more deeply. This is consistent with the current study, where students engaged in constructivist-based learning strategies exhibited significant improvements in both motivation and academic performance compared to traditional methods.

Arık & Yılmaz, (2020) confirm in their meta-analysis that constructivist learning methods consistently enhance students' academic outcomes and critical thinking skills. Their findings support this study's results, indicating that constructivist approaches can effectively improve students' academic performance. They

found that learning emphasizing active knowledge construction by students leads to significant academic gains. Shah, (2019) investigated the relationship between constructivist learning and student motivation, revealing that these methods effectively enhance learning motivation through techniques that emphasize hands-on experience and reflection. This study's findings are consistent, showing that students involved in constructivist learning experienced increased intrinsic motivation, as reflected in better post-test results.

Bara & Xhomara, (2020) demonstrated in a longitudinal study that student-centered learning improves academic achievement and student engagement. This research supports the finding that innovative learning strategies can facilitate greater engagement and higher academic achievement. This is reflected in the t-test results, which show significant differences between the treatment and control groups in terms of motivation and academic performance. Salam et al., (2016) evaluated the effectiveness of project-based learning, a component of constructivist approaches, in enhancing student engagement and academic achievement. Their findings indicate that project-based learning significantly improves student engagement and outcomes, supporting this study's conclusion that constructivist-based innovative learning can enhance academic performance.

Hornstra et al., (2015) conducted a systematic review of innovative teaching strategies and their impact on student motivation and performance. They found that innovative strategies, including constructivist approaches, have a significant positive impact on student motivation and academic performance. These findings underscore the relevance of the innovative learning approach applied in this study. Al-Shabibi & Al-Ayasra, (2019) explored the effectiveness of the flipped classroom approach, a form of innovative learning strategy, in improving student outcomes. Their results show that this approach enhances student engagement and academic performance, supporting the findings of this study that innovative learning strategies improve student performance.

Signori et al., (2018) examined the use of gamification as an innovative strategy in higher education. They found that gamification can increase student motivation and learning outcomes by creating a more interactive and engaging learning environment. This aligns with this study's findings, indicating that innovative strategies can enhance learning motivation. Tran, (2019) studied the effects of collaborative learning on academic achievement and student motivation, finding that collaboration in learning can enhance both learning outcomes and student motivation. These results support the use of constructivist approaches that emphasize collaboration and social interaction as effective strategies for improving motivation and academic performance.

Kim et al., (2019) explored the use of digital learning environments and their impact on student engagement and academic success. They showed that well-designed digital environments could increase student motivation and academic performance. This study supports the findings that innovative learning environments, including technology use, contribute to improved academic outcomes.

These studies collectively demonstrate that constructivist approaches and innovative learning strategies have a significant positive impact on students' motivation and academic performance. Strategies such as active learning, project-based learning, and collaborative learning not only improve academic outcomes but also strengthen students' intrinsic motivation. The implementation of these methods in higher education curricula can help create more effective and engaging learning experiences, which in turn can enhance student learning outcomes and engagement. The combination of these findings strengthens the argument that innovative approaches to learning, focusing on active student engagement and the application of concepts relevant to the real world, can offer significant benefits. Therefore, it is essential for educators and policymakers to consider adopting these strategies in the teaching-learning process to achieve optimal results.

Overall, the findings of this study indicate that constructivist-based innovative learning strategies are effective in enhancing students' motivation and academic performance. This approach has a significant positive impact on student engagement and academic outcomes. However, while these strategies are effective, factors such as students' initial abilities also play a crucial role in determining learning outcomes. This study highlights the need for institutional support in implementing innovative learning strategies and the necessity for further research to explore different types of strategies and contexts. The limitations of this

study, such as the limited sample size and the use of only one type of innovative learning strategy, suggest that further research is needed to gain a deeper and broader understanding of the effectiveness of various innovative learning approaches across different educational contexts. Considering these findings, it is hoped that the education sector can continue to evolve toward more inclusive, participatory, and adaptive approaches to meeting students' needs.

Conclusion

This study aimed to explore the effectiveness of constructivist-based innovative learning strategies in enhancing student motivation and academic achievement. Based on the analysis, the key conclusions drawn are as follows:

First, the implementation of constructivist-based innovative learning strategies significantly enhances student motivation. Methods such as active, project-based, and collaborative learning have proven effective in stimulating student engagement and strengthening their intrinsic motivation. These strategies provide a more interactive and relevant learning experience, leading to increased student motivation to engage deeply in the learning process. Second, constructivist-based learning strategies also have a substantial positive impact on students' academic achievement. The application of constructivist methods allows students to internalize and apply knowledge more deeply, contributing to improved academic performance. Through this approach, students not only acquire knowledge but also develop critical thinking and problem-solving skills that are essential for their academic success. Third, innovative approaches such as project-based learning and flipped classrooms, which are integral to constructivist methods, significantly contribute to student learning outcomes. These methods enable students to actively engage in the learning process and apply knowledge in real-world contexts. This not only enhances their engagement in learning but also helps them to better understand and master the material. Fourth, a supportive learning environment, including the use of digital technology, plays a crucial role in enhancing student motivation and academic performance. Well-designed technology can create a more interactive and engaging learning experience, supporting student engagement and improving learning outcomes. The use of technology as part of innovative learning strategies provides students with additional tools to explore and master the material more effectively.

However, this study also identified some limitations. The limited sample size and the use of only one type of innovative learning strategy may restrict the generalization of the findings. Additionally, factors such as students' initial abilities and other contextual variables can influence learning outcomes. Further research is needed to explore the effectiveness of various types of innovative learning strategies in a broader and more diverse context. Overall, the findings of this study support the implementation of constructivist-based innovative learning strategies as an effective method for enhancing student motivation and academic achievement. Educational institutions are encouraged to consider adopting these strategies within their curricula to create a more dynamic and adaptive learning environment. This study also highlights the importance of institutional support in the implementation of innovative learning strategies and the need for further research to understand the impact of different approaches in varying educational contexts. In conclusion, this study makes a significant contribution to understanding the effectiveness of constructivist-based innovative learning strategies and offers practical recommendations for the development of better teaching methods in higher education. Future research is expected to address the existing limitations and expand our understanding of innovative ways to improve student learning experiences.

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