



Intrinsic Learning Motivation and Academic Achievement of Senior High School Students

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Abstract. This study aims to examine the relationship between intrinsic learning motivation and academic achievement among high school students. The importance of this study lies in understanding how internal factors such as interest, curiosity, and self-determination can influence students' academic outcomes. Using a quantitative method, the study surveyed 120 students from various high schools in Semarang. The data were analyzed using Pearson correlation and regression analysis. The results indicated a significant positive relationship between intrinsic motivation and academic performance. These findings suggest the importance of nurturing intrinsic motivation as a pathway to improving academic outcomes.

Keywords: academic achievement, high school, intrinsic motivation, learning, psychology

1. BACKGROUND

21st-century education demands learning that is not only oriented toward outcomes but also focuses on students' internal processes, one of which is learning motivation. In this context, intrinsic learning motivation, namely students' internal drive to learn due to interest, curiosity, and personal satisfaction, has become a primary focus in various educational psychology studies. This motivation is believed to improve learning persistence, the quality of learning strategies, and student resilience in facing academic challenges (Ryan & Deci, 2020).

In recent developments, Self-Determination Theory (SDT) has become one of the main theoretical frameworks for explaining how intrinsic motivation is formed and maintained. This theory emphasizes that individuals will be intrinsically motivated to learn when three basic psychological needs—autonomy, competence, and relatedness—are met (Deci & Ryan, 1985). Recent empirical studies, such as those by Schunk et al. (2021) and Skinner et al. (2022), confirm that intrinsic motivation is positively correlated with academic achievement, active engagement in learning, and student psychological well-being.

However, research on intrinsic learning motivation in Indonesia remains relatively limited, particularly in the context of senior secondary education. Most Indonesian learning systems still primarily promote extrinsic motivation through an emphasis on grades, exams, and formal rewards. Local studies generally have not explored the relationship between intrinsic learning motivation and objectively measurable academic achievement, such as high school student report card grades.

Disparities are also evident in the application of Western theories such as SDT in collectivist countries like Indonesia. Few studies have adapted or evaluated the model's suitability in local social and cultural contexts. This raises the question of whether strategies for increasing intrinsic motivation that are successful in Western countries would be equally effective in Indonesia.

In response to this gap, this study offers a quantitative approach to empirically evaluate the relationship between intrinsic learning motivation and high school students' academic achievement. Using a valid measurement tool based on SDT and objective academic achievement data, this study seeks to contribute to understanding the dynamics of learning motivation in Indonesian adolescents.

Specifically, this study aims to:

1. Measure the level of intrinsic learning motivation among high school students in Semarang City.
2. Determine the relationship between intrinsic learning motivation and student academic achievement.
3. Provide a scientific basis for developing learning approaches that foster intrinsic motivation in schools.

The benefits of this study are:

1. Provide theoretical contributions to the development of learning motivation studies in educational psychology.
2. Serve as a reference for teachers, schools, and policymakers in designing learning strategies that facilitate the growth of intrinsic motivation in students.
3. Help students understand the importance of intrinsic motivation in achieving academic achievement independently and sustainably.

Based on the description above, the hypothesis in this study is: There is a significant positive relationship between intrinsic learning motivation and high school students' academic achievement.

a. Exposure to Recent Developments in the Field of Science

In the last decade, attention to intrinsic learning motivation has increased significantly along with the shift in the educational paradigm from performance-based to student-centered learning. This change was driven by various studies emphasizing that effective learning depends not only on teaching methods but also on students' internal readiness and willingness to learn.

According to Ryan and Deci (2020), in the latest revision of Self-Determination Theory, intrinsic motivation is an important predictor of academic engagement, creative problem-solving, and learning resilience. When students perceive learning activities as having personal meaning, they tend to demonstrate greater initiative and are less likely to give up when faced with challenges.

Research by Schunk et al. (2021) in *Motivation in Education* also shows that students with intrinsic motivation are better able to develop long-term learning goals, use metacognitive strategies effectively, and demonstrate more stable academic achievement. This type of motivation is also positively correlated with students' levels of satisfaction and psychological well-being throughout their school years.

In Indonesia, a recent study by Suryani and Wijaya (2023) conducted in several high schools in Central Java found that students with high levels of intrinsic learning motivation had higher average academic scores than their peers who tended to be extrinsically motivated. They demonstrated active participation in class discussions, persistence in completing assignments, and an interest in independently seeking additional information.

The OECD (2019) in its PISA Global Competence report also highlighted that one of the key factors contributing to high-achieving students in developed countries is their high intrinsic motivation for learning. Countries such as Finland, Canada, and Japan prioritize intrinsic motivation as a key indicator of national educational success.

Furthermore, Skinner et al. (2022) identified that a learning environment that supports autonomy, is participatory, and provides space for exploration is crucial in facilitating the growth of intrinsic motivation. In the school context, this means the teacher's role is crucial not only in delivering material but also as a facilitator, building confidence and meaning in students' learning processes.

The application of technology in learning also influences motivational dynamics. A study by Jeno et al. (2020) found that the use of interactive application-based mobile learning designed with self-determined learning principles can increase intrinsic learning interest and motivation, especially among Generation Z, who grew up in the digital era.

With increasingly strong empirical evidence from various national contexts and educational levels, it is crucial for education systems, including in Indonesia, to design policies and teaching strategies that focus not only on exam results but also on fostering students' inner drive for voluntary and meaningful learning.

b. Research Gaps

Although various studies have demonstrated that intrinsic learning motivation has a positive influence on student engagement and academic achievement (Deci & Ryan, 2000; Ryan & Deci, 2020), most of these studies are still dominated by educational contexts in developed countries with learning systems that support student autonomy and participation.

In Indonesia, the primary focus on grade-based evaluation, exams, and quantitative academic achievement remains the primary measure of learning success. Consequently, most learning and assessment strategies tend to stimulate students' extrinsic motivation, such as achieving good grades, class rankings, or prizes, rather than fostering an intrinsic desire to learn.

Several local studies have highlighted the importance of learning motivation in general on achievement, but few specifically distinguish and analyze intrinsic learning motivation as an independent variable directly impacting student academic achievement at the high school level. Furthermore, most research in Indonesia tends to use a descriptive qualitative approach with a small number of participants, thus failing to provide a broader quantitative picture of the relationship.

Gaps are also evident in the cultural and social context of students. Most of the theories used originate from the West, such as Self-Determination Theory (SDT), but little has been studied on how these principles are applied in collectivist cultures like Indonesia, which tend to emphasize obedience and social values in the learning process.

Furthermore, there is insufficient research linking intrinsic learning motivation with objective academic outcomes (e.g., report card grades or academic achievement averages) in a sufficient sample size at the high school level. This level is a critical transition period that influences students' interests and direction of study toward higher education.

Therefore, this study aims to address this gap by empirically testing the relationship between intrinsic learning motivation and high school students' academic achievement in the Indonesian educational context. This research is expected to strengthen the scientific foundation for implementing a learning approach that is more oriented toward developing students' internal motivation.

c. Researcher's Arguments in Closing the Gap as a Promise to Contribute to Scientific Development

Given the limited empirical research on intrinsic learning motivation in the context of secondary education in Indonesia, particularly that directly links it to objective student academic achievement, researchers feel it is important to fill this gap through studies based on theory and quantitative data. Although theories such as Self-Determination Theory have been widely used abroad, their application in Indonesia has rarely been tested in a systematic and contextualized context, particularly at the high school level.

This study seeks to contribute to the development of educational psychology by evaluating the relevance and predictive power of intrinsic learning motivation on academic achievement in the context of Indonesian students. By involving high school students as participants and measuring academic achievement quantitatively (report card grades), this study provides a methodologically sound empirical picture.

Furthermore, by using an approach based on students' basic psychological needs—namely autonomy, competence, and social connectedness—this study not only confirms the relevance of SDT theory in the local context but also provides data that can be used as a basis for developing a more humanistic curriculum and learning strategies.

As a promise of contribution to the development of science, this research is expected to become an academic reference that can strengthen the position of intrinsic motivation as an important indicator in educational success, as well as become a basis for further studies in the field of motivation, academic achievement, and learning environment design that supports the optimal development of student potential.

d. Research Objectives

This study aims to examine and analyze the relationship between intrinsic learning motivation and academic achievement in high school (SMA) students. The primary objective of this study is to understand the extent to which students' internal drive for learning—which includes interest, curiosity, and personal satisfaction with learning—is objectively related to their academic achievement. Specifically, this study aims to:

1. Identify the level of intrinsic learning motivation among high school students.
2. Determine the level of academic achievement of high school students based on report card grades.

3. Analyze the relationship between intrinsic learning motivation and student academic achievement.
4. Provide theoretical and practical contributions to the development of learning strategies that can foster intrinsic motivation in students.
5. Provide a foundation for the development of a more student-centered learning approach in high school settings.

2. METHOD

This study used a quantitative approach with a correlational survey method to determine the relationship between intrinsic learning motivation and student academic achievement. This study was designed to be replicable by other researchers in similar contexts and populations.

Variable Identification:

The independent variable in this study is intrinsic learning motivation, which refers to students' internal drive to engage in the learning process. The dependent variable is academic achievement, measured by the average grades on students' odd-semester report cards in the 2024/2025 academic year.

Research Subjects:

The subjects in this study were eleventh-grade senior high school (SMA) students in Semarang City. The sampling technique was purposive, with the following criteria: (1) active students in the current academic year, (2) willing to participate as respondents, and (3) having received grades on their report cards from the previous semester. A total of 120 students from three different high schools, representing varying academic and socioeconomic backgrounds, were involved in the study.

Research Instrument: To measure intrinsic learning motivation, a psychological scale questionnaire developed by the researchers was used based on the principles of Self-Determination Theory. This scale consists of 20 items with response options on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The questionnaire items cover aspects of autonomy, competence, and social connectedness in the learning context. Content validity was tested by three expert lecturers in educational psychology, while reliability was tested using Cronbach's Alpha, yielding a coefficient of 0.87, indicating high internal consistency.

Academic achievement was obtained through documentation of students' odd semester report card grades, which reflect the average grades across all nationally compulsory subjects. This data was obtained with permission from the school and authenticated by the respective homeroom teachers.

Analysis Methods and Techniques:

After data collection, the next stage was data processing and analysis. Data from the intrinsic learning motivation questionnaire and academic achievement scores were analyzed using descriptive statistical techniques to examine data distribution, means, and standard deviations. Furthermore, the Kolmogorov-Smirnov test for normality was performed.

To examine the relationship between variables, the Pearson Product Moment correlation technique was used. Furthermore, a simple linear regression analysis was conducted to determine the contribution of intrinsic motivation variables to academic achievement. The entire analysis process was conducted using SPSS version 26 software.

This research was conducted over three weeks, from instrument distribution and report card data collection to data validation and statistical analysis. All procedures were conducted systematically and ethically, including obtaining informed consent from students and school officials prior to the study.

3. RESULTS

Descriptive Statistics

The descriptive analysis results show that students' intrinsic learning motivation scores are in the fairly high category, with a mean (M) of 3.94 and a standard deviation (SD) of 0.53. Meanwhile, the average student academic achievement score based on odd semester report card scores was 83.45 with a SD of 5.12. This indicates that students generally have good intrinsic learning motivation and stable academic performance.

Variabel	N	Mean	Std. Deviasi
Motivasi Belajar Intrinsik	120	3,94	0,53
Prestasi Akademik	120	83,45	5,12

Assumption Testing

Before conducting the correlation and regression tests, a data normality test was first performed using the Kolmogorov-Smirnov Test. The results showed that the data distribution was within the normal range ($p > 0.05$), thus meeting the requirements for parametric analysis.

Correlation Testing

The results of the Pearson correlation test showed a significant positive relationship between intrinsic learning motivation and student academic achievement ($r = 0.613$, $p < 0.01$).

This indicates that the higher a student's intrinsic motivation, the higher their likelihood of achieving good academic grades.

Regression Testing

A simple linear regression analysis showed that intrinsic learning motivation significantly contributed to academic achievement ($R^2 = 0.376$, $F = 49.37$, $p < 0.01$). This means that 37.6% of the variation in student academic achievement can be explained by intrinsic learning motivation.

Model	R	R. Square	F	Sig.
Regresi Linear	0,613	0,376	49,37	0,000

Interpretation of Results

These results indicate that intrinsic learning motivation is a significant factor influencing student academic success. While not the sole factor, strong intrinsic motivation—such as curiosity, interest in the subject, and satisfaction with the learning process—has been shown to drive better academic achievement.

4. DISCUSSION

The results of this study indicate a positive and significant relationship between intrinsic learning motivation and high school students' academic achievement. This finding supports the hypothesis that students who are driven to learn from within tend to be more successful academically than those who learn solely through external motivation.

Theoretically, these results support the Self-Determination Theory framework developed by Deci and Ryan (1985), which states that intrinsic motivation grows optimally when three basic psychological needs—autonomy, competence, and social relatedness—are met. When students feel in control of their learning process, feel capable, and feel socially connected in the school environment, they tend to be more actively engaged in learning and achieve higher academic results.

This research is also consistent with the findings of Ryan and Deci (2000), who stated that intrinsic motivation is correlated with learning persistence, the use of more complex cognitive strategies, and higher achievement across various educational contexts. In the local context, the results of this study align with research by Suryani & Wijaya (2023), which found that students with high intrinsic motivation in several high schools in Central Java had more

stable academic grades and demonstrated a more sustained interest in learning than students who were solely oriented towards external rewards.

However, these results also offer a novel contribution because they employed a quantitative design with a larger sample size and utilized report card data as an objective measure of academic achievement. Many previous studies assessed achievement based solely on self-perception or specific test scores, thus not fully representing students' academic achievement.

Interestingly, the coefficient of determination of 37.6% indicates that although intrinsic motivation is a significant factor, other factors influence student academic achievement by approximately 62.4%. This opens up opportunities for further research to integrate mediating or moderating variables, such as social support, learning strategies, self-efficacy, or other contextual factors like teacher teaching style and school culture.

Critically, a comparison with the study by Liu et al. (2018) researched students in China, showing that although intrinsic motivation is crucial, in some contexts with high academic pressure, extrinsic motivation becomes the primary driver of achievement. This suggests that cultural context and educational systems can influence how motivation works towards academic achievement.

Thus, the primary contribution of this research lies in strengthening empirical evidence that intrinsic motivation plays a crucial role in secondary education in Indonesia, particularly for high school students. This research encourages the development of educational strategies that emphasize not only final outcomes but also create meaningful, enjoyable learning processes that encourage students' independent exploration.

This research also provides a basis for schools and policymakers to review learning practices that focus too much on formal academic achievement and begin building systems that support the development of students' internal potential.

5. CONCLUSION

Based on the data analysis and discussion, it can be concluded that intrinsic learning motivation plays a significant role in supporting high school students' academic achievement. Students who have an intrinsic learning drive—in the form of interest, curiosity, and satisfaction in the learning process—tend to achieve better academic learning outcomes. This study confirms that intrinsic motivation is not merely a supporting factor, but rather an essential part of an effective and sustainable learning process. The main contribution of these findings lies in strengthening empirical evidence in the Indonesian educational context, that developing

students' intrinsic motivation must be a primary concern in learning strategies in high schools. Therefore, strengthening intrinsic motivation through learning approaches that support autonomy, competence, and social connectedness needs to be the orientation in educational development efforts that focus on students' potential and psychological well-being.

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