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The Impact of Learning Motivation on the Academic Performance of Students at Jilin Normal University

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Abstract

With the popularization of higher education, academic performance standards have become one of the criteria for evaluating college students' academic achievements. Students' learning motivation is considered a key factor affecting their academic performance. This article aims to explore the impact of students' learning motivation on their academic performance in colleges and universities. Through questionnaire surveys and data analysis, it analyzes the differences between intrinsic motivation and extrinsic motivation, as well as their specific impacts on academic performance. The research results show that there is a significant positive correlation between intrinsic motivation and academic performance, while the impact of extrinsic motivation is relatively weak. In addition, the type of learning motivation also affects students' learning strategies, which in turn affect their academic performance. This study provides suggestions for college education administrators to improve teaching strategy practices, especially in stimulating students' intrinsic motivation.

Keywords: student learning motivation, academic performance, intrinsic motivation, extrinsic motivation, learning strategies

1. Introduction

In higher education, students' learning motivation is a crucial factor determining their academic performance and overall development level. In recent years, with the continuous innovation and transformation of educational concepts, the traditional "knowledge-inductive" model has gradually been replaced by a "student-centered" teaching philosophy. As the driving force in learning activities, students' learning motivation directly affects their engagement in learning tasks, choice of learning strategies, and ultimately their learning outcomes. Especially in higher education, college students face more challenges of autonomous learning, and there is a close relationship between the strength of their learning motivation and the quality of their academic performance.

The types and characteristics of learning motivation can be analyzed from multiple perspectives. According to self-determination theory, learning motivation can generally be divided into intrinsic motivation and extrinsic motivation. Intrinsic motivation refers to students' interest in and enjoyment of learning

activities themselves, while extrinsic motivation is more related to external rewards and pressures. Recent research has shown that intrinsic motivation has a significant positive impact on students' academic performance, while the impact of extrinsic motivation on academic performance is more complex. Therefore, this study attempts to explore how to promote academic performance by cultivating students' intrinsic motivation through an in-depth analysis of the types of student motivation and their impact on academic performance.

2. Research Background

2.1 Theoretical Basis of Learning Motivation

As a core topic in academic research, learning motivation has been extensively explored, especially in the context of higher education. Learning motivation is typically categorized into two main types: intrinsic motivation and extrinsic motivation. Intrinsic motivation stems from students' interest in the learning activity itself and a sense of inner satisfaction, while extrinsic motivation refers to students' behavior of learning to achieve external goals (such as obtaining rewards, avoiding punishment, or meeting others' expectations). According to the Self-Determination Theory (SDT), intrinsic motivation is often closely related to individuals' needs for autonomy, sense of control, and belonging, and these factors can promote students' sustained participation in learning activities (Ryan & Deci, 2020). Intrinsic motivation typically fosters deep learning and exhibits a significant positive correlation with academic performance. It is evident that extrinsic motivation often leads students to exhibit learning behavior only when facing external pressure, thereby limiting their long-term learning potential (Deci & Ryan, 2021). In recent years, an increasing number of studies have pointed out that the balance of extrinsic motivation plays a crucial role in student performance, especially in terms of academic achievement and mental health (Wang & Shih, 2021). Therefore, understanding the impact of extrinsic motivation on academic performance can provide effective theoretical support for educational practice, especially among college students.

2.2 The Relationship between Learning Motivation and Academic Achievement

Past research has indicated that learning motivation is a predictive factor of students' academic performance. Numerous studies have shown a significant positive correlation between intrinsic motivation and academic achievement. In 2020, it was found that there is a positive relationship between intrinsic motivation and academic performance scores among college students, where stronger intrinsic motivation is associated with improved academic performance. This phenomenon is observed in both science and engineering students and liberal arts students, particularly in the use of autonomous learning and deep strategy learning. In contrast, the relationship between extrinsic motivation and academic achievement is more complex. Some studies have shown that extrinsic motivation can improve students' academic performance in the short term, especially in high-pressure academic environments (Gao, 2021). However, if students' learning motivation primarily comes from external rewards or external pressure, they may lack interest in learning itself, which can affect long-term academic achievement (Wang, 2021). Over the long term, the limitations of such extrinsic motivation may lead to learning burnout, affecting students' academic performance and personal growth. Recent research has also revealed the interactive relationship between extrinsic and intrinsic motivation. In 2022, it was noted that students may undergo a transformation from extrinsic motivation to intrinsic motivation under different cultural backgrounds, especially during the university stage. This transformation is closely related to instructional design, teacher support, and sociocultural factors. It was also found that when students can obtain both external rewards and intrinsic satisfaction from learning, extrinsic motivation can mutually reinforce each other, forming a positive learning motivation cycle (Xu, 2023).

2.3 Learning Motivation in the Context of Higher Education

With the rapid changes in society and the continuous development of higher education, the academic pressure and external competition faced by college students have also increased sharply. In China, with the gradual advancement of the reform of the college entrance examination system, more and more college students are under tremendous pressure from academics, family, and society. This external pressure drives the extrinsic motivation

of students' learning behaviors, such as pursuing high scores, accumulating points, and obtaining employment opportunities. These extrinsic motivations have become the main driving force for college students' learning (Li & Zhang, 2020). However, with the shift in educational philosophy, more and more universities have begun to focus on how to stimulate students' intrinsic motivation, especially in terms of enhancing academic interest and autonomous learning ability. For example, Li Wei (2021) found through a survey of 300 college students that intrinsic motivation has a significant impact on students' deep learning strategies and academic performance. Research shows that students with intrinsic motivation often exhibit higher engagement in the classroom and effectively improve their academic performance through autonomous learning. Additionally, in recent years, research on the relationship between learning motivation and academic performance has begun to focus on the influence of individual differences. The relationship between learning motivation and academic performance varies among college students of different grades and disciplines. Students tend to be more intrinsically motivated, while lower-grade students are more driven by extrinsic incentives (Yang, 2022). Furthermore, students of different disciplines also differ in the types of motivation and performance in academic achievements, especially between science and engineering students and liberal arts students, where there are significant differences in the sources and impact of motivation (Zhang, 2022).

2.4 Current Research Gaps and Challenges

Despite numerous studies on learning motivation in recent years, systematic research on the long-term impact of intrinsic and extrinsic motivation on academic performance remains inadequate, especially in the context of Chinese higher education. Many studies primarily focus on students in a specific discipline or across most academic years, lacking a comprehensive analysis of learning motivation across disciplines and different grades. Furthermore, research on the internal effects of motivation on academic performance through learning strategies has also decreased. This study aims to fill this gap by comprehensively analyzing the impact of extrinsic motivation on the performance of corresponding college students, providing educational administrators in universities with scientific evidence for improving teaching design and stimulating students' learning motivation.

3. Problem Statement

In the context of modern higher education, students' learning motivation has a significant impact on their academic performance and personal growth. With the rapid development of society and economy, as well as the continuous reform of the education system, learning motivation in the higher education environment exhibits a trend of diversification. In this process, intrinsic motivation and extrinsic motivation, as two main types of learning motivation, have gradually attracted widespread attention from the academic community. Intrinsic motivation usually stems from students' interest in learning content, curiosity, and the need for self-actualization, while extrinsic motivation is related to students' motivation to learn for external rewards, academic achievements, social recognition, and other factors (Ryan & Deci, 2000; Schunk, Pintrich, & Meece, 2008).

Although numerous studies have explored the relationship between learning motivation and academic performance, existing research primarily focuses on the independence of motivation types, with little attention paid to the comprehensive impact of motivation responses on academic performance. Especially in the dynamic and ever-changing environment of higher education, how to balance intrinsic motivation and extrinsic motivation, and explore the complex interactions between the two, remains an important issue that has not yet been fully resolved in academia. Extrinsic motivation may motivate students in the short term, but excessive reliance on external drives can lead to a lack of intrinsic interest in learning, which may ultimately affect their long-term academic achievements and personal development (Kohn, 1999; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004).

4. Research Questions

This study primarily revolves around the following questions:

4.1 Students' Intrinsic Motivation and Extrinsic Motivation Are Learning Themselves

Learning motivation has always been an important topic in academic research, especially in the field of higher education. Research has

shown that the type and level of learning motivation have a significant impact on students' academic performance. Intrinsic motivation and extrinsic motivation, as the two main types of motivation, play different roles in the formation of academic performance (Ryan & Deci, 2020). Intrinsic motivation stems from students' interest in the learning content itself and the satisfaction of mastering knowledge, while extrinsic motivation is mainly driven by external rewards or social pressure, such as academic honors, scholarships, employment opportunities, and other factors (Wang, 2021). However, existing research has focused more on the independent effect of extrinsic motivation, with less attention paid to deeply exploring the comprehensive impact mechanism of the interaction between intrinsic motivation and extrinsic motivation on academic performance.

4.2 Differences in Learning Motivation Based on Students' Discipline and Grade

In the context of higher education in China, students face diverse educational environments, subject characteristics, and social pressures, which exert varying impacts on their learning motivation. Therefore, exploring the differences in learning motivation among students based on different disciplines and grades is crucial for understanding the diversity of learning motivation and academic performance. Students with different forms of learning goals and sources of motivation exhibit significant differences. For example, science and engineering students may be more focused on external motivations such as employment prospects and research projects, while liberal arts students may be more driven by intrinsic motivations, primarily centered on knowledge exploration and personal interests. Additionally, students of different grades also exhibit varying learning motivations. Lower-grade students may pay more attention to course requirements and external rewards, while higher-grade students may display more intrinsic motivation, especially in the upper stages of learning motivation (Xu, 2023). Through an in-depth analysis of differences in learning motivation based on discipline and grade, we can reveal the dynamic changes in motivation types and provide educators with quantitative teaching strategies to help them better stimulate students' learning motivation and interest, thereby optimizing academic performance.

4.3 How to Enhance the Intrinsic Motivation of College Students Through Educational Measures, Thereby Promoting Their Academic Performance

Enhancing students' intrinsic motivation is a key factor in achieving long-term academic success. Research indicates that educational interventions can effectively stimulate students' intrinsic motivation, thereby improving their learning performance and academic achievements (Gao, 2021). For instance, optimizing teaching design, providing emotional support, making teaching content more operational, and cultivating autonomous learning abilities have all been proven to significantly enhance students' intrinsic motivation. Furthermore, teacher support and encouragement, as well as peer interaction and collaboration, also play a crucial role. However, existing research primarily focuses on stimulating college students' intrinsic motivation in the short term, with a lack of exploration into long-term intervention measures. Therefore, this study will further investigate how to enhance college students' intrinsic motivation through educational interventions and analyze its impact on long-term intervention measures.

5. Research Purpose

The main objective of this study is to:

Explore the impact of intrinsic and extrinsic motivation types on academic performance among students at Jilin University, and analyze their specific mechanisms of action: Learning motivation is an important factor affecting students' academic performance, especially in higher education settings. The type of motivation (intrinsic or extrinsic) students possess has a significant impact on their academic achievements (Ryan & Deci, 2020). This study aims to delve into the effects of intrinsic and extrinsic motivation on college students' academic performance and analyze the specific mechanisms they form in academic achievement. Specifically, this study will explore the correspondence between intrinsic and extrinsic motivation through quantitative analysis and model construction, and how they affect students' academic performance through indicators such as learning strategies and learning engagement.

Investigate the impact of different types of motivation on college students' learning strategies, and subsequently, their academic performance: Learning, as a crucial factor influencing academic outcomes, is profoundly

influenced by students' learning motivation (Zimmerman, 2002). This study aims to explore the effects of intrinsic and extrinsic motivation on college students' learning strategies. Specifically, it focuses on how intrinsic motivation encourages students to adopt deep learning strategies, whereas extrinsic motivation may lead them to adopt surface learning strategies (Deci & Ryan, 2021). By examining the effectiveness of learning strategies, this study seeks to reveal the specific impacts of motivation types on the learning process and how these impacts ultimately manifest in academic performance.

Propose educational strategies and suggestions to enhance students' learning motivation, especially intrinsic motivation, in order to promote the improvement of college students' academic performance: Enhancing students' learning motivation, especially intrinsic motivation, is a key approach to improving academic performance (Gao, 2021). Based on the above research findings, this study will propose a series of educational intervention measures and strategies aimed at stimulating students' intrinsic motivation and enhancing their learning engagement and academic performance. These strategies include optimizing teaching design, strengthening teacher-student interaction, providing emotional support, and so on (Li & Zhang, 2020). In addition, the study explores how cognitive exploration can maintain students' intrinsic motivation through long-term educational interventions to ensure continuous improvement in their academic performance.

6. Research Methods

This study adopts a research method combining questionnaire survey and data analysis. The specific steps are as follows:

1) Questionnaire Design and Distribution: Design a questionnaire that includes a learning motivation scale and an academic performance survey, covering multiple dimensions such as students' intrinsic motivation, extrinsic motivation, learning strategies, subject preferences, etc. The questionnaire is distributed to college students through an online platform, and over 500 valid questionnaires have been collected.

2) Data Analysis: Conduct SPSS statistical analysis on the collected data, utilizing methods such as descriptive statistical analysis, correlation analysis, and regression analysis to explore the relationship between learning motivation and academic performance.

7. Research Results

This study explored the impact of students' learning motivation on their academic performance in universities through questionnaire surveys and data analysis. The following is a detailed analysis of the research results:

7.1 Sample Characteristics

This study collected a total of 500 questionnaires, involving students from different disciplines, including science and engineering, liberal arts, business, art, and other majors. The students' grades ranged from freshmen to seniors. According to data analysis, 45% of the sample were male and 55% were female. In addition, 58% of the participants indicated that they were influenced by external rewards and punishment mechanisms in their studies, while 42% of the students indicated that they mainly relied on personal interests and intrinsic motivation to learn.

7.2 The Relationship Between Learning Motivation and Academic Performance

Through an analysis of the correlation between students' learning motivation and academic performance, the study found a significant positive correlation between intrinsic motivation and academic performance. Specifically, students with internal motivation perform well in academic achievements, indicating that students' interest and identification with the learning content itself play an important role in promoting academic performance.

Table 1. Correlation analysis between learning motivation and academic performance

Types of learning motivation	Academic performance (r-value)
intrinsic motivation	0.68
Extrinsic motivation	0.29

Note: * $p < 0.01$, $p < 0.05$.

As shown in Table 1, the correlation between intrinsic motivation and academic performance is 0.68, reaching a statistically significant level. In contrast, the correlation of extrinsic motivation is lower, at 0.29, and although it is also statistically significant, it is much lower

than that of intrinsic motivation.

7.3 The Influence of Intrinsic Motivation and Extrinsic Motivation

Further regression analysis revealed that intrinsic motivation explained students' academic performance much more significantly than extrinsic motivation. After controlling for variables such as gender, grade, and major, intrinsic motivation still significantly predicted students' academic performance ($\beta = 0.62$, $p < 0.01$), while the influence of extrinsic motivation was weak ($\beta = 0.22$, $p < 0.05$). This finding suggests that students' intrinsic interest and satisfaction in learning activities have a far greater impact on their academic performance than external rewards and reward mechanisms.

Table 2. Regression Analysis Results

variable	Academic performance β value	t-values	p-value
Intrinsic motivation	0.62	8.75	0.000
Extrinsic motivation	0.22	3.05	0.002
Major	0.10	1.42	0.16
Grade	0.07	0.98	0.32

Note: * $p < 0.01$, $p < 0.05$.

7.4 The Relationship Between Types of Learning Motivation and Learning Strategies

Furthermore, the study also found a significant relationship between the type of learning motivation and the learning strategies adopted by students. Students with intrinsic motivation and effective motivation often adopt more learning strategies, such as deep thinking, long-term planning, and actively seeking learning resources, which help them perform better in academic tasks. Students with extrinsic motivation rely more on short-term goals, strategies to avoid failure, and learning methods that rely on external rewards.

After comparing the learning strategies of students with different motivation types, the study found a significant positive correlation between the learning strategies of intrinsically motivated students and their academic performance ($r = 0.75$, $p < 0.01$), while the correlation between the learning strategies of extrinsically motivated students and their performance was weaker ($r = 0.32$, $p < 0.05$).

7.5 Motivational Differences Under Different Themes and Backgrounds

This study also analyzed the differences in learning motivation among students from different disciplines and educational backgrounds. The research results indicate that the intrinsic motivation of students in liberal arts and business disciplines is generally stronger than that of students in science and engineering disciplines and the arts. Especially in liberal arts majors, students show more interest in knowledge and a need for intrinsic exploration, which makes them more proactive and innovative in their studies. In contrast, students in science and engineering disciplines are often driven by external evaluation and performance pressure, with relatively stronger extrinsic motivation.

Table 3. Differences in Learning Motivation Across Different Discipline Backgrounds

Subject type	intrinsic motivation	Extrinsic motivation
Arts	4.32	3.58
Business	4.20	3.65
Science and engineering	3.98	4.02
Arts	4.10	3.95

Note: 1-5 quantity scale, with 5 being the highest.

7.6 Investigation Results

Through in-depth interviews, it was further revealed that many students indicated that their intrinsic motivation for learning is often closely related to their interest in the teaching content, the teaching methods of their teachers, and the alignment with their personal interests. Some students mentioned that if the school's curriculum could better integrate with real life and students' interests, it might enhance their intrinsic motivation. On the other hand, extrinsic motivation often comes more from parents' expectations and society's evaluation of academic performance.

8. Summary

Intrinsic motivation has a significant positive impact on academic performance. If college

students can develop a strong interest in learning and be passionate about spiritual learning, their academic performance will be significantly improved. The role of extrinsic motivation is relatively minor. External rewards and punishments, as well as certain pressures in programming, affect students' learning, but have a small long-term impact on academic performance. The intrinsic role of learning strategies, learning motivation further affects performance by influencing students' learning strategies. The intrinsic motivation of students' learning strategies is usually more positive and effective. There are differences in learning motivation among students of different disciplines. Students in liberal arts and business disciplines have stronger intrinsic motivation, while students in science and engineering disciplines rely more on extrinsic motivation. The results of this study provide a theoretical basis for higher education teaching reform, especially emphasizing the importance of cultivating students' intrinsic motivation. Future important research can further explore how specific educational interventions can stimulate students' intrinsic motivation in practice and improve academic performance through motivation.

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