

# The Relationship Between Learning Motivation and Learning Anxiety of College Students

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**Abstract.** In contemporary society, the escalating anxiety among college students has emerged as a pressing social concern, impacting both their mental well-being and academic performance by influencing levels of learning motivation. This research posits a negative correlation between the burgeoning learning anxiety and the motivation to learn among college students. Employing a quantitative research approach, data is gathered through structured questionnaires, and subsequent analysis is conducted using SPSS statistical software to derive meaningful insights. The study primarily focuses on Chinese college students, aiming to unveil the intricate relationship between learning anxiety and motivation. Through this investigation, the researchers seek to formulate strategies that mitigate learning anxiety and concurrently bolster intrinsic motivation for sustained learning among Chinese college students. This research serves as a key step in understanding and addressing the contemporary challenges associated with the mental health and academic performance of college students, paving the way for interventions that foster a positive learning environment.

## 1 Introduction

### 1.1 Background

Nowadays, the increasing anxiety level of college students not only affects their mental health but also affects their academic performance [1]. The high or low anxiety level of college students has a negative impact on their academic performance [2]. In addition, learning motivation, namely internal or external motivation, has an impact on academic performance, and the stronger the learning motivation, the higher the academic performance of college students [3, 4]. Intrinsic motivation refers to engaging in behavior that is intrinsically satisfying or pleasurable and does not depend on any outcome separate from the behavior itself. In contrast, extrinsic motivation refers to the performance of an action that is fundamentally dependent on the achievement of an outcome separable from the action itself, performed in order to obtain some other result [5].

Some of the recent studies have used Structural Equation Modeling (SEM) to show that linear algebra self-efficacy of liberal arts college students has a direct impact on learning motivation, while self-efficacy is directly affected by learning interest and learning anxiety, so it is concluded that self-efficacy is the medium. Learning interest and learning anxiety have an indirect impact on learning motivation [6]. In addition, Amos 24.0 was used in this study to conduct data analysis and

model verification to demonstrate this conclusion. In addition, another paper studied the relationship between math learning motivation and math anxiety by paying special attention to the types of math motivation [7]. This study included 73 articles (80 independent samples, total  $N = 95,872$ ) with a total of 142 effect sizes. Finally, they found a negative relationship between math motivation and anxiety. In addition, another article separated promotion anxiety from general anxiety and explored the relationship between them and college students' foreign language learning motivation [8]. This study used the Achievement Anxiety Test Scale (AAT) and Academic Motivation Scale (AMS) to collect data from 173 Chinese students and used the Pearson correlation method to correlate the collected data. Finally, the results of this study show that anxiety is significantly and positively correlated with all types of motivation. These articles can provide some reference value for this study.

### 1.2 Literature review and research progress

There have also been many researches on the relationship between college students' learning motivation and learning anxiety, but there are still some problems. This study will take college students as the research object, not only limited to the study of English and higher mathematics but also expected to investigate the influence of college students' learning motivation on learning anxiety. This study hypothesized that the

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influence of learning motivation on learning anxiety is positive, and the results of this study can supplement the existing research and reveal the comprehensive influence of learning motivation on the learning anxiety of college students more comprehensively.

### 1.3 Motivation for the paper

In the current social context, the rising levels of academic anxiety among university students have become a pressing societal concern [9]. This phenomenon not only impacts the mental well-being of students but also directly correlates with their academic performance. However, there is a relative scarcity of in-depth research on the relationship between academic motivation and learning anxiety among university students. Existing literature predominantly focuses on primary and secondary education levels, leaving a research gap regarding this specific demographic. Therefore, this study aims to fill this void, delving into the comprehensive impact of academic motivation on learning anxiety among university students. By scientifically exploring the relationship between academic motivation and learning anxiety, researchers can gain a better understanding of the learning experiences of university students. This research motivation seeks to provide a theoretical foundation for developing personalized and targeted educational interventions and support measures, ultimately contributing to the enhancement of students' psychological well-being.

### 1.4 Paper Structure

This paper will thoroughly investigate the contemporary relationship between academic motivation and learning anxiety among university students. The introduction will acquaint readers with the study's theme, while the research background will systematically highlight the significance of academic motivation and learning anxiety, underscoring the necessity of this study. Through a comprehensive review, this paper will examine related research, uncover current research gaps and limitations, and establish the theoretical foundation for the questions posed in this study. The methodology section will

elucidate the questionnaire design, data collection methods, and procedures, ensuring the study's reliability. Subsequently, the results will focus on analyzing the data generated from the questionnaire. The discussion will integrate the analyzed data to explore in-depth the relationship between academic motivation and learning anxiety. Finally, the conclusion will synthesize the findings, identify potential limitations, suggest future research directions, and offer valuable insights relevant to practical educational contexts.

## 2 Methodology

### 2.1 Sample

According to Table 1, 73 questionnaires were distributed, and 50 valid questionnaires were recovered (effective recovery rate 68.49%), of which 52.00% (26) were male and 46.00% (23) were female, one participant preferred not to say. The study focuses on the diversity of college students and therefore the researchers give participants the right not to write their gender. The participants in this study were undergraduate students from several universities in China, and the age range of participating students was concentrated between 18 and 25 years old. This study will collect participants' learning motivation and anxiety levels using standardized learning motivation and anxiety measurement tools in the form of a self-reported questionnaire. In this study, the researchers took into account other factors that may have an impact on the relationship between learning motivation and anxiety, such as gender, social support, etc. The results of this study will provide insight into the relationship between learning motivation and anxiety of college students, and provide a scientific basis for formulating targeted educational interventions and support measures. This study will cover information such as family income level, family education level, etc., to explore the potential impact of these factors on the relationship between learning motivation and learning anxiety. Additionally, the study will collect information, including the major, to understand the possible impact of disciplinary differences on the relationship between learning motivation and anxiety.

**Table 1.** Gender.

Item	Frequency	Percentage	Cumulative Percentage
Prefer not to say	1	2.00%	2.00%
Female	23	46.00%	48.00%
Male	26	52.00%	100.00%
Sum	50	100.0%	

## 2.2 Questionnaire Design

### 2.2.1 Academic Motivation Scale

AMS consists of 28 items that are distributed across seven different dimensions to measure different types of learning motivation [10]. The responses for each item were on a seven-level Likert scale (1 = strongly disagree, 7 = strongly agree). The researchers found that the English version of the scale, renamed the Academic Motivation Scale (AMS), had a satisfactory level of internal consistency (mean alpha value = 0.81) [11]. AMS covers a wide range of learning motivation types and has good content validity. Factor analysis was performed to verify the structure of AMS to ensure that the measurements in each dimension were correlated.

### 2.2.2 Self-Rating Anxiety Scale

SAS is typically made up of 20 items, each of which is answered on a four-degree scale (1 = rarely, 4 = often) [12]. These 20 programs cover multiple aspects to get a comprehensive picture of an individual's anxiety symptoms. For the SAS-Indonesia version, the researchers looked at internal consistency. For 20 projects, Cronbach has an alpha value of 0.658, while for 19 projects, the alpha value is 0.691, indicating a relatively high validity.

## 3 Results

In this study, college students of different genders and grades demonstrate diverse levels of learning motivation and anxiety. According to Table 2, the population was spread out among 17-year-olds at 1.96%, 18-year-olds at 29.41%, 19-year-olds at 13.73%, 20-year-olds at 15.69%, 21-year-olds at 19.61%, 22-year-olds at 3.92%, 23-year-olds at 7.84%, and 24-year-olds at 7.84%. For the male sample, the proportion was 52.94%, while for the female sample it was 45.10%. From the grade point of view, more than 30% of the participants are freshmen, constituting the largest grade group.

In this part, the researchers used SPSS software to conduct a comprehensive analysis of the data collected in the questionnaire. This study cited the Academic Motivation Scale (AMS) and Zung's Self-Rating Anxiety Scale (SAS), while AMS has a satisfactory internal consistency level (average  $\alpha$  value = 0.81) [10-12]. The Cronbach alpha value of SAS is high, indicating high reliability [12]. Both scales have been verified by a large number of studies conducted by many researchers and have high reliability. Therefore, the revised questionnaire in this study has good reliability and validity.

**Table 2.** Age.

Item	Frequency	Percentage	Cumulative Percentage
17.0	1	2.00%	2.00%
18.0	15	30.00%	32.00%
19.0	6	12.00%	44.00%
20.0	8	16.00%	60.00%
21.0	10	20.00%	80.00%
22.0	2	4.00%	84.00%
23.0	4	8.00%	92.00%
24.0	4	8.00%	100.00%
Sum	50	100.0%	

Table 3 shows the mean values of the variables and the results of the standard error calculations. Table 2 shows the negative correlation between learning motivation and anxiety. As can be seen from Table 4, the Pearson correlation of the variables is -0.384, and there is a moderate correlation between learning motivation and anxiety, and the significance P value is <0.05, indicating that there is a significant correlation between learning motivation and anxiety.

**Table 3.** Means, Standard Error of the Means among Variables (N=50).

Variables	M	SEM
AMS	63.18	3.52
SAS	41.10	1.16

**Table 4.** Correlations among Variables (N=50).

Variables		M	SEM
AMS	Pearson Correlation Sig.(2-tailed)	1	-.384 .006
SAS	Pearson Correlation Sig.(2-tailed)	-.384 .006	1

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## 4 Discussion

Among Chinese college students, the higher the level of learning anxiety, the lower the level of learning motivation, because there is a negative relationship between learning motivation and learning anxiety, and the intensity is not low, which is basically consistent with the hypothesis of this study. Some studies have found a negative correlation between learning motivation and anxiety [7]. Therefore, Chinese universities should pay attention to the mental health level of college students, such as the level of learning anxiety, and pay attention to other aspects of college students, such as physical education. In addition, Chinese college students should also do more extracurricular activities to reduce their learning anxiety [13]. Additionally, parents should relieve their anxiety by encouraging and caring for college students [14].

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## 5 Conclusion

Some studies have used structural equation modeling to show that the linear algebra self-efficacy of liberal arts college students has a direct impact on learning motivation, while self-efficacy is directly affected by learning interest and learning anxiety, so it is concluded that with self-efficacy as the medium, learning interest and learning anxiety have an indirect impact on learning motivation. In addition, there is another article that separates promotion anxiety from general anxiety and explores the relationship between them and college students' foreign language learning motivation. This study used the Achievement Anxiety Scale (AT) and

Academic Motivation Scale (AMS) to collect data from Chinese students, and the Pearson correlation method was used to correlate the collected data. There have been many studies on the relationship between college students' learning motivation and learning anxiety. The purpose of this study is to explore the relationship between learning motivation and learning anxiety in Chinese college students and to provide a theoretical basis for discovering the causes of psychological problems in Chinese college students. In particular, this study examines the relationship between motivation and anxiety in college students during the learning process, while other studies have studied the two variables separately or the relationship between the two at different ages. Therefore, the results of this study can not only be used to study college students' mental health problems but also to study how to encourage college students to exert their intrinsic motivation to actively learn. Moreover, this study also has some limitations related to samples. College students in each place are not randomly and equally sampled by stratified sampling, so the results may have certain errors. In the future, the researchers hope to increase the sample size through the cooperation of local universities, such as the reward system, and make the sample more representative through stratified sampling.

## Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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