

An Investigation into How Learning Motivation Affects College Students' Major Choices and Academic Performance in China

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Abstract. This article explores the relationship between learning motivation, major choice, and academic performance among Chinese college students. The study highlights the importance of motivation in shaping students' learning behaviors, academic achievements, and career choices. It identifies various factors that influence student motivation and suggests ways to improve it. China has the world's largest higher education system, with millions of students taking college entrance exams every year, signifying fierce competition. Chinese college students' motivation to study varies across disciplines, institutions, and academic years. Some students are driven by family and social expectations to pursue high-paying careers and social status, while others lose learning motivation due to internal and external factors, leading to academic burnout and negativity. Understanding the factors that influence Chinese college students' motivation is crucial for improving the quality of higher education and student development. This study provides valuable insights for policymakers and educators to create a supportive learning environment that enhances student motivation and academic performance.

Keywords: College Students, Learning Motivation, Major Choice, Academic Performance.

1. Introduction

Education, as one of the key elements in the advancement of a nation's social development and individual success, is not only a process of information transfer and skill development but is also influenced by the motivation of the learner. Motivation refers to an individual's level of commitment to the learning task, the pursuit of learning goals, and motivation in the learning process, which influences students' learning behaviors, academic performance, and career choices [1]. In China, where higher education has been expanding rapidly and changing over the past years, the issue of college students' motivation to learn has become more pronounced. Faced with a multitude of disciplines and areas of specialization, college students are largely influenced by their motivation when choosing their majors, which in turn has an impact on their academic performance.

China has the largest higher education system in the world, with millions of students taking the college entrance exams every year, signifying fierce competition [2]. Against this backdrop, Chinese college students' motivation to study varies across disciplines, institutions, and academic years. On the one hand, some students are driven by family and social expectations to pursue high-paying careers and social status, which leads them to choose certain popular majors rather than their true interests [3]. On the other hand, some students are likely to lose learning motivation in their pursuit of education due to internal and external multidimensional factors, which in turn lead to academic burnout and negativity [4]. It can be seen that the learning motivation of Chinese college students is not only related to individual characteristics but also closely related to the educational system and social and cultural background. To some degree, understanding the changes and influencing factors of Chinese college students' motivation is crucial for improving the quality of higher education and student development.

Although the importance of motivation is widely recognized in the field of education, there remains a research gap in the in-depth study of the impact of motivation on Chinese college students' major choices and academic performance. Existing research focuses mainly on the interweaving connection between the education systems of Western countries and students, which is difficult to apply directly to the specific context of China [2]. Hence, it is imperative to explore in depth the

different types of motivation and their operating mechanisms among Chinese college students as a means of exploring how motivation affects their choice of major and academic performance.

This essay aims to investigate the roles played by learning motivation in college students' choices of professional majors and their academic performances, thus providing feasible suggestions for education policymakers, institutions, and even parents regarding supporting students' academic improvement and career prospects, thus facilitating their lifelong development. To this end, this essay is divided into six main sections. The first section introduces the research topic, background, and objectives. In the second section, diverse learning motivation types are identified, laying a theoretical foundation for the following discussion. The third and fourth sections discuss how learning motivation influences major choices and academic performance, respectively. In the fifth section, corresponding suggestions are proposed. Lastly, the main arguments of this essay are summarized in the sixth section.

2. Types and Characteristics of Learning Motivation

Motivation is considered to be an enhancing process of cognition that influences how information is processed [5]. Motivation is a key factor that affects students' learning and can be divided into intrinsic motivation and extrinsic motivation. Previous practices regarding student groups and their learning motivation have shown that students with learning motivation are more likely to focus their attention and comprehend materials efficiently, rather than simply engaging in repetitive learning processes [6-8]. They demonstrate greater innovation during this process as well [7]. However, motivation is an abstract term and a complex psychological state that is challenging to directly observe and quantify [9]. This article also aims to provide separate explanations for intrinsic and extrinsic motivation, as well as clarify their measurement standards. This can serve as a reference for students, scholars, or other interested readers, offering effective insights to guide their practical endeavors.

2.1. Intrinsic Motivation

Intrinsic motivation is a term used to describe the motivation that individuals experience while engaging in a task. This type of motivation stems from individuals subjectively perceiving the task as interesting or enjoyable. The inherent interest, curiosity, and sense of achievement are associated with teach prompt individuals to engage in learning activities spontaneously and to derive satisfaction from the process [8]. Individuals with intrinsic motivation tend to sustain their learning intention for longer periods and gradually specialize in specific fields, becoming professionals with industry competitiveness [7]. In the Chinese job market, there are specific expectations regarding the choice of majors for college students, particularly in deeper research fields such as chemistry, biology, and engineering. This requires students to fully analyze their internal interests and integrate their personal interests, life goals and career development plans.

2.2. Extrinsic Motivation

Extrinsic motivation refers to the perception that doing something will lead to rewards or help avoid punishments. These motivations could include money, gifts, or recognition. In the context of learning, students may be motivated by praise, enhancing their resumes, achieving good grades, or personal advancement. These external factors can influence students' learning motivation [9]. However, these motivations are not derived from a genuine interest in learning itself but rather from an interest in the rewards and outcomes that learning can bring. This lack of intrinsic drive can adversely affect the stability of students' learning. If they cannot obtain the specific rewards that drive them, they are more likely to give up or feel disheartened, unable to motivate themselves [8].

2.3. The Characteristics and Measurement of Learning Motivation

Learning motivation is multi-dimensional, dynamic and influential. It is produced by the interaction of internal motivation and external motivation, and the orientation of different students' learning motivation is also affected by the change in individual environment, students' learning behavior and related performance [6]. Students' learning motivation is also closely tied to cultural values and the employment environment they are in. For example, Chinese universities may prioritize academic achievements in specific fields. Additionally, the highly competitive job market in China compels students to prioritize practicality and commercial aspects while neglecting their own interests and hobbies.

3. The Relationship Between Learning Motivation and Major Choice

3.1. Interests and Major Choices

Academic interest can be seen as an intrinsic motivation in the choice of major by college students. The Self-determination Theory emphasizes the individual's autonomy, sense of competence and sense of belonging in behaviour and decision-making, three basic psychological needs that are essential for intrinsic motivation and sustained commitment [10].

Academic interest is often related to an individual's autonomous exploration and understanding of knowledge, which echoes the need for autonomy in self-determination theory [11]. It can be inferred that when college students show a strong interest in a subject, they are more likely to spontaneously invest time and energy in exploring the field, thus fulfilling their need for autonomy.

Sense of competence is an individual's perception of their own ability to perform a task or activity [10]. Academic interests can enhance an individual's sense of competence in learning a particular subject because interests stimulate a desire for knowledge and skills. When it comes to major choices, college students are more likely to choose a field that fits their academic interests because they believe they can better realize their potential and increase their sense of competence in that field.

Sense of belonging is the feeling that an individual feels connected to a group or domain [10]. Academic interests motivate university students to integrate more deeply into academic communities in related subject areas, such as interacting with like-minded peers and engaging in academic communities. This sense of belonging is conducive to solidifying academic interests and makes individuals more committed to choosing majors related to their interests.

3.2. Career Goals and Major Choices

Career goals play an important role in college students' major choices, directly affecting their expectations and the level of effort they put into their future career direction. Based on Social Cognitive Career Theory, individuals develop perceptions of their career interests and abilities through social learning and cognitive processes when setting career goals and making career decisions [12].

Individuals' career goals can shape their expectations for future career development [12]. When students are clear about their career goals, they are more likely to choose a major that is directly related to their goals because such a choice is considered an effective pathway to their desired career. For example, a student who aspires to become an engineer might choose a related engineering major to gain the necessary skills and knowledge to better achieve their career goals. This choice is a strategic response to an individual's career goals and reflects proactive thinking about career planning.

3.3. External Factors and Major Choices

First, family background and expectations play an important role in college students' choice of major. Individuals are often influenced by their family's expectations of a particular career or profession stemming from the family's cultural traditions, values, and definition of success [13]. For example, if a family has a strong tradition in medicine, the parents will expect their children to

continue that tradition by choosing to major in medicine. This shows that family background and expectations directly influence the tendency of university students to choose their majors, making it more likely that they will choose a field that is in line with their family's expectations to gain their family's support and approval.

Secondly, the recognition and social status of different occupations in society also influence the choice of majors by university students. Certain professions may be viewed as more noble and valuable by society, leading students to prefer majors related to those professions. For example, in some cultures, fields such as law, medicine and engineering are considered to be successful and respected professions, so students may be influenced by societal perceptions to choose majors in these fields in pursuit of social recognition and professional status [14].

Finally, economic factors also influence students' choice of their major in college. On the one hand, the match of the job market prompts students to think about whether their chosen field of study will ensure that they will be able to find a stable job after graduation [11]. On the other hand, in an unstable economic environment or growing demand in a particular field, students may be more inclined to choose majors that offer good employment opportunities [14]. Such choices are an individual response to economic realities and are designed to increase employment competitiveness and ensure future career stability. Thus, the economic environment directly shapes the rational decision-making of university students in their choice of profession.

4. The Impact of Learning Motivation on the Academic Performance of Chinese University Students

Learning motivation plays a vital role in influencing the important choices and academic performance of university students in China. Both intrinsic motivation, driven by internal interest and satisfaction, and extrinsic motivation, driven by external rewards and consequences, have been found to impact students' major choices and their achievement in college [15]. This paper will discuss on the impact of learning motivation on the academic performance of Chinese university students.

4.1. The Significance of Learning Motivation in Chinese University Students

In the short-term, motivation directly impacts how students approach their studies and performances on exams or assignments. Students who are intrinsically motivated by enjoyment of learning and interest in the subject tend to have better time management, activate more cognitive strategies, and persist through challenges [16]. Intrinsically motivated students are more likely to initiate study sessions, review material regularly instead of cramming, and structure their study time efficiently. They employ cognitive strategies like connecting concepts, self-testing, and active note-taking rather than just passive reading. When they encounter difficult concepts or problems, intrinsically motivated students spend more time figuring it out rather than giving up quickly [16]. Further research by Taylor found that intrinsic motivation was associated with greater perceived competence and autonomy among university students, which in turn predicted higher GPAs [17]. Students who were intrinsically motivated viewed their studies as interesting, enjoyable, and relevant to their personal goals. They felt more confident in their abilities to learn and succeed (competence), and felt they had more control over their education (autonomy). These self-perceptions then predicted higher academic achievement over the semester.

4.2. Intrinsic vs. Extrinsic Motivation on Study Habits and Performance

Extrinsic motivations like rewards, competition, evaluations, or pressure from parents also influence students' immediate study habits and test performance. These external motivators may urge students to put in more time and effort. However, research finds that extrinsic motivation often correlates with superficial learning strategies like memorization [15]. Students focused on external approval or consequences tend to prioritize task completion over comprehension and grasping the significance of what they are learning. For instance, a student motivated by competitive ranking may

devote effort to memorizing formulas but lack a conceptual grasp of the theories behind them as well as an understanding of their purpose and interpretation. Their test scores depend on the extent to which the assessment measures deep understanding versus factual recall [18].

4.3. Influence of Intrinsic Motivation on Perceived Competence and Academic Achievement

In the long run, motivation shapes students' major and career trajectories by influencing their persistence, resilience, and lifelong learning habits. Intrinsic passion for a subject motivates students to pursue further education and work in that field [16]. An engineering student driven by intrinsic enjoyment of technical problem solving is more likely to pursue a Ph.D. and career in research and innovation. Extrinsic motivations may initially direct students toward lucrative or high-status majors but are less likely to sustain them through the challenges of advanced study and professional growth [19]. Learning motivation also affects the extent to which students develop self-regulation, initiative, and love of learning. Students focused on internal mastery are more likely to cultivate positive academic habits, like seeking help when needed, which enable long-term educational attainment [15]. On the other hand, students reliant on external motivation often struggle when structure and incentives are removed. They may lose momentum in graduate school or lose interest in professional development without grades, assessments or family oversight [19]. Rather than deeply understanding concepts, extrinsically motivated students aim to complete tasks and earn rewards through superficial learning strategies. Their motivation tends to be short-term and contingent on external factors, unlike intrinsically motivated students who pursue knowledge for its own sake.

5. Recommendations

On the one hand, universities need to encourage college students to explore their self-awareness and interests. First, this can be accomplished by offering a broad general education program or a basic interdisciplinary course. For example, computer science majors may find a strong interest in the field of human-computer interaction in a foundational course in psychology, which may inspire a deeper exploration of interdisciplinary fields [11]. In addition, research projects, academic lectures, and industry practice opportunities may be offered to gain a deeper understanding of the realities of a specialized field. By interacting with professors and industry professionals, students can expand their knowledge of their area of specialization and discover their interests in practice. Specifically, a student may learn about real-world work in the engineering field through an internship, which can lead to a clearer understanding of his or her interest and comfort level in the field. In addition, various clubs and volunteer activities play an integral role in the self-awareness and interest exploration of college students. These activities not only help develop personal skills, but also expand extracurricular interests. For example, students who are passionate about environmental protection may deepen their understanding of the field of environmental science by participating in campus environmental organizations, which provides more possibilities for their future professional choices [14]. Self-awareness and interest exploration methods such as these can help college students make more informed choices about majors that match their personal interests, thereby increasing their motivation and engagement in learning. This process of in-depth thinking and exploration is an important foundation for major selection and helps students better plan their future academic and career development.

On the other hand, universities have an obligation to make clear career plans for undergraduate students while emphasizing the cultivation of practical skills in the industry. First of all, universities can actively cooperate with the industry to provide students with abundant internship opportunities. Through actual participation in real-life scenarios, students can have a more comprehensive understanding of the actual operation of their specialized fields, especially in industry-led majors like marketing, where students are able to learn real-world marketing strategies and build the networks they need to do real work that they cannot get in a textbook [10]. Such practical experiences not only enhance students' professionalism but also help them be clearer about their career direction in the

field. Secondly, colleges and universities can encourage students to participate in project-based learning and practical activities to develop practical problem-solving skills. By participating in team projects or practical activities, students can apply the theoretical knowledge they have learned in the classroom to real projects. Such practical experience helps students gain a deeper understanding of their field of specialization and provides practical support for their future career planning. In addition, colleges and universities can consider establishing industry-related laboratories and practice bases. For example, a student majoring in environmental science can experience first-hand the practical work of environmental monitoring and data analysis by participating in a laboratory research project, thus gaining a clearer understanding of the career path in the field [13]. This real-world experience not only helps students be more competitive in the job search process but also provides them with a solid foundation for their future careers.

Developing intrinsic motivation is key to promoting deeper, engaged learning and sustained achievement among Chinese university students. Research overwhelmingly demonstrates intrinsically motivated students who derive satisfaction from the learning process itself have better academic habits, conceptual understanding, and lifelong educational pursuits compared to those reliant on external rewards or pressures (15; 16). Several recommendations emerge for how educators, parents, and students can cultivate intrinsic motivation:

First, instructors should utilize autonomy-supportive teaching methods. According to self-determination theory, autonomy is a basic psychological need students must experience for intrinsic motivation to develop [20]. Providing meaningful rationales for learning activities, offering choices, encouraging independent problem-solving, and minimizing controlling language facilitate students' sense of ownership and volition. This predicts greater interest, effort, and performance [17]. Rather than expecting passive absorption of knowledge, teachers can design active learning experiences. For example, problem-based learning activities with real-world relevance and opportunities for discussion and reflection boost autonomy and result in deeper understanding compared to traditional lectures [21].

Second, reliance on extrinsic rewards and consequences should be minimized. While external incentives like points, prizes, and grades may temporarily boost study time, research finds they often undermine intrinsic motivation over the long-term [22]. Students focused on external recognition tend to avoid risk and adopt superficial strategies aimed at getting the "right" answer rather than meaningful learning. Praise and positive feedback that affirms competence and progress made are preferable to task-contingent rewards [23]. Parents can also explain the deeper purpose and utility behind learning tasks to children.

Third, instructors and parents should model curiosity, lifelong learning habits, and communicate the meaningfulness of education. Students are motivated when they appreciate the personal significance and expected value of what they are learning [15]. Faculty sharing their intellectual passions and real-world experiences, discussing how concepts apply in practice, and providing opportunities for students to evaluate contemporary issues and events in light of their emerging knowledge enhances perceived relevance. Parents emphasizing education as a pathway for self-improvement and future opportunities also fosters students' motivation.

Fourth, students should be encouraged to connect new material to existing interests and find inherent satisfaction in mastering challenging skills. Introducing topics in a way that piques students' curiosity and taps into intrinsic interests promotes motivation and effort [24]. Having students reflect on how they plan to purposely integrate and apply what they learn also helps them internalize the value. Achieving incremental competency on difficult tasks is inherently rewarding and reinforcing. Educators can foster persistence through scaffolding and framing complex assignments into manageable subgoals.

Finally, individual and cultural views about learning may need to be addressed. Students who see intelligence as fixed are less intrinsically motivated when facing setbacks than those with growth mindsets who appreciate the benefits of effort [25]. Explicit mindset training and modeling academic grit can encourage motivation aimed at mastery over performance. Additionally, some Asian cultures

emphasize extrinsic markers like test scores or prestige as evidence of learning. Discussing cultural perspectives and reframing education as a self-transformative journey may help shift motivation inward.

Schools and educators can enhance Chinese university students' learning motivation through several key strategies. First, incorporating active learning activities like open-ended inquiry, collaborative projects, and simulations engages students' interests and sparks intrinsic motivation [26]. Training teachers in scaffolding techniques, informative feedback practices, and modeling metacognitive strategies builds students' self-efficacy, autonomy, and self-regulation. This supports the development of internal motivation. Additionally, implementing mastery-focused assessments that encourage growth and effort over comparative grading mitigates negative impacts of extrinsic motivation. Using multifaceted approaches to engage intrinsic motivation while minimizing detrimental external pressures will foster productive motivation and deeper learning [27].

6. Conclusion

This essay discusses the relationship between college student's academic motivation and their choice of major. Through an in-depth analysis of academic interests, career goals, and external factors, this essay concludes that college students' academic motivation significantly influences their major choices. From academic interest-guided in-depth exploration of disciplines to career goal-guided choice of major direction to the significant role of external factors in decision-making, this study provides insights into understanding the intrinsic motivation of college students' major choices. The dissertation's contribution is a systematic discussion of the role of these factors and a series of recommendations, including self-awareness and interest exploration, major counselling and mentoring, and internships and practical experiences, to help students clarify their career plans. However, this study has some limitations, including limitations of the research design, sample bias, and failure to explore some potential influencing factors in depth. Future research could adopt more in-depth methods, expand the sample, and dig deeper into the interaction between academic interests and career goals to improve the scientific validity and universality of the study. Through these efforts, this essay will provide a more comprehensive understanding of the relationship between college students' academic motivation and their choice of majors and provide colleges and universities with more scientific guidance strategies.

Intrinsic motivation stemming from inherent satisfaction in mastering knowledge predicts better study strategies, conceptual grasp, persistence through challenges, and sustained passion for learning and growth. Meanwhile, extrinsic motivations based on external consequences and pressures are associated with short-term efforts aimed at superficial task completion often relying on rote memorization. These findings have meaningful implications for how educators, parents, and students can cultivate productive motivation. Intrinsic motivation is essential for deep, engaged learning and persistence toward long-term educational goals. Students driven by internal interest and enjoyment demonstrate self-regulated habits, like consistent review and help-seeking, that enable academic success. They prioritize comprehension over task completion, employ cognitive strategies, and show greater resilience through difficulties. Second, extrinsic motivations centered on rewards, evaluations, competition, or parental pressures are often counterproductive. While initially prompting greater effort, this external focus promotes surface-level memorization and avoidance of risk-taking. Students rely on cramming versus spaced study and equivocate understanding for high test scores. Third, autonomy-supportive instructional approaches positively influence intrinsic motivation by meeting psychological needs for self-direction. Relevant rationales, meaningful choices, active learning, and minimized control enhance students' perceived competence, autonomy, and self-regulation. However, some limitations suggest avenues for additional research. Several studies relied on students self-reporting their motivation and learning strategies, which may not fully align with actual behaviors. More objective outcome measures could illuminate this potential perception-reality gap. Few studies examined specific subpopulations like high versus low achievers whose motivations may differ.

Longitudinal data tracking how motivations shape long-term trajectories is also scarce. Further research should evaluate the efficacy of interventions aimed at strengthening intrinsic motivation over time, such as faculty development programs, active learning curricula, or direct mindset training. Comparing motivation between rural and urban Chinese students would provide valuable sociocultural insights as well. These findings highlight key opportunities to optimize Chinese university students' motivation. Implementing autonomy-supportive and active learning approaches could strengthen intrinsic drive, while minimizing reliance on rewards or comparative grading may limit detrimental external pressures. Faculty training in providing meaningful rationales, scaffolding competency, and giving informational feedback can also enhance internal motivation and self-regulated learning habits. If educators reinforce the inherent satisfaction of mastering new skills, students are more likely to develop positive academic mindsets and lifelong study skills. Fueling Chinese students' passion and agency in the learning process itself promises to foster meaningful, sustained achievement.

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