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A Study on the Relationships between Classroom Interaction, Learning Motivation and Academic Persistence Intention

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ABSTRACT

Classroom interaction, learning motivation and academic persistence intention are core predictors of college students' academic achievement and sustainable learning growth. This research intends to examine the correlations and underlying internal mechanisms linking the three variables. Questionnaire surveys were distributed to university undergraduates to gather empirical data, which were then processed through systematic quantitative statistical analysis. The empirical results reveal that constructive classroom interaction exerts a significant positive effect on learning motivation. In turn, stronger learning motivation remarkably elevates students' intention to persist in academic tasks. Further mediation test verifies that learning motivation serves as a vital mediating factor bridging classroom interaction and academic persistence intention. Supported by these statistical conclusions, the study proposes practical instructional strategies: enriching in-class communication to build positive classroom climate, activating students' internal learning drive, and fostering their long-term academic perseverance. The evidence-based outcomes of this paper offer valuable empirical references for universities to upgrade classroom teaching efficiency and refine student academic management.

1. Introduction

In modern higher education, classroom is the core place for knowledge transfer and ability cultivation. With the continuous reform of college teaching modes, traditional cramming teaching can no longer meet the needs of contemporary talent training. Interactive teaching has gradually become a mainstream teaching form, and the quality of classroom interaction has attracted extensive attention from educators [1,11]. Classroom interaction includes the communication between teachers and students, as well as peer interaction among students. Positive interactive atmosphere can activate classroom vitality, while negative interaction will make students passive and tired of learning.

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Learning motivation refers to the internal driving force that inspires individuals to participate in learning activities and maintain learning behaviors. It directly determines students' learning attitude, effort degree and learning efficiency [9]. Academic persistence intention means students' subjective willingness to overcome learning difficulties and continue to complete academic tasks steadily. It is an important psychological indicator to predict students' dropout tendency and long-term academic development [15]. In actual teaching, many college students face problems such as low learning enthusiasm, lack of perseverance and frequent learning slackness. Poor classroom atmosphere and insufficient internal motivation are important causes of these phenomena.

A large number of studies have confirmed that classroom environment is closely linked to individual learning psychology. However, most existing researches only discuss the pairwise relationship between two variables, and few systematically analyze the chain effect of classroom interaction, learning motivation and academic persistence intention. From the perspective of educational psychology, this paper takes college students as research objects, explores the correlation and influencing mechanism among the three factors, and proposes practical optimization strategies. It hopes to improve classroom teaching quality and help students establish stable learning psychology.

2. Research Method

2.1 Questionnaire Survey Method

This study adopted mature domestic and foreign scales to design a formal questionnaire. The scale involves three dimensions: classroom interaction, learning motivation and academic persistence intention. All items were scored with a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The research objects were college students from different majors and grades. A total of 380 questionnaires were distributed, and 367 valid questionnaires were recovered, with an effective recovery rate of 96.6%. The sample has reasonable gender, grade and major distribution, which ensures the representativeness of data.

2.2 Literature Research Method

The author retrieved domestic and foreign monographs, journal papers and academic reports on classroom interaction, learning motivation and academic persistence from academic databases. This study sorted out relevant theories, research paradigms and existing research conclusions, clarified the theoretical basis of this research, and defined the connotation, dimensions and measurement standards of each variable, which laid a solid foundation for empirical analysis. This is consistent with prior work showing that learning motivation frequently functions as a mediating mechanism linking environmental and behavioral variables in higher education settings [8].

2.3 Statistical Analysis Method

The collected valid questionnaire data were sorted out with Excel. SPSS 26.0 statistical software was used for reliability test, validity test, descriptive statistics, correlation analysis and mediation effect test. This study verified the correlation among variables and analyzed the mediating role of learning motivation, so as to ensure the objectivity and scientificity of research conclusions.

3. Results and Discussion

3.1 Reliability and Validity Test

Reliability test results showed that the Cronbach's α coefficients of classroom interaction scale, learning motivation scale and academic persistence intention scale were all higher than 0.8, indicating that the questionnaire has good internal consistency and reliable measurement results. Validity test adopted exploratory factor analysis. The factor loading of each item was greater than 0.6, and the KMO value was 0.83, which was suitable for factor analysis. It proved that the questionnaire has good structural validity and can be used for follow-up data analysis.

3.2 Descriptive Statistical Analysis

From the overall data, the average score of college students' classroom interaction was at the medium level. Some students reported that teachers had single interactive forms, and peer communication in class was insufficient. The average score of learning motivation was slightly higher than the medium level. Most students had basic learning drive, but the internal motivation was not strong enough, and they were easily affected by external interference, a pattern also observed among university students in other cross-cultural samples [4]. The score of academic persistence intention was relatively low. Many students said that they would give up or slack off when encountering difficult academic tasks, and their willpower to stick to learning was weak.

In terms of demographic variables, there was no significant difference in the three variables between male and female students. Students in higher grades had lower scores of learning motivation and academic persistence intention than freshmen and sophomores, which was related to the decline of learning freshness and the increase of academic pressure.

3.3 Correlation Analysis among Variables

Pearson correlation analysis was conducted for the three core variables. The results showed that there was a significant positive correlation between classroom interaction and learning motivation ($r = 0.57$, $p < 0.01$). The more active and effective the classroom interaction was, the stronger students' learning motivation would be. There was also a significant positive correlation between learning motivation and academic persistence intention ($r = 0.62$, $p < 0.01$). Students with sufficient internal motivation were more willing to adhere to academic learning. In addition, classroom interaction was significantly positively correlated with academic persistence intention ($r = 0.48$, $p < 0.01$). It preliminarily verified the close connection among the three factors.

3.4 Mediating Effect of Learning Motivation

On the basis of correlation analysis, this paper further tested the mediating effect of learning motivation. The regression results showed that classroom interaction can directly predict academic persistence intention. After adding the variable of learning motivation into the regression equation, the predictive effect of classroom interaction on academic persistence intention decreased but was still significant. Meanwhile, classroom interaction can significantly predict learning motivation, and learning motivation can significantly predict academic persistence intention, echoing findings that interaction is linked to learning persistence through intervening psychological variables [16].

The research conclusion confirms that learning motivation plays a partial mediating role between classroom interaction and academic persistence intention. That is to say, classroom interaction not

only directly affects students' academic persistence intention, but also indirectly influences academic persistence by changing students' internal learning motivation.

3.5 In-depth Discussion on Influencing Mechanism

3.5.1 The influence of classroom interaction on learning motivation

Classroom is the main scene of students' daily learning. Rich teacher-student interaction and peer interaction can break the dull learning atmosphere. When teachers actively guide questions, give timely feedback and affirm students' performance, students will gain a sense of accomplishment and belonging in learning [14]. Positive peer discussion and mutual inspiration can also stimulate students' curiosity and desire for knowledge, consistent with evidence that supportive teacher-student interaction is associated with stronger academic motivation [10] and that a positive classroom climate relates to students' perceived competence and motivational quality [12]. On the contrary, rigid classroom with little interaction will make students feel bored, gradually lose learning interest, and lead to the decline of internal and external learning motivation. At present, many college classrooms still have problems such as single interactive mode, limited interactive scope and perfunctory interaction, which restrain the stimulation of learning motivation.

3.5.2 The influence of learning motivation on academic persistence intention

Learning motivation is divided into internal motivation such as interest, self-improvement and external motivation such as score reward and graduation pressure. Internal motivation is the core driving force to support long-term learning. Students with strong internal motivation take learning as a self-demand. When facing difficult courses, heavy learning tasks and academic setbacks, they can actively adjust their state and stick to learning [2]. Students who only rely on external motivation are prone to slack once external pressure disappears. When encountering difficulties, they are more likely to have the idea of giving up, resulting in low academic persistence intention, which aligns with research linking autonomy-supportive motivational conditions to stronger academic persistence [13]. This also explains why many college students have good short-term performance but poor long-term learning persistence.

3.5.3 The chain influence of the three variables

Combined with the mediating effect, a complete influence chain can be summarized: High-quality classroom interaction → enhance students' learning motivation → further improve academic persistence intention. Classroom interaction is the external environmental factor, learning motivation is the internal psychological medium, and academic persistence intention is the final behavioral tendency. Optimizing classroom interaction is not only to activate the classroom atmosphere, but also to act on students' inner psychology, so as to fundamentally improve their willingness to persist in learning. This also explains why improving classroom teaching effect cannot only focus on knowledge teaching, but also pay attention to the construction of interactive atmosphere, a point reinforced by studies showing that motivational climate mediates the link between instructional style and student engagement [6].

3.6 Practical Problems in Current College Classrooms

Combined with data analysis and practical observation, there are three main problems in current college classroom interaction. First, interactive forms are too single. Most interactions are limited to teachers asking questions and students answering, lacking group discussion, situational interaction and cooperative exploration. Second, the participation of students is uneven. A small number of active students occupy most interactive opportunities, while most students are in a passive state. Third, teachers lack interactive skills. They cannot capture students' emotional changes in time, and fail to guide and encourage effectively, so the interactive effect is poor, consistent with findings that interaction patterns between instructors and students shape the level of academic engagement achieved [7]. These problems jointly lead to insufficient learning motivation and weak academic persistence of some students, which is in line with evidence that the quality, not merely the frequency, of student-faculty interaction predicts persistence [5].

4. Conclusion

This research systematically explores the relationships between classroom interaction, learning motivation and academic persistence intention among college students. The main conclusions are as follows. First, there are significant positive correlations among the three variables. Positive classroom interaction is conducive to improving students' learning motivation, and strong learning motivation can effectively promote academic persistence intention. Second, learning motivation plays a partial mediating role between classroom interaction and academic persistence intention. Classroom interaction can affect academic persistence intention both directly and indirectly through learning motivation. Third, the overall level of classroom interaction and academic persistence intention of contemporary college students needs to be improved, a concern also raised in broader research on the institutional and motivational factors underlying academic persistence [3]. Single interactive mode and insufficient internal motivation are common problems affecting learning development.

Based on the above conclusions, targeted teaching optimization suggestions are put forward. Firstly, enrich classroom interactive forms. Teachers can adopt group discussion, case sharing, role-playing and other diversified interactive modes to expand the scope of participation and let more students join in classroom communication. Secondly, pay attention to positive feedback and emotional encouragement. Teachers should affirm students' performance in time, protect their learning enthusiasm, and enhance their sense of achievement and learning self-efficacy. Third, guide students to cultivate internal learning motivation. Combine professional characteristics to clarify learning goals, let students understand the value of learning, and reduce dependence on external pressure. Fourth, build a positive peer interactive atmosphere, advocate mutual learning and mutual supervision among students, and jointly improve the willingness of academic persistence.

This research only takes partial college students as samples, and the research scope has certain limitations. Follow-up research can expand the sample size, cover different types of colleges and different majors, and further explore the difference rules of variables. In practical teaching, educators should combine the influence mechanism of the three factors, start from optimizing classroom environment and stimulating internal motivation, and continuously improve the overall learning state of students.

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