Research on the Impact of Classroom Interaction on Academic Achievement in Chinese Language and Literature Major: Taking Learning Engagement as a Mediating Variable

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Abstract: This study aims to explore the impact of classroom interaction in Chinese language and literature majors on students' academic achievement, and to examine the mediating role of learning engagement. A questionnaire survey was conducted among 328 undergraduate students majoring in Chinese language and literature from six universities across the country, using the classroom interaction scale, learning engagement scale, and academic achievement questionnaire. The results showed that: (1) there was a significant positive correlation between classroom interaction, learning engagement, and academic achievement in Chinese language and literature majors; (2) classroom interaction not only directly and positively predicted academic achievement but also indirectly influenced it through the partial mediating effect of learning engagement. The study provides empirical evidence for optimizing classroom teaching models in Chinese language and literature majors and improving students' academic performance.

Keywords: Chinese Language and Literature Major; Classroom Interaction; Learning Engagement; Academic Achievement; Mediating Effect

1 Problem statement

As a core major in the field of humanities and social sciences, Chinese Language and Literature bears the important mission of inheriting excellent traditional Chinese culture and cultivating students' language and writing skills as well as humanistic literacy. However, the current classroom teaching of this major still suffers from the phenomenon of "teacher-led one-way teaching and passive student reception", resulting in insufficient student participation in classroom discussions and teacher-student interaction. This situation not only affects the quality of classroom teaching but also restricts the improvement of students' academic achievements (Pan, 2025)[1].

Classroom interaction, as the core component of classroom teaching, is a process where teachers and students, as well as students among themselves, communicate and exchange knowledge and construct meaning through language and thinking. Existing research has shown that in fields such as education and psychology, high-quality classroom interaction can effectively stimulate students' interest in learning and promote knowledge internalization (Han, 2008)[2]. However, given the particularities of the Chinese Language and Literature major—such as the course content being both literary and critical, requiring deepening understanding through text interpretation and emotional resonance—the mechanism by which classroom interaction affects academic achievement remains unclear.

Learning engagement, as a key indicator to measure students' learning status, encompasses three dimensions: cognitive engagement, emotional engagement, and behavioral engagement (Zang, 2022)[3]. In Chinese language and literature classrooms, students participate in text analysis through teacher-student interaction (cognitive engagement), generate emotional resonance through peer discussion (emotional engagement), and reinforce learning behavior through classroom presentation (behavioral engagement). These engagement behaviors may serve as a bridge for classroom interaction to influence academic achievement. Based on this, this study proposes the following hypothesis:

H1: Classroom interaction in Chinese language and literature has a significant positive predictive effect on academic achievement;

H2: Classroom interaction in Chinese language and literature has a significant positive predictive effect on learning engagement;

H3: Learning engagement plays a mediating role between classroom interaction and academic achievement in Chinese language and literature majors.

2 Research methods

2.1 Research subjects

Using convenient sampling, undergraduate students majoring in Chinese Language and Literature from 6 universities (including comprehensive universities and teacher-training colleges) across the country were selected as the research subjects. A total of 380 questionnaires were distributed, and 328 valid questionnaires were collected, with an effective response rate of 86.3%. Among them, there were 72 male students (22.0%) and 256 female students (78.0%); 89 freshmen (27.1%), 95 sophomores (28.9%), 83 juniors (25.3%), and 61 seniors (18.6%); 193 students in teacher-training majors (58.8%) and 135 students in non-teacher-training majors (41.2%).

2.2 Research Tools

The study utilizes three instruments: First, the self-developed "Classroom Interaction Scale for Chinese Language and Literature Major", which is based on the theoretical framework of Han(2008) and includes 3 dimensions: "teacher-student interaction", "student-student interaction", and "text interaction", with a total of 15 questions and a Likert 5-point scoring system; second, the "College Student Learning Engagement Scale" revised by Sun(2021), which is tailored to professional characteristics and includes 3 dimensions: cognitive, emotional, and behavioral engagement, with a total of 18 questions and a Likert 5-point scoring system [4]; third, the academic achievement questionnaire, which is based on the average scores of core courses in the major, combined with teacher evaluations, and scored on a 100-point scale (Huang, 2020) [5].

2.3 Test procedure

The questionnaire was distributed online through the "Wenjuanxing" platform. Before the survey, the research purpose and filling requirements were explained to the participants, emphasizing anonymity and data confidentiality. The survey was conducted from March to April 2025, with an average filling time of about 12 minutes.

2.4 Data analysis methods

Data processing was conducted using SPSS 26.0 and the PROCESS macro program, specifically including descriptive statistics, Pearson correlation analysis, regression analysis, and mediation effect testing.

3 Research results

3.1 Common method bias test

The Harman's single-factor test was employed to examine common method bias. Exploratory factor analysis was conducted on all scale items, and eight factors with eigenvalues greater than 1 were extracted without rotation. The variance explained by the first factor was 28.73%, which is below the critical value of 40%. This indicates that there is no significant common method bias in this study.

3.2 Descriptive statistics and correlation analysis

The mean, standard deviation, and correlation coefficients of each variable are presented in Table 1. The results indicate that there is a significant positive correlation between classroom interaction and academic achievement ($r=0.423$, $p<0.001$) as well as learning engagement ($r=0.516$, $p<0.001$); similarly, there is a significant positive correlation between learning engagement and academic achievement ($r=0.489$, $p<0.001$). The correlation among the variables meets the prerequisites for mediation effect testing.

Table 1. Descriptive statistics and correlation analysis of each variable (n=328)

Variable	M	SD	1	2	3
1. Classroom interaction	3.82	0.65	1		
2. Learning engagement	3.75	0.68	0.516***	1	
3. Academic achievement	78.65	8.32	0.423***	0.489***	1

Note:***$p<0.001$

3.3 Mediation effect test

The mediating effect of learning engagement was tested using Model 4 from the PROCESS macro program developed by Hayes, while controlling for demographic variables such as gender, grade, and major direction. The results are presented in Table 2:

1.Direct effect: Classroom interaction has a significant direct predictive effect on academic achievement (β=0.235, t=4.128, p<0.001), indicating that the hypothesis H1 is supported.

2.Mediating Path: The positive predictive effect of classroom interaction on learning engagement is significant (β=0.482, t=8.753, p<0.001), confirming Hypothesis H2. When both classroom interaction and learning engagement are included in the regression equation, the positive predictive effect of learning engagement on academic achievement remains significant (β=0.394, t=6.831, p<0.001).

3.4 Mediating effect value

Through 5000 repeated samplings using the Bootstrap method, the results show that the mediating effect value of learning engagement is 0.190, with a 95% confidence interval of [0.128, 0.263], which does not include 0, indicating that the mediating effect is significant. The proportion of the mediating effect to the total effect is 0.190/(0.235+0.190)=44.6%, which means that learning engagement plays a partial mediating role between classroom interaction and academic achievement. Hypothesis H3 is valid.

Table 2 Regression analysis results of mediation effect

dependent variable	predictor variable	B	SE	t	p	R²	F
Learning engagement	constant term	1.215	0.238	5.105	***	0.321	35.82***
	classroom interaction	0.482	0.055	8.753	***		
Academic Achievement	constant term	45.286	3.152	14.367	***	0.305	28.95***
	classroom interaction	0.235	0.057	4.128	***		
	Learning engagement	0.394	0.058	6.831	***		

Note: ***p<0.001, control variables have been included in the regression equation but not listed

4 Discussion

4.1 The direct impact of classroom interaction on academic achievement

This study finds that classroom interaction in Chinese language and literature can directly and positively predict academic achievement, which is consistent with the findings of Han(2008). In Chinese language and literature classrooms, teacher-student interaction can help teachers promptly identify students' deviations in understanding texts and deepen their knowledge acquisition through targeted guidance; peer interaction can expand students' thinking through "multi-angle interpretation" and promote active knowledge construction; and "text interaction", as a professional characteristic dimension, enables students to establish deep connections with classic texts through interaction, enhancing their literary analysis and appreciation abilities, all of which directly contribute to the improvement of academic achievement.

4.2 The mediating role of learning engagement

Research has confirmed that learning engagement plays a partial mediating role between classroom interaction and academic achievement, meaning that classroom interaction indirectly influences academic achievement by stimulating students' cognitive, emotional, and behavioral engagement. From the perspective of cognitive engagement, teachers' questioning in classroom interaction prompts students to actively consult materials and organize logic, enhancing cognitive depth; from the perspective of emotional engagement, empathetic discussions among students strengthen students' identification with their major and their interest in learning; from the perspective of behavioral engagement, interactive forms such as classroom presentations and group cooperation force students to actively participate in the learning process, strengthening their ability to apply knowledge (Sun, 2021). This mediating mechanism indicates that classroom interaction does not directly "transfer" academic achievement, but rather achieves a chain effect of "interaction - engagement - achievement" by activating students' engagement state.

4.3 Educational Implications

First, optimize classroom interaction design. Teachers can adopt "problem-driven interaction" and "situational interaction" in combination with the characteristics of Chinese language and literature major to enhance the pertinence and interest of interaction.

Second, strengthen guidance on learning engagement. For different dimensions of engagement, teachers can stimulate cognitive engagement through "cognitive challenge", enhance emotional engagement through "emotional connection", and strengthen behavioral engagement through "task-driven approach".

Thirdly, attention should be paid to the fairness of interaction. To avoid classroom interaction being concentrated on a few students, methods such as "rotating speaking" and "anonymous questioning" can be adopted to ensure the interactive participation rights of students with different personalities and backgrounds. Special attention should be paid to students with low interest in the major, and personalized interaction can be used to stimulate their willingness to engage (Du, 2025) [6].

5 Research limitations and prospects

This study has the following limitations: Firstly, the sample was selected using convenience sampling, and the coverage of regions and types of institutions is not comprehensive enough, which may affect the generalizability of the results; secondly, academic achievement was measured using self-reported grades, which, although corrected based on teacher evaluations, may still have biases; finally, the study is a cross-sectional design, unable to reveal causal relationships between variables.

Future research can employ random sampling to broaden the sample scope, combine multiple methods such as classroom observation and academic work analysis to measure academic achievement, and further verify the causal impact of classroom interaction on academic achievement and the stability of the mediating mechanism through longitudinal studies or experimental design.

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