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Developing Business Students' Learning Performance in Chongqing, China

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Abstract

Purpose: This study examines the factors influencing students' learning performance, specifically focusing on Instructor Attitude toward Learners (AI), Instructor Technical Competence (TC), Motivation (MV), Self-Efficacy (SE), Behavioral Engagement (BE), Cognitive Engagement (CE), and Emotional Engagement (EE). Additionally, the research seeks to identify effective strategies for enhancing students' learning outcomes. **Data, Materials, and Methodology:** The validity of the study was ensured through the use of the index of item-objective congruence, while a pilot test (n = 30) was conducted to assess reliability using cronbach's alpha. Data from 160 valid responses were analyzed using multiple linear regression to explore the significant relationships between the variables. A group of 25 students participated in a 10-week intervention design implementation (IDI) to further explore these relationships. Quantitative results from the pre-IDI and post-IDI phases were compared using a paired-sample t-test. **Results:** the study revealed that AI, TC, MV, SE, and EE significantly impact learning performance, as demonstrated by MLR, while BE and CE showed no significant effect. Furthermore, the paired-sample t-test indicated a significant improvement in learning performance between the post-IDI and pre-IDI stages. **Findings:** The study successfully implemented an intervention that incorporated five key influencing factors, leading to a marked improvement in the learning performance of business students in Chongqing, China.

Keywords: Learning Performance, Instructor Attitude toward Learners, Motivation, Emotional Engagement, Intervention Design Implementation

1. Introduction

Chongqing, a rapidly expanding economic powerhouse in China, is experiencing unprecedented growth in its higher education sector, particularly in business education. As the city integrates more deeply into global markets, the demand for highly skilled business professionals is surging (Huang et al., 2024). However, despite increased enrollment in business programs, concerns about the quality of learning outcomes remain (Hu et al., 2020). This study seeks to address this critical issue by identifying and analyzing the key factors that influence business students' learning performance in Chongqing.

While previous research has explored various aspects of business education in China, there is a notable gap in understanding the specific challenges faced by students in Chongqing, a city with unique socioeconomic dynamics. This study aims to fill this gap by focusing on five primary factors: educational practices, student engagement, educational technology, teacher-student relationship and student intrinsic characteristics.

The primary research questions guiding this study are:

What educational practices most significantly impact learning performance?

Which form of engagement can improve learning performance more effectively?

How can teacher use educational technology tools influence student outcomes?

What role do teacher-student relationship factors play in shaping learning performance?

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How to stimulate the intrinsic characteristics of students to improve learning performance?

This study aims to enhance students' learning performance and create a new model for business talent development in Chongqing. Through a mixed-methods approach involving surveys and interviews at three university who has national first-class major in Chongqing, this study will provide a comprehensive analysis of these factors, offering insights that are both academically valuable and practically applicable. Understanding these influences is essential for improving the quality of business education in Chongqing, ultimately supporting the city's economic development and ensuring that graduates are equipped to thrive in the competitive global marketplace. By contributing to the broader discourse on business education in developing regions, this study not only addresses a local issue but also offers lessons that can be applied in similar contexts worldwide.

2. Literature Review

2.1 Learning Performance (LP)

Learning performance, a concept rooted in management theory, is defined as students' self-assessment of their learning, encompassing the knowledge, skills, and extended abilities they acquire (Young et al., 2003). It also involves the development and transformation of students' learning behaviors and the quality of their abilities throughout the learning process (Ma, 2022). In recent years, various methods have been employed to evaluate learning performance. One common approach is through students' academic scores (Clark et al., 2021), while another focuses on the development of critical thinking, problem-solving, and other cognitive abilities (Law et al., 2019). Both students and instructors are key factors influencing learning performance. Student motivation and self-efficacy (Mathieu et al., 1992), as well as their participation in the learning process—whether cognitive, emotional, or behavioral (Tan, 2021)—are critical. Additionally, the instructor's attitude toward learners directly impacts learning outcomes (Den Brok et al., 2004), with positive instructor-student relationships fostering better learning (Wang & Zhen, 2019). The integration of technology in teaching, as facilitated by the instructor, can also enhance learning performance (Kilag et al., 2023). Specifically, the incorporation of educational technology has been shown to significantly improve learning outcomes (Darling-Aduana & Heinrich, 2018).

2.2 Instructor Attitude toward Learners (IA)

Instructor attitude toward learners refers to the personal attributes and teaching methods of instructors that influence their ability to stimulate students' interest and initiative in the learning process (Volery & Lord, 2000). Instructors who exhibit a positive teaching style enhance student engagement and thereby improve learning performance (Zhang et al., 2022). Moreover, the positive emotional factors expressed by instructors play a crucial role in students' learning outcomes (Wittmann & Wulf, 2023). The instructor's attitude has a significant impact on the instructor-student relationship, which is vital throughout the learning process. Encouragement and support from instructors can significantly enhance student learning (Wang & Zhen, 2019).
H1: Instructor attitude toward learners has a significant influence on learning performance.

2.3 Instructor Technical Competence (TC)

Instructor technical competence, closely aligned with UNESCO's Information and Communication Technology (ICT) competency framework, refers to the ability of instructors to effectively use ICT in their teaching. This includes their IT knowledge, skills, attitudes, and values, which are essential for achieving educational objectives (Ye, 2019). The introduction of new technologies has led to advancements in educational practices, replacing traditional teaching tools and enhancing teaching quality (Ma, 2022). The effective use of these technologies can improve classroom efficiency (Comi et al., 2017), support higher levels of student cognition (Ma et al., 2018), and foster students' learning and adaptability (Kilag et al., 2023).
H2: Instructor technical competence has a significant influence on learning performance.

2.4 Behavioral Engagement (BE)

Behavioral engagement, the most fundamental form of student engagement, is associated with persistence, participation, and positive behaviors in the learning process (Bond, 2020). It includes three primary components: students' behavior in class, their participation in school-related activities, and their engagement with academic tasks (Shernoff, 2013). Behavioral engagement is positively correlated with academic achievement (Skulmowski & Rey, 2018) and emphasizes observable behaviors, such as completing assignments on time and participating in peer discussions (Li, 2019).
H3: Behavioral engagement has a significant influence on learning performance.

2.5 Cognitive Engagement (CE)

Cognitive engagement refers to the internal mental efforts that students invest in the learning process, where they leverage their cognitive abilities to master knowledge and skills. This internal engagement can take various forms, including learning strategies (Pintrich & Schragben, 2012), critical thinking, perseverance, and a flow-like experience during learning (Boekaerts, 2016). The depth of cognitive engagement significantly influences the meaningfulness of learning (Bond et al., 2020). Autonomous learning, considered the highest form of cognitive engagement, can be fostered through the development of learning strategies, self-monitoring (Dubovi & Tabak, 2021), the evaluation of set goals, and the adaptation of learning methods (Simons, 2021), all of which aid learners in deepening their understanding (Mertayasa et al., 2021). A strong cognitive engagement has been shown to directly impact students' learning performance (Greene, 2015).

H4: Cognitive engagement has a significant influence on learning performance.

2.6 Emotional Engagement (EE)

Emotional engagement refers to the emotional responses that students exhibit during the learning process, including their feelings toward instructors, peers, subject matter, and broader university activities (Mai et al., 2015). It encompasses both positive and negative feedback about their learning experiences (Gibbs & Poskitt, 2010). However, research indicates that positive emotions have a stronger effect on student participation than negative emotions (Broughton et al., 2013). When emotional engagement is characterized by positive emotions, it significantly enhances academic performance (Inkinen et al., 2020). Empirical studies have consistently shown a strong correlation between emotional engagement and learning performance (Delfino, 2019).

H5: Emotional engagement has a significant influence on learning performance.

2.7 Motivation (MV)

Motivation is an internal psychological state that drives, directs, and sustains behavior (Woolfolk & Margetts, 2012). It plays a crucial role in initiating and maintaining learners' engagement in academic activities (Pintrich, 2003). Numerous studies have established a positive correlation between motivation and learning performance, as motivation increases student participation and encourages positive learning behaviors (Dörnyei, 2020). Instructors can employ targeted incentive strategies to boost students' motivation, ultimately improving their learning performance (Borah, 2021). However, it is important to differentiate between the effects of intrinsic and extrinsic motivation on student outcomes (Wu et al., 2020).

H6: Motivation has a significant influence on learning performance.

2.8 Self-Efficacy (SE)

Self-efficacy is defined as an individual's belief in their capacity to meet the demands of a particular situation (Wood & Bandura, 1989). It reflects a person's confidence in their ability to plan and execute specific tasks. Self-efficacy has been shown to enhance the development of learners' skills (Hayati et al., 2017) and often works in tandem with motivation to drive performance (Lee & Lee, 2018). A positive relationship between self-efficacy and learning performance has been well-documented (Ugwuanyi et al., 2020). Various approaches have been explored to improve students' self-efficacy, including creating supportive academic environments (Ugwuanyi et al., 2020), implementing flipped classroom models (Chang et al., 2022), leveraging artificial intelligence competencies (Wang et al., 2023), and utilizing prompt learning techniques (Müller & Seufert, 2018), all with the goal of enhancing learning performance.

H7: Self-efficacy has a significant influence on learning performance.

3. Research Methods and Materials

3.1 Research Framework

The research framework is constructed from three primary aspects. The first focuses on the instructor's level, drawing from Chan and Ko (2019), which examines how the abilities and attitudes of instructors influence students' learning performance. The second aspect addresses student behavior, where varying degrees and forms of student engagement in courses can affect learning outcomes (Raza et al., 2020). The third component examines the relationship between students' personal attributes and their individual learning performance from the perspective of personal qualities (Lee & Lee, 2018). These three theoretical perspectives form the basis for the conceptual framework, as illustrated in Figure 1.

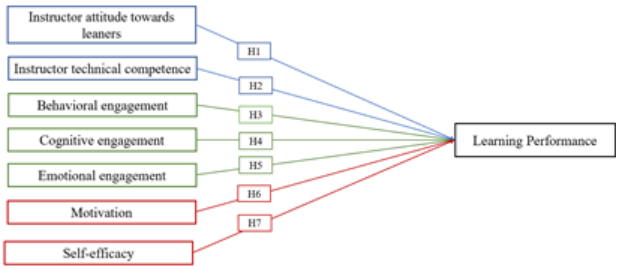

Figure 1: Conceptual Framework

H1: Instructor attitude toward learners has a significant influence on learning performance.
H2: Instructor technical competence has a significant influence on learning performance.
H3: Behavioral Engagement has a significant influence on learning performance.
H4: Cognitive Engagement has a significant influence on learning performance.
H5: Emotional Engagement has a significant influence on learning performance.
H6: Motivation has a significant influence on learning performance.
H7: Self-efficacy has a significant influence on learning performance.

3.2 Research Methodology

The researcher used qualitative interviews to do the preliminary diagnosis. 15 students were observed and interviewed to understand their learning gains and self-evaluations.

The quantitative surveys was used as a tool to collected data. The survey was conducted to the entire study population. It consists two parts: screening questions and measuring items with a 5-point Likert scalse. The data were firstly tested for IOC. All the items were passed by three experts' rating. Cronbach's alpha coefficient was used to examine a pilot test (n=30). With a score of 0.6 or above, all of the research instruments' items passed the reliability test. Multiple linear regression was used to test all hypotheses, retaining those that passed the tests and eliminating those that did not meet the criteria. The paired-sample t-test analysis of the questionnaire data allowed for comparison of results before and after the intervention, demonstrating the effectiveness of the IDI.

3.3 Research Population, Sample Size, and Sampling Procedures

The research population was proportionally drawn from students majoring in International Economics and Trade at Sichuan International Studies University (SISU), Chongqing Technology and Business University (CTBU), and Chongqing University of Science and Technology (CUST), because this major in these three universities is the only national first-class major in Chongqing. This population represents 25% of the total number of students (628) enrolled in these programs.

The study began with a preliminary diagnosis involving 15 students in class. A pilot test was conducted with 30 randomly selected students to verify the reliability of the instruments. Next, 161 International Economics and Trade students from the three universities were selected as the study population, with 160 valid responses obtained. Multiple linear regression was used to determine the relationship between the independent and dependent variables. Finally, a class of 25 students was chosen to participate in the IDI intervention phase.

Multiple sampling methods were employed, as outlined in the table below.

Table 1: Sampling Procedures

Stage	Sampling Procedure	Student Number
Preliminary diagnosis	purpose sampling	15
Pilot survey	probability sampling	30
Pre-survey	stratified random sampling	160
IDI sampling	purpose sampling	25

4. Results and Discussion

4.1 Demographic Profile

The following table shows demographic profile of two parts. One is the population who participated in survey from the three universities. One is the class involved in the intervention.

Table 2: Demographic Profile

Sample size for MLR (n=160)		Frequency	Percent
Gender	Male	52	32.50%
	Female	108	67.50%
Grade	Junior	39	24.38%
	Sophomore	95	59.37%
	Freshman	26	16.25%
University	SISU	80	50.00%
	CTBU	57	33.13%
	CUST	23	16.87%
Sample size for IDI (n=25)		**Frequency**	**Percent**
Gender	Male	5	20.00%
	Female	20	80.00%
Birth Place	Chongqing	18	72.00%
	Other places	7	28.00%
Future Planning	Postgraduate study	12	48.00%
	Find job	13	52.00%

4.2 Pre-IDI Stage

The multiple linear regression (MLR) analysis yielded significant results in identifying the relationship between the independent variables (IVs) and the dependent variable (DV) of learning performance. Table 3 illustrates these relationships. A P-value below 0.05 is considered significant, and the analysis revealed that five independent variables—Instructor Attitude toward Learners (0.010), Instructor Technical Competence (0.038), Emotional Engagement (0.001), Motivation (0.028), and Self-Efficacy (0.034)—all had significant positive influences on learning performance.

In terms of the magnitude of these effects, Emotional Engagement (β = 0.255) had the greatest impact, followed closely by Instructor Attitude toward Learners (β = 0.207) and Motivation (β = 0.200). Instructor Technical Competence (β = 0.143) and Self-Efficacy (β = 0.140) had relatively smaller, but still notable, effects. The R^2 value of 0.685 indicates that the independent variables collectively account for 68.5% of the variance in learning performance. All coefficients were positive, indicating that each independent variable positively correlated with the dependent variable.

Table 3: The MLR Result of IV on DV

Independent Variables	Coefficients Beta	t	P-value	R	R^2
IA	0.207	2.614	0.010*	0.828	0.685
IC	0.143	2.093	0.038*		
BE	0.049	0.939	0.349		
CE	0.048	0.808	0.420		
EE	0.255	3.247	0.001*		
MV	0.200	2.225	0.028*		
SE	0.140	2.136	0.034*		
Dependent Variable: Learning Performance					

Note that: *p-value <0.05

After identifying the key influencing factors, 15 students were interviewed to gather their perspectives on the intervention process, which informed the development of an intervention design implementation (IDI) model. The IDI outlined the steps for implementing interventions, including identifying areas needing improvement, selecting appropriate strategies, and evaluating the effectiveness of these interventions. The goal of IDI is to facilitate positive change aligned with the set objectives. Through student interviews, the research team identified effective ways to promote teamwork, engage in meaningful teaching activities, and utilize suitable teaching tools to foster a positive learning environment. These measures aimed to stimulate student interest and motivation, improve instructor-student relationships, and ultimately enhance learning performance.

To evaluate the effectiveness of IDI, the following hypotheses are proposed for verification:

H8: There is a significant difference in instructor attitude toward learners pre-IDI and post-IDI.

H9: There is a significant difference in instructor technical competence pre-IDI and post-IDI..

H10: There is a significant difference in emotional engagement pre-IDI and post-IDI..

H11: There is a significant difference in motivation pre-IDI and post-IDI.

H12: There is a significant difference in self-efficacy pre-IDI and post-IDI.

H13: There is a significant difference in learning performance pre-IDI and post-IDI.

4.3 IDI Stage

Harackiewicz and Priniski (2018) categorize goal interventions in higher education into three types: task value interventions, framing interventions, and personal values interventions. This study adopts a task value intervention approach, which focuses on specific classroom subjects by assigning tasks that stimulate students' thinking, thereby conveying the importance of the content being learned. During the IDI stage, three primary activities were designed: group mentoring, theoretical and practical courses, and individual mentoring. Based on the previous survey results regarding students' future career plans, different tasks were tailored for group and individual guidance.

4.3.1 Group Mentoring

The main purpose of group mentoring is to enhance instructor attitude toward learners, emotional engagement, and self-efficacy through interaction between the instructor and students, as well as peer interaction among students. In group mentoring, the instructor assigns tasks, and students collaborate in teams to complete them. One activity, international business negotiation, has high comprehensive requirements, allowing students to improve their skills through practice. Students are tasked with understanding negotiation elements, analyzing case information, setting negotiation objectives and strategies, and playing various roles in simulated cases. Group mentoring involves three steps: a) Negotiation Planning: The instructor assigns the task, and students form a negotiation plan through group discussions. b) Mock Negotiation: Students engage in role-playing and simulated negotiations with other groups, adjusting their negotiation strategies based on interactions. c) Participation in Competitions: Students participate in intramural tryouts and national competitions. Throughout these activities, students must communicate with the

instructor and cooperate with team members, which enhances professional knowledge and interpersonal skills, as well as the completion degree of group tasks.

Figure 2: Negotiation Planning, Mock Negotiation, Intramural Tryouts, and National Competition

4.3.2 Theoretical and Practical Courses

Courses are the activities in which instructor can spend the most time and the most frequency with their students. So the author used the course as part of the intervention. In the course planning, the author put it into two parts: Theoretical course and practical course. In the theoretical course, as the introduction to the theory is generally boring, the author chose the smart classroom with more convenient teaching environment, and participated in the training on the use of various teaching software and hardware equipment before class. At the same time, some improvements have been made in the teaching mode, including participatory teaching, discussion teaching, deductive teaching, case teaching and scene simulation, so that students become the center of the class, cultivate students' awareness of classroom participation, improve learning interest and motivation, and design a set of reward system to encourage students to participate in and complete classroom tasks. In practical course, in addition to the regular simulated negotiations with classmates and participating in negotiation competitions, in order to accumulate more experience in negotiating with different opponents, the author also formed cooperative relations with instructors from other universities for joint training, and let students from different universities train through online negotiation platforms.

Figure 3: Scene Simulation, Smart Classroom Use Training, and Online Negotiation Platform

4.3.3 Individual Mentoring

In individual mentoring stage, students were divided into the employment group and the study group according to their future plans in the previous questionnaire, and the activities were carried out according to these two directions. For students who plan to work after graduation, the instructor mainly guided them into the enterprise to practice, took these students to the job fair to understand the employment market, to visit the enterprise, and at the same time made a record of their situation to help them develop employment plans. For the students who intend to apply for graduate school, while helping them to make plans for further study, the instructor also needs to cultivate their scientific research ability, especially their academic writing ability. The instructor took them to participate in essay competitions, and some students had cooperated with the instructor to publish papers.

Figure 4: Job Fair, Enterprise Visit, Internship Guidance Record, and Co-publish Paper

4.4 Results Comparison between Pre-IDI and Post-IDI

The paired sample T-test was used to calculate the difference between the corresponding observations in two samples and test whether this difference is statistically significant (Ross & Willson, 2017). Table 4 illustrates the average of the variables before and after the intervention to show whether these variables have changed significantly.

Table 4: Results of Paired Samples T-Test (n=25)

Variables		Mean	Std. Deviation	t-value	df	p-value
Pair 1	Pre_IA	4.21	0.576	-3.93.	24	<0.001
	Post_IA	4.49	0.410			
Pair 2	Pre_TC	4.19	0.632	-4.69	24	<0.001
	Post_TC	4.55	0.418			
Pair 3	Pre_EE	3.90	0.625	-7.03	24	<0.001
	Post_EE	4.35	0.409			
Pair 4	Pre_MV	4.00	0.590	-8.06	24	<0.001
	Post_MV	4.37	0.425			
Pair 5	Pre_SE	3.74	0.748	-6.46	24	<0.001
	Post_SE	4.18	0.487			
Pair 6	Pre_LP	3.91	0.629	-5.71	24	<0.001
	Post_LP	4.28	0.447			

In summary, the above quantitative results show that there are significant differences in AI, TC, EE, MV, SE and LP between the pre-IDI and post-IDI stages. Assume that H8-H13 is supported. At the same time, 15 students were interviewed after IDI, and they hoped for more improvement and innovation in teaching mode, teaching method, instructor-student interaction, and educational technology. They also emphasized the relevance of activity design and task setting to learning experience, and recognized the importance of individual guidance for future planning.

5 Conclusion and Recommendation

5.1 Conclusion

This study focuses on identifying the factors that influence students' learning performance and explores effective strategies to enhance their academic outcomes. The research framework divides these factors into two main categories: instructor-related and student-related influences.

From the instructor's perspective, the key factors include instructor attitude toward learners and instructor technical competence. Instructor attitude is reflected in both in-class and after-class interactions, with university instructors having a greater influence on students than their families during this stage of education. Positive feedback from instructors can significantly boost students' motivation (Wittmann & Wulf, 2023), foster a conducive learning environment, and enhance student engagement. The relationship between instructors and students is, therefore, a crucial factor in learning performance (Wang & Zhen, 2019). Furthermore, instructor technical competence plays a vital role in making the educational process more efficient (Comi et al., 2017). Given students' affinity for smartphones and computers, it is more effective for instructors to integrate these tools into learning activities rather than restricting their use. Utilizing intelligent tools and teaching software allows students to complete tasks more efficiently and improves engagement through increased opportunities for extracurricular practice.

On the student side, the internal factors influencing learning performance include emotional engagement, motivation, and self-efficacy. Emotional engagement is particularly important, as students reported that they can only fully participate in learning activities when they are emotionally invested. In the classroom, activities like scenario simulations and role-playing help students form emotional connections with the subject matter, enhancing their understanding and analytical skills. Motivation is both intrinsic and extrinsic (Wu et al., 2020). Extrinsic motivation can be fostered through incentives such as bonus systems, while intrinsic motivation is nurtured through long-term discussions and exploration of students' interests. Goal-setting, guided by instructors, helped many students tap into their intrinsic motivation.

Self-efficacy, the confidence in one's ability to complete tasks, is another critical factor. The progression from simple to more complex tasks, along with self-reflection and external feedback, improves students' problem-solving abilities and boosts their confidence. Students with higher self-efficacy are more likely to take on challenging tasks, contributing to their overall learning performance.

Overall, improving learning performance can be effectively achieved by focusing on instructor attitude toward learners, technical competence, emotional engagement, motivation, and self-efficacy. These methods have been shown to increase student participation and enthusiasm, leading to mutual progress for both instructors and students. Consequently, these strategies hold promise for broader application in enhancing learning outcomes across educational settings.

5.2 Recommendation

The findings of this study indicate that interventions based on the five key influencing factors—teaching design, student participation, independent learning, teacher-student relationships, and teacher competence—can effectively

enhance students' learning performance. The following recommendations are provided to improve these areas:

Firstly, teaching should be competence-oriented, as curriculum planning is directly related to the development of students' skills. Instructors should incorporate competence cultivation goals into their curriculum design. To achieve the same teaching objective, instructors can diversify their teaching activities, providing varied experiences for students. Given current trends in China, interdisciplinary teaching design can be implemented to improve students' comprehensive abilities, fostering a broader range of competencies. At the same time, business tutors can be added to practical courses so that students can better understand the application of skills in real scenarios.

Secondly, engaging students in class activities through problem-solving tasks is highly effective. By presenting problems or assigning tasks, instructors can capture students' attention and encourage critical thinking. This approach shifts the traditional one-way flow of information from teachers to students, fostering active participation. The complexity of these tasks should be tailored to the students' abilities and teaching objectives. Successfully solving problems can enhance students' confidence and stimulate their interest in learning, forming a complete learning process through problem identification, analysis, and resolution.

Thirdly, cultivating students' autonomous learning habits is crucial at the university level, where students rely more on self-directed learning. Instructors can provide comprehensive learning resources to facilitate this process. Additionally, instructors should help students set tiered learning objectives, encouraging them to take initiative, plan their learning process, and progressively achieve their goals.

Fourthly, strengthening the emotional foundation of the teacher-student relationship is essential. Students' perceptions of their instructors form the core of this relationship and are influenced by teachers' professional competence, care for students, and overall demeanor. Instructors who balance kindness with strict, structured classroom management can provide students with a sense of security and trust. By setting clear classroom rules and fostering regular, meaningful interactions with students, instructors can enhance the teacher-student relationship.

Fifthly, improving teachers' competence not only elevates the quality of education but also contributes to teachers' professional growth. Teacher competence greatly influences their ability to guide students effectively. Colleges and universities should establish dedicated departments to support teachers' development and offer regular training in teaching techniques, methodologies, and psychology. Institutions should also organize teaching seminars to share the experiences of successful educators, helping all instructors enhance their skills and improve the quality of their teaching. Universities can also cooperate with enterprises, invite business people to give lectures, and let teachers learn and accumulate professional experience in enterprises.

5.3 Limitation and Further Study

This study has certain limitations related to its research scope. One limitation of this study is the reliance on self-reported data, which may introduce bias. Additionally, the study was conducted in a limited number of universities in Chongqing, which may limit the generalizability of the findings to other regions or educational contexts. The questionnaire data was drawn from students of the same major across three universities, and the multiple linear regression (MLR) data only covered students from one university. Among the three types of student engagement (behavioral, cognitive, and emotional), only emotional engagement had a significant impact on learning performance. However, other studies (Raza et al., 2020; Redmond et al., 2018) have shown that both behavioral and cognitive engagement can also significantly affect academic performance. Future research should expand the sample size to include students from various business majors across different universities, which could yield more representative results.

Additionally, while this study focuses on the influence of teachers and students on learning performance, students' academic outcomes may also be impacted by other factors, such as university management, infrastructure, and joint training programs with enterprises. Future research should explore a wider range of influences on learning performance and aim to develop student-centered teaching models that enhance students' comprehensive competencies.

References

Boekaerts, M. (2016). Engagement as an inherent aspect of the learning process. *Learning and instruction*, *43*, 76-83.

Bond, M. (2020). Facilitating student engagement through the flipped learning approach in K-12: A systematic review. *Computers & Education*, *151*, 103819.

Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020). Mapping research in student engagement and educational technology in higher education: A systematic evidence map. *International journal of educational technology in higher education*, *17*(1), 1-30.

Borah, M. (2021). Motivation in learning. *Journal of Critical Reviews*, *8*(2), 550-552.

Broughton, S. H., Sinatra, G. M., & Nussbaum, E. M. (2013). "Pluto has been a planet my whole life!" Emotions, attitudes, and conceptual change in elementary students' learning about Pluto's reclassification. *Research in Science Education*, *43*, 529-550.

Chan, S. C. H., & Ko, S. (2019). Personal response systems and learning performance: The mediating role of learners' engagement, *Journal of Education for Business, 94*(4), 234-242.

Chang, C. Y., Panjaburee, P., Lin, H. C., Lai, C. L., & Hwang, G. H. (2022). Effects of online strategies on students' learning performance, self-efficacy, self-regulation and critical thinking in university online courses. *Educational technology research and development*, 1-20.

Clark, A. E., Nong, H., Zhu, H., & Zhu, R. (2021). Compensating for academic loss: Online learning and student performance during the COVID-19 pandemic. *China Economic Review*, *68*, 101629.

Comi, S. L., Argentin, G., Gui, M., Origo, F., & Pagani, L. (2017). Is it the way they use it? instructors, ICT and student achievement. *Economics of Education Review*, *56*, 24-39.

Darling-Aduana, J., & Heinrich, C. J. (2018). The role of instructo r capacity and instructional practice in the integration of educational technology for emergent bilingual students. *Computers & Education*, *126*, 417-432.

Delfino, A. P. (2019). Student engagement and academic performance of students of Partido State University. *Asian Journal of University Education*, *15*(1), 1.

Den Brok, P., Brekelmans, M., & Wubbels, T. (2004). Interpersonal instructor behaviour and student outcomes. *university effectiveness and university improvement, 15*(3-4), 407-442.

Dörnyei, Z. (2020). *Innovations and challenges in language learning motivation.* Routledge.

Dubovi, I., & Tabak, I. (2021). Interactions between emotional and cognitive engagement with science on YouTube. *Public understanding of science, 30*(6), 759-776.

Gibbs, R., & Poskitt, J. (2010). *Student Engagement in the Middle Years of universitying (Years 7-10): A*. Report to the Ministry of Education.

Greene, B. A. (2015). Measuring cognitive engagement with self-report scales: Reflections from over 20 years of research. *Educational Psychologist, 50(*1), 14-30.

Harackiewicz, J. M., & Priniski, S. J. (2018). Improving student outcomes in higher education: The science of targeted intervention. *Annual review of psychology, 69*, 409-435.

Hayati, H., Idrissi, M. K., & Bennani, S. (2017). Classifying learners' cognitive engagement from online discussion using text mining. *International Journal of Latest Trends in Engineering and Technology, 8*(2), 212-219.

Hu, X. Y., Xu, H. Y., & Chen, Z. X. (2020). The relationship between information literacy, online learning engagement and learning performance. *Distance Education and online Learning, 3*, 77-84.

Huang, S. D., Chen, G., & Hu, G. C. (2024). The integration strategy of young talent training and regional development based on the western plan. *Sichuan Labor Security, 7,* 87-88.

Inkinen, J., Klager, C., Juuti, K., Schneider, B., Salmela-Aro, K., Krajcik, J., & Lavonen, J. (2020). High university students' situational engagement associated with scientific practices in designed science learning situations. *Science Education*, *104*(4), 667-692.

Kilag, O. K. T., Segarra, G. B., De Gracia, A. M. L., Del Socorro, A. S., Abendan, C. F. K., Camangyan, G. A., & Mahasol, E. T. (2023). ICT application in teaching and learning. *Science and Education*, *4*(2), 854-865.

Law, K. M., Geng, S., & Li, T. (2019). Student enrollment, motivation and learning performance in a blended learning environment: The mediating effects of social, teaching, and cognitive presence. *Computers & Education*, 136, 1-12.

Lee, H., & Lee, M. (2018). Social learning constructs and employee learning performance in informal Web-based learning environments. *Journal of Workplace Learning, 30*(6), 394-414.

Li, L. Y. (2019). Effect of prior knowledge on attitudes, behavior, and learning performance in video lecture viewing. *International Journal of Human–Computer Interaction, 35*(4-5), 415-426.

Ma, A. Q., Jiang, Q., & Zhao, W. (2018). Research on Influences and Prediction Model of instructors' ICT Application Ability—From the Perspective of Integration of Human , Technology and Knowledge. *Modern Distance Education, 6*, 21-33.

Ma, Z. Y. (2022). An Empirical Research on Online Learning Effectiveness of Adult Learners based on AMOS:An Analysis of the Relationship among instructor Support,Self-Regulated Learning and Learning Performance. *Journal of the Open University of Guangdong, 3*,1-10.

Mai, M. Y., Yusuf, M., & Saleh, M. (2015). Motivation and engagement as a predictor of students' science achievement satisfaction of Malaysian of secondary university students. *European Journal of Social Sciences Education and Research, 5*(1), 25-33.

Mathieu, J. E., Tannenbaum, S. I., & Salas, E. (1992). Influences of individual and situational characteristics on measures of training effectiveness. *Academy of Management Journal*, *35*(4), 828-847.

Mertayasa, I. N. E., Subawa, I. G. B., Agustini, K., & Wahyuni, D. S. (2021, March). Impact of cognitive styles on students' psychomotoric abilities on multimedia course practicum. *Journal of Physics: Conference Series*, *1810*(1), 012056.

Müller, N. M., & Seufert, T. (2018). Effects of self-regulation prompts in hypermedia learning on learning performance and self-efficacy. *Learning and instruction*, *58*, 1-11.

Pintrich, P. R. (2003). *Motivation and classroom learning*. Handbook of psychology.

Pintrich, P. R., & Schragben, B. (2012). *Students' motivational beliefs and their cognitive engagement in classroom academic tasks*. Routledge.

Raza, S. A., Qazi, W., & Umer, B. (2020). Examining the impact of case-based learning on student engagement, learning motivation and learning performance among university students. *Journal of Applied Research in Higher Education*, *12*(3), 517-533.

Redmond, P., Abawi, L., Brown, A., Henderson, R., & Heffernan, A. (2018). An online engagement framework for higher education. *Online Learning Journal, 22*(1), 183-204.

Ross, A., & Willson, V. L. (2017). Paired samples T-test. *Basic and Advanced Statistical Tests: Writing Results Sections and Creating Tables and Figures*, 17-19.

Shernoff, D. J. (2013). *Optimal learning environments to promote student engagement.* Springer.

Simons, M. (2021). The figure of the independent learner: On governing by personalization and debt. *Discourse: Studies in the Cultural Politics of Education*, *42*(6), 813-827.

Skulmowski, A., & Rey, G. D. (2018). Embodied learning: introducing a taxonomy based on bodily engagement and task integration. *Cognitive research: principles and implications*, *3*(1), 1-10.

Tan, C. (2021). The impact of COVID-19 pandemic on student learning performance from the perspectives of community of inquiry. *Corporate Governance: The International Journal of Business in Society*, *21*(6), 1215-1228.

Ugwuanyi, C. S., Okeke, C. I., & Ageda, T. A. (2020). Motivation and self-efficacy as predictors of learners' academic achievement. *Journal of Sociology and Social Anthropology*, *11*(3-4), 215-222.

Volery, T., & Lord, D. (2000). Critical success factors in online education. *The International Journal of Educational Management*, *14*(5), 216-223.

Wang, H. L., & Zhen, H. N. (2019). Build a good relationship between instructors and students to promote teaching and learning. *Chinese Journal of Education*, 1,106.

Wang, S., Sun, Z., & Chen, Y. (2023). Effects of higher education institutes' artificial intelligence capability on students' self-efficacy, creativity and learning performance. *Education and Information Technologies, 28*(5), 4919-4939.

Wittmann, S., & Wulf, T. (2023). Effects of flipped classes on student learning: The role of positively perceived instructor attitude toward students. *The International Journal of Management Education, 21*(1), 100735.

Wood, R., & Bandura, A. (1989). Impact of conceptions of ability on self-regulatory mechanisms and complex decision making. *Journal of personality and social psychology, 56*(3), 407.

Woolfolk, A., & Margetts, K. (2012). *Educational psychology Australian edition.* Pearson Higher Education AU.

Wu, H., Li, S., Zheng, J., & Guo, J. (2020). Medical students' motivation and academic performance: the mediating roles of self-efficacy and learning engagement. *Medical education online, 25*(1), 1742964.

Ye, X. T. (2019). *Workshop Training Mode of Faculty ICT Competence – Based on Shanghai international studies university training workshop practice* [Master's Thesis]. Shanghai Foreign Studies University.

Young, M. R., Klemz, B. R., & Murphy, J. W. (2003). Enhancing learning outcomes: The effects of instructional technology, learning styles, instructional methods, and student behavior. *Journal of Marketing Education, 25*(2), 130-142.

Zhang, C., Mu, W. J., & Zhang, Y. Z. (2022), The influence of instructor-student relationship and learning engagement on learning performance. *Psychological Monthly, 10*, 68-70+73.