

A Study on the Impact Mechanism of Emotional Intelligence of Vocational College Students on Learning Achievement

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Abstract

This study examines the impact of three modes of emotional intelligence of vocational college students - emotional evaluation and expression, emotional regulation, and emotional application - on their learning achievement. It also tests the mediating role of classroom atmosphere using the Bootstrap method. The analysis found that emotional intelligence has a significant positive effect on the learning achievement of vocational college students. Emotional intelligence also significantly influences the classroom atmosphere they are in, and the classroom atmosphere partially mediates the relationship between emotional intelligence and learning achievement. Therefore, it is important to value students' emotional intelligence and stimulate their enthusiasm. Additionally, attention should be given to the formation of the classroom atmosphere to create a positive and proactive environment. This will promote students' learning achievement.

Key Words: vocational college students, emotional intelligence, learning achievement, classroom atmosphere.

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INTRODUCTION

Learning outcomes are an important criterion for measuring the quality of talent cultivation. Course evaluation with learning outcomes at its core carries profound significance for testing teaching quality, urging student learning, strengthening student management, and promoting course construction. Research achievements on learning outcomes mainly focus on two aspects. Firstly, it defines the concept, considering learning outcomes as all the learning achievements of students, which are the comprehensive development that vocational students gain in learning and life

[1]. Secondly, it includes specific aspects of learning outcomes. For example, Mentkowski divided learning outcomes into several aspects, including interpersonal communication skills, problem-solving abilities, values, and social skills [2]. To better meet the needs of our country, there are several divisions, such as the four-dimensional theory: knowledge and skills, cognition and thinking, interpersonal promotion, and innovation and practice [3]; cognitive skills, operational skills, satisfaction, and sense of belonging [4]. The three-dimensional theory considers learning achievements, behavior improvement, and educational aspirations [5]. This study defines learning outcomes as the sum of academic achievements that students obtain during their school years, including knowledge and skills, cognition and thinking, interpersonal promotion, and innovation and practice [6].

The most direct place for vocational students to learn is the classroom. The emotional intelligence of students directly affects their learning outcomes, and the measurement of learning outcomes is an important way to measure student classroom learning outcomes. Enhancing students' emotional intelligence is an important measure to improve students' learning outcomes [7]. The term "participation" originated from management and organizational behavior, mainly referring to the state of adults in group activities. The emotional intelligence of vocational students generally refers to the state variables of physiological and psychological energy invested by students in activities related to classroom academics. From a psychological perspective, the way and effort of vocational students' active participation in teaching activities are emotional intelligence, including emotional regulation, emotional evaluation and expression, and emotional application [8]. This classification is also recognized by many scholars [9,10]. Therefore, this study defines the emotional intelligence of

vocational students as the sum of all performances of vocational students in the classroom, including emotional evaluation and expression, emotional regulation, and emotional application. Emotional evaluation and expression are the most basic forms of student emotional intelligence, all the overt behaviors that students show in the classroom; emotional regulation refers to students' thinking activities in the classroom, such as the learning methods used, self-restraint strategies, and thinking about problems, etc.; emotional application refers to students' emotional experiences in the process of emotional intelligence.

The study of class atmosphere originated from organizational atmosphere. Halpin first introduced organizational atmosphere into school research, believing that the unique style of school organization is the school organizational atmosphere. Bruce and others believe that the class atmosphere is the result of interactions between teachers and students, and between students [11]. Most studies believe that it is a stable relationship formed by teachers and students in a class collective, which is a result formed after the two subjects in the class: teachers and students interact, and in turn, it is perceived by teachers and students as an environmental atmosphere [12]. In this study, the class atmosphere refers to an environmental atmosphere formed by teacher-student relationships, peer relationships, and class organization, and this atmosphere will also affect teachers and students individually.

Overall, domestic and foreign research on the emotional intelligence, class atmosphere, and learning outcomes of vocational students have achieved many accomplishments. Typical research includes a variety of studies on the types and characteristics of the emotional intelligence of vocational students; a comprehensive analysis of the factors affecting the emotional intelligence of vocational students; and measures to improve the low enthusiasm of the emotional intelligence of vocational students; the influence and role of the emotional intelligence of vocational students on academic performance has basically reached a consensus; the impact of class atmosphere on student learning outcomes has also been widely recognized. Overall, the academic community has touched on the impact of the emotional intelligence of vocational students on

learning outcomes and the importance of the class atmosphere for student development. However, a complete research system has not yet been formed. Regarding the research object, most of them focus on middle school students, and there is less attention to the relationship between emotional intelligence and learning outcomes among vocational students; in terms of research content, in previous studies, some relevant research only focuses on the relationship between the emotional intelligence and academic performance of vocational students, and rarely explores the influence of the emotional intelligence of vocational students on their learning and growth from a deeper and broader field. There is a certain lack of research that takes the class atmosphere as an intermediary variable between the two. This study is based on the existing shortcomings, and draws corresponding research conclusions based on the analysis of survey data.

THEORETICAL PERSPECTIVE AND RESEARCH HYPOTHESES

From the perspective of student survey development, the focus has shifted from student participation to emotional intelligence. The concept of student involvement originated from the "time invested in learning tasks" proposed by psychologist Talph W. Tyler. Astin, in combination with Pace's analysis of student effort quality, further proposed the theory of student involvement. The theory of "student involvement" believes that in order to achieve the expected effect, a specific course must attract enough student effort and energy to achieve the expected learning and development. When the structure of the learning environment encourages students to participate actively, learning will be maximized. The greater the student's participation in university, the greater the student's learning and personal development [13]. The main advantage of this theory over traditional teaching methods (including subjects, resources, and personalized or eclectic theories) is that it shifts attention from subjects and techniques to student motivation and behavior. This theory is both simple and comprehensive, not only clarifying the numerous findings that have emerged in student development research over the decades, but also providing educators with a

tool to design more effective learning environments [14].

Emotional Intelligence and Learning Gain of Vocational College Students

Existing research has basically studied one aspect of the relationship between emotional intelligence and learning gain, that is, emotional intelligence and academic performance, and they all believe that emotional intelligence and academic performance are positively correlated. Kennedy's research shows that there is a positive correlation between student participation and academic performance. The research of scholars such as Voelkl shows that students who actively participate in class have better academic performance, and conversely, excellent performance will promote students' positive emotional intelligence [15]. Carini and others surveyed 1058 vocational college students, and the results showed that the indicators measuring student participation were positively correlated with student performance. Students who actively participate in classroom discussions will perform better academically, in other words, the greater the proportion of emotional intelligence scores, the higher the student's emotional intelligence positivity [16]. Zhang Huafeng and Shi Jinghuan further demonstrated based on the analysis of CCSS data that promoting students' active classroom expression behavior can help students further improve in basic knowledge and innovative quality [17]. Other empirical studies have shown that in emotional intelligence, encouraging students to ask questions and discuss can help improve students' academic performance and the development of comprehensive thinking [18,19]. Based on the above analysis, the following hypothesis is proposed:

H1: The emotional intelligence of vocational college students has a significant positive impact on learning gains.

Emotional Intelligence of Vocational College Students and Classroom Atmosphere

Previous studies have shown that the larger the class size, the more classroom discussions there are and the more active the classroom atmosphere becomes. However, research by O Silverstein. has indicated that having too many students in

the classroom can lead to distractions and have a negative impact on students' emotional intelligence [20]. For teachers, they tend to behave happier and more active in smaller class sizes, and their behavior can influence the overall classroom atmosphere. The frequency of classroom discussions tends to decrease as students get older. Waller proposed that the classroom is like an ecosystem, and there is a "front-middle effect" in students' seating choices [21]. Students sitting in the front and middle rows are more motivated to participate in class, achieve better academic performance, and gain recognition from teachers and classmates. Female students generally choose seats closer to the front, so their emotional intelligence and participation are higher [22]. In this context, students' emotional intelligence behaviors can influence the overall atmosphere of the class. Based on the above analysis, the following hypothesis is proposed:

H2: Emotional intelligence of vocational college students has a significantly positive impact on the classroom atmosphere.

Classroom Atmosphere and Learning Gains

The class is the fundamental unit of organization in higher education and has the greatest influence on the growth of vocational college students. The classroom atmosphere is an important part of the class environment, and different students will contribute to different class atmospheres. Research by Jia shows that the classroom atmosphere has a significant impact on students' academic performance [23]. Similar research findings have been reported in subsequent studies, emphasizing the important influence of classroom atmosphere on learning gains [24,25]. Further research also indicates the direction of this influence, with a positive classroom atmosphere significantly enhancing students' academic achievements [26]. A positive classroom atmosphere also plays a vital role in shaping students' educational expectations. Regardless of the stage of education, the classroom atmosphere has a significant impact on students' overall development. Based on the above analysis, the following hypothesis is proposed:

H3: Classroom atmosphere has a significantly positive impact on learning gains.

Emotional Intelligence of Vocational College Students, Classroom Atmosphere, and Learning Gains

In China, the class collective system has been implemented for a long time, and the class, as an important environment for talent education and development in universities, has a significant influence on students. The atmosphere of a class is shaped by both teachers and classmates [27]. "Each classroom has a unique and distinctive appearance, constructing its own world based on its own state" [28]. A well-functioning and excellent class collective has a positive promoting effect on the healthy growth of vocational college students. As an important component of the class environment, the classroom atmosphere has a significant impact on students' development during their university life and even beyond.

Biggs proposed the 3P (Presage, Process, Produce) model, which describes the prerequisites, process, and outcomes of classroom learning. During the learning process, students interpret the classroom learning environment based on their preconceptions and motivations. Their learning processes are driven by metacognitive factors. In the 3P model, the characteristics of students and the characteristics of the classroom learning environment interact, resulting in students' orientations towards learning tasks. This model also emphasizes that even if students face the same classroom learning environment, different learning orientations can lead to different learning outcomes. This theory provides the theoretical basis for studying student engagement and also provides a theoretical foundation for considering classroom atmosphere as a mediating variable between emotional intelligence and learning gains. Based on the above analysis, the following hypothesis is proposed: H4: Classroom atmosphere partially mediates the relationship between emotional intelligence of vocational college students and learning gains.

Based on the theoretical analysis and the three hypotheses, this study presents a schematic model illustrating the impact mechanism of the emotional intelligence of vocational college students on learning gains (see Figure 1).

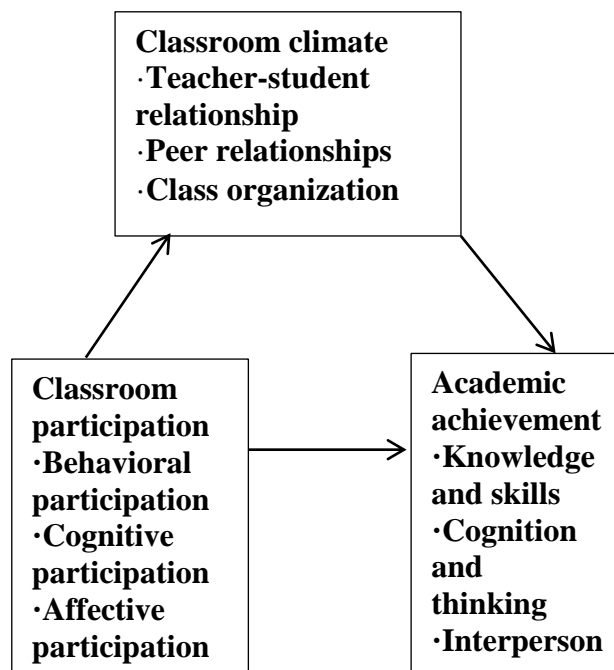


Fig.1. Schematic Model of the Impact Mechanism of Emotional Intelligence on Learning Gains for Vocational College Students.

RESEARCH METHOD

Sample and Data Collection

This study focused on full-time vocational college students and used a random sampling method to conduct a survey. The data was collected through electronic questionnaires. A total of 1125 questionnaires were received, and after organizing and excluding invalid questionnaires, the valid sample size was 1013, resulting in a questionnaire validity rate of 90.04%.

Measurement Tools

The survey questionnaire in this study consisted of three parts: emotional intelligence of vocational college students, classroom atmosphere, and learning gains. The questionnaire used a 5-point Likert scale ("1" indicating "completely disagree" and "5" indicating "completely agree"). The questionnaire was adapted based on mature scales from both domestic and international sources and demonstrated good reliability and validity.

Emotional Intelligence

The measurement of emotional intelligence was based on the Emotional Intelligence Scale, which divided the emotional intelligence of vocational college students into three dimensions: emotional evaluation

and expression, emotion regulation, and emotion application. The measurement was adapted from the "Emotional Intelligence Scale" [29]. The overall Cronbach's alpha reliability coefficient of the scale was 0.891, indicating good reliability.

Learning Gains

The measurement of learning gains in this study referred to the "Learning Gains Scale for Vocational College Students" [30,31], which divided learning gains into four dimensions: knowledge and skills, cognition and thinking, interpersonal facilitation, and innovation and practice. The overall Cronbach's alpha reliability coefficient of the scale was 0.891, indicating good reliability [32].

Classroom Atmosphere

The measurement of classroom atmosphere was based on the theory proposed by and drew on domestic measurement scales for classroom atmosphere. The classroom atmosphere was divided into three dimensions: teacher-student relationship, peer relationship, and class organization. The overall Cronbach's alpha reliability coefficient of the scale was 0.973, indicating very good reliability [33].

DATA ANALYSIS AND HYPOTHESIS TESTING

Reliability and Validity of the Scales

Reliability Analysis

The reliability analysis of the data showed that the Cronbach's alpha coefficient for the emotional intelligence scale was 0.898, for the learning gains scale was 0.937, and for the classroom atmosphere scale was 0.960. All scales had reliability coefficients greater than 0.8, indicating high reliability and stable results.

Validity Analysis

Composite reliability (CR) and average variance extracted (AVE) are commonly used indicators to test validity. In this study, we also used CR and AVE to assess the convergent validity and discriminant validity of the variables, as shown in Tables 1, 2, and 3.

Tab.1. Analysis table of emotional intelligence reliability, aggregation validity and discriminative validity.

dimensionality	Factor load	Item of question	composite reliability	convergent validity	discrimination validity		
					CR	AVE	Emotional evaluation and expression
Emotional evaluation and expression	0.700~0.786	3	0.786	0.55	0.742		
emotional adjustment	0.700~0.811	4	0.842	0.572	0.79	0.757	
Emotional application	0.675~0.874	3	0.804	0.581	0.75	0.819	0.762

The diagonal bold is the AVE square root value, and the lower triangle is the dimensional Pearson correlation value.

Tab.2. Analysis table of learning harvest reliability, aggregation validity and discriminative validity.

dimensionality	Factor load	Item of question	composite reliability	convergent validity	discrimination validity			
					CR	AVE	knowledge and skills	Cognition and thinking
knowledge and skills	0.651~0.990	4	0.871	0.632	0.795			

	5							
Cognition and thinking	0.82~0.869	4	0.901	0.695	0.713	0.833		
interpersonal facilitation	0.752~0.915	3	0.891	0.733	0.546	0.674	0.856	
innovation and practice	0.723~0.901	4	0.899	0.691	0.776	0.688	0.588	0.831

The diagonal bold is the AVE square root value, and the lower triangle is the dimensional Pearson correlation value.

Tab.3. Analysis table of class atmosphere reliability, aggregation validity and discrimination validity.

Dimensionality	Factor load	Item of question	composite reliability	convergent validity	Discrimination validity			
					CR	AVE	relations between students and teachers	peer relation
relations between students and teachers	0.856~0.951	4	0.954	0.837	0.915			
peer relation	0.866~0.949	3	0.938	0.834	0.82	0.913		
•	0.	3	0.91	0.96	0.746	0.	0.98	

Class organization	824~0.962		1	2		901	1
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Table 1, 2, and 3 show that the CR values for the dimensions of emotional intelligence, learning gains, and classroom atmosphere range from 0.786 to 0.954, all of which are greater than 0.7. This indicates that all three variables have good convergent validity. The AVE values for the variables range from 0.550 to 0.962 (greater than 0.5 indicating good performance), and the square root of the average variance extracted (AVE) ranges from 0.742 to 0.981. The Pearson correlation coefficients between the dimensions of the variables are generally smaller than the variables themselves. Overall, the variables meet the requirements for discriminant validity in the analysis.

Hypothesis Testing

Direct Effect Testing

In this study, the mediation effect of classroom atmosphere on the relationship between emotional intelligence and learning outcomes was tested using the method proposed by Wen Zhonglin et al. Emotional intelligence was treated as an endogenous variable, while learning outcomes served as an exogenous variable. A basic structural equation model was established to examine the direct effect of emotional intelligence on learning outcomes. In the model, emotional intelligence was considered a second-order factor, including three dimensions: emotional evaluation and expression, emotional regulation, and emotional application. AMOS 24.0 statistical analysis software was used to obtain the model fit indices as shown in Table 4.

Tab.4. Fit index of structural equation model.

model	χ^2/df	RM R	RMS EA	CFI	TLI	PG FI	PN FI
basic model	3.226	0.042	0.066	0.931	0.922	0.715	0.804
mediator model	3.111	0.05	0.065	0.923	0.917	0.717	0.819
critical value	<5	<0.05	<0.08	>0.9	>0.9	>0.5	>0.5

In Table 4, the fit indices for the baseline model are as follows: the absolute fit indices include the ratio of chi-square to degrees of

freedom ($\chi^2/df = 3.226$), RMR = 0.042, and RMSEA = 0.066; the incremental fit indices include CFI = 0.931 and TLI = 0.922; and the parsimonious fit indices include PGFI = 0.715 and PNFI = 0.804. All indices meet the critical standards, indicating a good fit between the model and the data, allowing for further hypothesis testing.

A structural equation model was constructed to examine the relationships between emotional intelligence and learning outcomes. The data were analyzed to obtain the path coefficients between variables and test the degree of mutual influence. The results of the hypothesis testing show that emotional intelligence has a significant impact on learning outcomes ($p < 0.001$), with a standardized path coefficient of 0.837, supporting hypothesis H1.

Building upon the support for hypothesis H1, a mediation effect structural equation model was established to test the mediating role of classroom atmosphere. Emotional intelligence was treated as the endogenous variable, learning outcomes as the exogenous variable, and classroom atmosphere as the mediating variable. The mediation effect structural equation model was used to test the mediating role of classroom atmosphere. AMOS 24.0 software was utilized to obtain the fit indices for the mediation model, as well as the path coefficients and hypothesis testing results between variables (see Table 5).

As shown in Table 4, the fit indices for the mediation effect structural equation model are as follows: the absolute fit indices include the ratio of chi-square to degrees of freedom ($\chi^2/df = 3.111$), RMR = 0.050, and RMSEA = 0.065; the incremental fit indices include CFI = 0.923 and TLI = 0.917; and the parsimonious fit indices include PGFI = 0.717 and PNFI = 0.819. All indices meet the critical standards, indicating a good fit between the model and the data, allowing for further hypothesis testing.

Tab.5. Path coefficients and hypothesis testing results.

ways	Estimate	S.E.	C.R.	P
Class atmosphere<---emotional intelligence	0.619	0.067	10.189	***
learning gain<---emotional intelligence	0.703	0.072	9.707	***

Learning gain<---Class atmosphere	0.217	0.042	4.617	***
•				

***shows $P < 0.001$

Based on the hypothesis testing results, it can be concluded that both the positive effects of emotional intelligence on classroom atmosphere and classroom atmosphere on learning outcomes are statistically significant, with standardized path coefficients of 0.619 and 0.217 respectively. Therefore, hypotheses H2 and H3 are supported.

Mediation Effects Testing

Currently, the Bootstrap method is more suitable for testing the significance of mediation effects in small to medium-sized samples. In the mediation model, emotional intelligence is considered the endogenous variable, learning outcomes as the exogenous variable, and classroom atmosphere as the mediator. By employing MPLUS and setting the Bootstrap sampling value at 1000, the results of the mediation effects test are obtained (refer to Table 6).

Tab.6. Significance test of mediating effect.

ways	path coefficient	prob	95% confidence interval	
			lower bound	upper bound
emotional intelligence-->learning gain	0.143	***	0.505	0.792
emotional intelligence-->Class atmosphere	0.715	***	0.09	0.347
--->learning gain				
gross effect	0.858	***	0.729	1.011

***shows $P < 0.001$

Table 6 shows that the confidence interval of the mediation effect of classroom atmosphere is [0.090, 0.347] at a 95% confidence level, which does not contain 0. The two-tailed test P value is less than 0.001, indicating that the mediation effect of the classroom atmosphere is significant and

is a partial mediation. Therefore, hypothesis H4 is supported.

RESULTS AND DISCUSSION

This study investigated the mechanisms through which emotional intelligence affects learning outcomes among vocational college students and tested the mediating effect of classroom atmosphere. The main findings are as follows.

Significant positive effect of emotional intelligence on learning outcomes among vocational college students

Research on emotional intelligence among primary and secondary school students has shown that emotional intelligence significantly influences students' academic performance. Most studies on emotional intelligence among vocational college students also focus on academic performance, confirming that different levels of emotional intelligence can impact students' academic achievements. These studies also identify factors and coping strategies that influence students' emotional intelligence.

However, in the current society, relying solely on students' final exam scores cannot determine whether they meet the criteria for innovative, creative, and well-rounded talents required for social development. Thus, it is necessary to focus on students' overall development, and measuring learning outcomes can provide guidance and motivation for their development. Emotional intelligence is an important aspect of student participation, and the classroom is a crucial platform for knowledge transmission and communication between teachers and students, as well as the main ground for higher education. Therefore, ensuring the quality of classroom teaching is essential to ensure the quality of higher education.

The results of this study demonstrate a significant positive impact of emotional intelligence on learning outcomes among vocational college students. This can be partially attributed to the considerable amount of time students invest in emotional intelligence. A recent survey on extracurricular study time among undergraduate students revealed that vocational college students spend the most time attending classes, averaging 27.97 hours per week [34].

Furthermore, the three dimensions of emotional intelligence, in descending order of their impact on learning outcomes, are emotional application, emotional regulation, and emotional evaluation and expression. This finding contrasts with previous research that initially focused only on external activities. As people have gradually become more concerned about psychological aspects, studies have started incorporating internal activities such as emotions and cognition. It also highlights the importance of emotional application in the overall process of students' emotional intelligence. The emergence of this finding may be due to the researchers' gradual progress in delving deeper into the research question. For this study, the researchers initially focused on students' external emotional evaluation and expression and subsequently delved into cognition and emotional application. This finding is generally consistent with previous research conclusions.

Emotional intelligence of vocational high school students has a significant positive effect on the class atmosphere

There is limited research on the relationship between students' emotional intelligence and the class atmosphere, with more focus on analyzing the impact of the class atmosphere on students' emotional intelligence. This study, conducted through questionnaire surveys, concludes that the emotional intelligence of vocational high school students has a significant positive influence on the class atmosphere. The rationale behind this conclusion is that the class atmosphere can be regarded as a specific "field" formed under the influence of interpersonal relationships, and students' emotional intelligence, including emotional evaluation, expression, regulation, and application, is inevitably influenced by teachers, peers, and other organizations within the class. The formation of the class atmosphere is also the result of interactions between teachers, peers, and others. In other words, emotional intelligence and the class atmosphere have a mutually influential relationship and are inseparable.

The class atmosphere has a significant positive effect on learning outcomes

The impact of the environment on individual development has long been proven through practice. In modern times, the class

environment is no longer as simple as desks, benches, blackboards, and chalk in traditional classrooms. Especially in the classrooms of vocational high school students, various multimedia devices are already fully equipped. As the primary place for students to engage in learning activities, the influence on students' learning and development becomes more significant. In addition to tangible facilities, the intangible class atmosphere, such as teacher-student relationships, peer relationships, and class organization, has an increasing impact on students. Existing studies have generally concluded that a positive class atmosphere contributes to improved academic performance and interpersonal skills of students, thereby promoting their socialization [35]. This study similarly concludes that the class atmosphere has a significant positive effect on learning outcomes. The reason behind this conclusion is that the class atmosphere encompasses teacher-student relationships, peer relationships, and class organization, collectively forming a field within the classroom. When a class is filled with a positive and upward atmosphere, it contributes to students' learning and development. Conversely, a negative atmosphere may yield contrasting results. Therefore, the class atmosphere has a significant impact on students' learning outcomes and even the professional development of teachers.

The class atmosphere plays a partial mediating role between emotional intelligence and learning outcomes for vocational students

This study has concluded that the class atmosphere plays a partial mediating role between emotional intelligence and learning outcomes for vocational students. On one hand, the class atmosphere is only one factor that influences the relationship between emotional intelligence and learning outcomes, and there may be other variables that affect this relationship. On the other hand, under the influence of the class atmosphere, there still exists a significant correlation between emotional intelligence and learning outcomes, with the effect size being greater than that of the class atmosphere. This indicates the important significance of emotional intelligence for learning outcomes. However, it does not

mean that the class atmosphere has no impact on learning outcomes. On the contrary, there is a significant correlation between the class atmosphere and learning outcomes. It is just that the importance of the class atmosphere is not as significant as that of emotional intelligence.

Biggs' proposed 3P model provides a clear depiction of the process of student engagement in classroom learning, with a focus on cognitive aspects. This model embodies several key ideas. First, the process of student classroom learning is an important mediating process, in which students exhibit different learning orientations such as deep-level and surface-level approaches. Second, this mediating process is a crucial determinant of learning quality, with the learning process itself influencing the learning outcomes. Third, learning produces results at various levels, both qualitative and quantitative. Fourth, there are two aspects that influence the learning orientations in the learning process, namely the classroom teaching environment and the students themselves. The 3P model theoretically illustrates the relationship between emotional intelligence, class atmosphere, and learning outcomes. This study, based on practical investigations, further confirms the validity of this theory and enriches the research on the relationship between emotional intelligence and learning outcomes by considering the class atmosphere as a mediating variable.

INSIGHTS AND SUGGESTIONS

This study analyzes the impact mechanism of emotional intelligence on learning outcomes from the perspective of vocational students, using student engagement theory as the framework. Based on this, there are three aspects that can be addressed to enhance the emotional intelligence and enrich the learning outcomes of vocational students in China.

Firstly, it is important to value the behavioral aspect of students' emotional intelligence and motivate their active engagement. Currently, many vocational students have the psychological mindset of merely pursuing graduation credits and passing exams, paying little attention to what they have actually learned. Previous research has pointed out the problem of low emotional intelligence among vocational

students. This survey study also emphasizes the significant amount of time students invest in classroom participation. In the current classroom schedule, improving the efficiency of emotional intelligence is a more effective utilization of teaching resources to promote students' comprehensive development. From the perspective of teachers, they should strive to eliminate "boring classes" and focus on enriching the content, actively motivating students' emotional intelligence, making the classroom more dynamic and integrating theory with practice to the maximum extent, while also paying attention to the emotional intelligence status of each student. Students, on the other hand, should make full use of classroom time and available teaching resources, plan their classroom learning effectively, and make it the most efficient and targeted way to acquire knowledge. This involves changing the mindset of viewing classroom learning solely as a means to obtain graduation credits and to focus on both behavioral and cognitive aspects of emotional intelligence.

Secondly, attention should be given to the formation of class atmosphere and the creation of a positive and proactive class environment. Previous research has paid limited attention to the class atmosphere among vocational students, perhaps due to the transient nature of their classes, with different classrooms for each subject. Apart from the physical facilities, the various interpersonal relationships within a class also have an impact on the class atmosphere. In the class structure in China, students, teachers, and student leaders are fixed members of each class. The two main factors that contribute to the class atmosphere are teachers and students. To create a positive and proactive class atmosphere, it is necessary to start with these two factors. Teachers, especially class advisors, should learn effective student management techniques and handle issues between students and teachers or among students in the most appropriate way. Student leaders should collaborate with class advisors and compensate for any deficiencies in teacher's work, serving as a bridge between regular students and class advisors. Regular students, in addition to focusing on their own tasks, should actively participate in class activities, cooperate with class advisors and student leaders, and maintain friendly communication with all

teachers and classmates. Furthermore, the school itself should create a good campus atmosphere, enabling each class to develop its own unique class culture under the influence of the entire campus.

Thirdly, the comprehensive development of students should be fostered to enrich their learning outcomes. Schools should not only be a place for academic learning but should also reflect in students' overall development. Schools and teachers should help students in changing their perception of learning and guide vocational students in transforming their way of thinking, enabling them to move beyond rote memorization. The education system should be optimized to enhance students' interpersonal skills, cultivate teamwork awareness, and provide corresponding courses and extracurricular activities for skill development. In terms of assessment and evaluation, more emphasis should be placed on students' comprehensive qualities, along with the establishment of appropriate evaluation standards for each specialty. Students themselves should engage in self-education during the learning process, cultivate self-management abilities, learn self-regulation, self-monitoring, self-evaluation, and self-reflection, and acquire effective learning strategies. This will make their vocational student life more enriched and thoroughly prepare them for their future careers.

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