Original Article

Learners in Blended Environments: Emotional and Cognitive Intelligence

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Abstract

Success in school depends on pupils having strong emotional intelligence. In the battle against aberrant conduct, improving a person's emotional and social control is essential. Blended learning settings were the subject of this study, which assessed students' emotional intelligence and learning styles. Blended learning is a new educational approach that arose as a result of the blending of classroom instruction with internet resources. However, this study also examined the impact that cognitive engagement plays in the association between learning styles and emotional intelligence. To measure emotional intelligence, cognitive engagement, and learning styles, 340 students in Hunan Province, China, completed a 26-item paper-based questionnaire. Personality traits and self-consciousness were also included in the evaluation of emotional intelligence. Structural equation modeling was performed using SmartPLS software to uncover the connections between the variables. According to the research, self-consciousness and self-disciplined have a clear, significant, and favorable relationship with learning styles. Cognitive engagement was also found to have significant and favorable indirect correlations with learning styles for the four components of emotional intelligence (self-consciousness/self-disciplined/emotional management/learning styles). COVID-19 showed students had more difficulty developing learning styles in mixed learning contexts, but emotional intelligence helped them to achieve When students are actively engaged in their learning through cognitively challenging assignments, learning styles and emotional intelligence are more closely linked. To improve students' emotional and cognitive engagement, institutions might use a number of different assessments. The study also examined the consequences for academics, practitioners, and the management of the institution.

Keywords: Blended learning, learning styles, emotional intelligence, COVID-19, cognitive engagement.

INTRODUCTION

Emotional intelligence has a direct impact on student achievement and cognitive health (Chandra, 2020). It provides timely psychological assistance for cognitive engagement and learning styles during the COVID-19 period. Despite the pandemic, students and teachers in blended learning environments have maintained a positive attitude toward their academic progress (Li, et al. 2021). The term "blended learning" refers to a method of training that incorporates both online and traditional classroom elements. In the face of campus closures, colleges and universities have implemented online courses in place of traditional classroom training (Na & Jung, 2021). This might have an impact on students' learning styles. In light of this, the authors sought to research the association between emotional intelligence, cognitive engagement, and learning styles in blended learning environments.

In psychology, emotional intelligence (EI) is one of the most significant aspects of a student's educational experience (Iqbal, et al. 2021). Self-consciousness and self-disciplined are used to deal with abnormal behavior, and emotional skills and personality traits are regulated, as well as negative emotional energy transformed into useful positive energy (Zhu, et al. 2022). Exam anxiety and stress management are just a few of the areas in which researchers have looked into the relationship between emotional intelligence and other traits like those mentioned above. In addition, some believe that kids with strong emotional intelligence are better able to handle academic difficulties than those who lack it (Tam, et al., 2021). Researchers (Oluwatosin & Akporhonor, 2021) have found that emotional intelligence (EI) is a good indicator of future academic success. When it came to health education in China, researchers looked at the relationship between

learning styles (LS) and emotional intelligence (EI).

It is impossible to achieve academic achievement without good learning styles (Jamogha, et al. 2021). Various activities and training can be used to enhance these behaviours (Olaleru & Owolabi, 2021). Several studies have examined the aspects that influence a student's desire to learn (Suleiman, et al. 2021). Every day, colleges and universities around the country are implementing new initiatives aimed at improving student learning styles (Quilez-Robres, et al. 2021). Learning styles can be improved by cultivating emotional intelligence (Sultana & Rabeasani, 2022).

It is impossible to learn well in a classroom without being cognitively engaged. The goal of engaging pupils cognitively is to help them apply what they've learned in the classroom to real-world situations (Chhetri & Baniya, 2022). Self-regulation and intended learning objectives are only two examples of intellectual characteristics that cognitive engagement effectively interacts with (Altwijri, et al. 2021). In the realm of educational psychology, several research have investigated students' cognitive involvement with various notions. In a research (Morales-Rodrguez & Pérez-Mármol, 2019), academic motivation is directly connected to students' cognitive engagement, according to the findings. A study of cognitive engagement in China's diverse learning environment is essential. Emotional intelligence is linked to effective learning styles, and this study suggests that cognitive engagement may be a mediating factor.

Despite academics' long-term concentration on this field of research, the development of emotional intelligence, cognitive engagement, and learning styles has not yet been completely realized. First, they studied developed countries including Australia and Europe, as well as the United States, Singapore, Korea, Japan, and Russia. They also looked at New Zealand as an emerging market. There hasn't been much research done in less developed countries. As a result, the COVID-19 era's higher education sector concentrates on mixed learning mode classrooms, which might lead to psychological challenges for students. As a result, it was critical to examine one's learning styles, emotional intelligence, and cognitive engagement throughout this time (Fotopoulou, et al. 2021). Another issue is that just a few research have looked at the connection between EI and study methods directly. We set out to research whether students' learning styles are influenced by their emotional intelligence in light of this lack of knowledge. A study into how cognitive involvement could serve as a mediator will follow. As a result, the study combines various features from the literature that have been shown to impact emotional intelligence and learning styles, such as cognitive engagement. It was necessary to find out the answers to the following questions:

Cognitive and emotional involvement are intertwined in determining how much time students spend in the classroom.
Emotional intelligence and healthy learning styles are linked, but how does cognitive engagement come into the picture?

338 Chinese health sciences undergraduates were used to test a variety of hypotheses using structural equation modeling, or SEM. This research looked at the literature's theoretical, methodological, empirical, and practical consequences. Emotional intelligence has been shown to influence college students' learning styles, with cognitive engagement acting as a mediating component. Using the COVID-19, integrated learning environments, and Chinese medical universities as information sources, it contributes to the corpus of knowledge. Exogenous, mediating, and endogenous components were modelled using a partial least squares equation model from the interdisciplinary perspectives of psychology, instructional design, and pedagogy. This study's statistical proof is based on a big enough sample of medicine students. When a pandemic like as the COVID-19 outbreak occurs, officials in higher education can use the findings to inform curriculum development and instructional design. Stakeholders in medical education can benefit from this study by better understanding how students learn in heterogeneous contexts from a psychological, sociological, and instructional environment standpoint.

It was arranged as follows by the researchers: There are five parts to this paper: a review of the literature, a conceptual framework, hypothesis formation, a description of the research methods, data analysis and interpretation, and a discussion of the findings. Parts 6 and 7 provide the conclusions and implications.

Thesis Statement

Method

Students that are emotionally intelligent are more likely to succeed in school, especially during the epidemic (COVID-19). Students' emotional and mental health have been the focus in most studies. According to (Wahab, et al. 2022), emotional intelligence is a key factor in a student's ability to succeed academically.

Chinese researchers have paid a lot of attention to studies on emotional intelligence in the recent two decades (Jiménez-Rodriguez et al. 2022; Naseer et al. 2022). In addition, recent research have focused on the impact of emotional intelligence on behavior and the function of training in personality traits difficulties. Emotional intelligence was also a topic of discussion in this article. As a result, many Chinese academics have begun to study the topic of emotional intelligence to better their students' academic performance. Students' ability to solve social problems and their teacher-student connections improved when they had higher levels of emotional intelligence. It is also important to note that blended learning combines several distinct learning methods. Face-to-face and online learning have been combined in this study to operationalize the concept of blended learning. There are advantages and disadvantages to both online and face-to-face education considering the COVID-19 pandemic. With the cessation of face-to-face education, online learning became an option." However, it might have a negative impact on student participation and sociability. Due to the benefits of combining in-person and online learning, blended learning is becoming increasingly popular. Face-to-face interaction and engagement as well as online accessibility encouraged students to continue their education in an emergency due to their good effects on student retention.

The proposed research paradigm illustrates how students' learning styles are influenced by their emotional intelligence through the usage of cognitive engagement. College students' learning styles are a popular issue for psychologists who study students' emotional intelligence and want to learn more. Emotional intelligence, according to educational psychologists, is a good indicator of a student's ability to focus and maintain good learning styles. Self-consciousness, motivation, self-regulation of emotions, and personality traits are all examples of emotional intelligence. Students' engagement hypothesis serves as the foundation for this research. It has been found that emotional intelligence has a favorable impact on cognitive engagement, which can assist students improve their learning styles. Emotional intelligence and learning styles were anticipated to be linked via cognitive engagement, and the authors set out to investigate this connection. Through the use of cognitive engagement in a developing nation, this study examines experimentally the impact of EI on learning styles. Research shows that emotional intelligence has a direct influence on the cognitive engagement that leads to learning styles, which is consistent with prior findings. As a result of these exchanges and the research conducted, the correlations depicted in Figure 1 were determined.

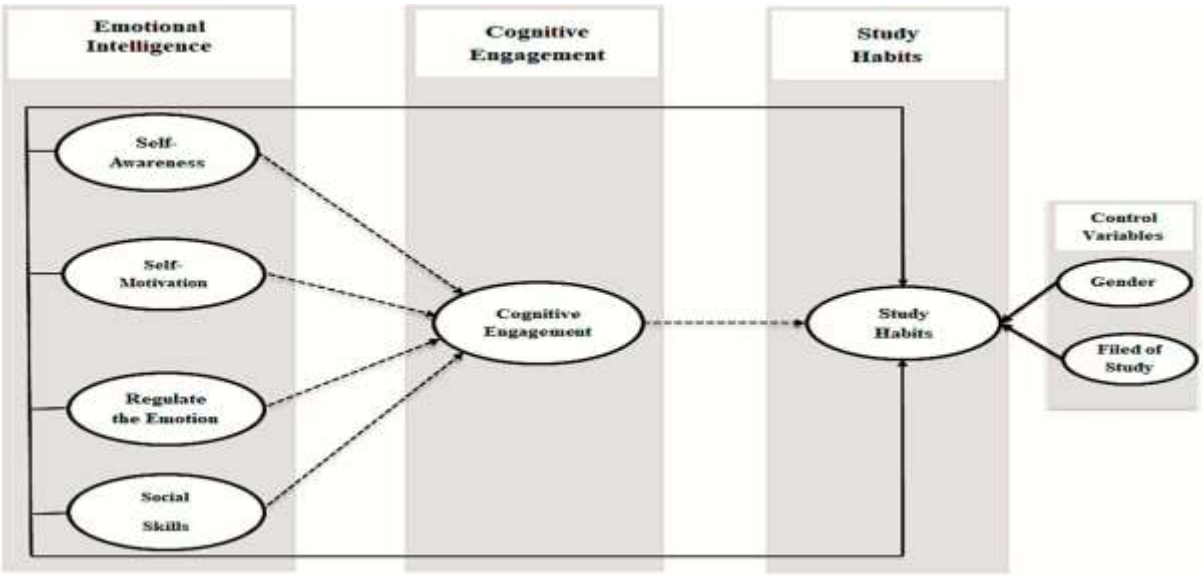

Figure 1. Research framework.

Hypotheses Formation

Intuitive Studying and Emotional Intelligence

A student's ability to recognize and control their own and others' emotions is enhanced when they have a high level of emotional intelligence. High levels of emotional intelligence can help alleviate the negative effects of stressful situations on your mental and physical health. Emotional intelligence is the capacity to effectively manage others in difficult situations. When it comes to stress, anxiety, and fatigue, those with low emotional intelligence are more likely to suffer from these symptoms. In hard situations, it may be feasible to use self-consciousness, motivation, and control over one's emotions and social talents to help people. As part of increasing self-consciousness, being able to identify one's own emotions and those of others is critical. The capacity to complete tasks is aided by self-disciplined, which provides the incentive to

achieve goals in difficult situations. Emotional regulation begins with rerouting one's sentiments and imagining the consequences of one's actions. Good personality traits, including the capacity to respond to cues and the motivation to do so, are essential for maintaining relationships with others. Consequently, this study looked at how students' learning styles were affected by their level of emotional intelligence (Figure 2).

It is critical for students to establish strong learning styles if they hope to see improvements in their grades. "Learning styles" refer to a person's dispositions and practices when acquiring information through schooling. The idea is that students may enhance their performance in the classroom by being more disciplined in class, listening attentively, taking notes, and completing their assignments on time. Academic performance and learning are negatively impacted by poor learning styles, as revealed in prior research investigations. Gender, age, and ethnicity are just a few of the variables that have been explored in countless research to see how they affect learning styles. Researchers looked at factors such as confidence in one's ability to succeed as well as the ability to manage one's time effectively and academically. Studying habits, such as how to focus in class, how to take notes and complete projects, and how to be on time were examined.

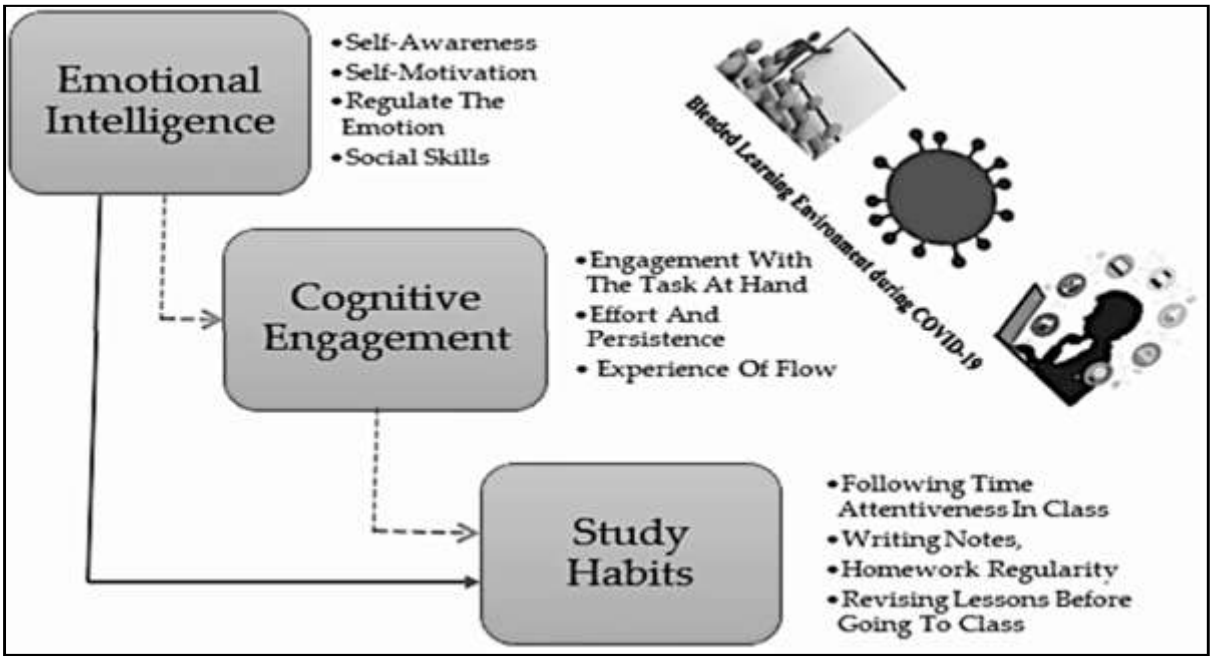

Figure 2. Literature flow.

Emotional control and self-consciousness have long been associated with improved learning styles. Research has shown that emotional intelligence qualities have a positive impact on pupils' ability to focus on their schoolwork. Several studies suggest that a student's well-being and emotional intelligence play an important part in the teaching-learning process. To succeed in school, students must be emotionally and cognitively involved, according to the Student Participation Theory (SPT). Academics have gained a deeper understanding of the relationship between emotional intelligence and learning styles because to this study. Because of this, the belief that emotional intelligence is connected to improved learning styles was formed:

Hypothesis 1.1: A student's learning styles are influenced positively by their level of self-consciousness. Hypothesis 2.2: A favorable effect of self-disciplined on learning styles is hypothesized. Hypothesis 1.3: Emotional self-control improves academic performance. Hypothesis 1.4: Learning styles are influenced positively by social abilities.

Cognitive and Emotional Engagement

When it comes to cognitive engagement, self-consciousness, motivation, and emotional control all have a good impact on it. By embracing the notion of student engagement, emotional intelligence may play a significant role in helping students develop a positive attitude toward learning in higher education Several academics have looked at the function of emotional intelligence and self-efficacy in cognitive engagement. There was a separate study that revealed that students' cognitive engagement might be predicted by their emotional intelligence. For its part, emotional intelligence takes a holistic approach to cognitive engagement and acknowledges the role it plays in improving academic success.

To be cognitively engaged, students must be able to put in the effort to understand what they are learning and to apply what they have learned in their daily lives. Planning for learning with enthusiasm, eagerness, and dedication is what students devote their time to. Students' home assignments, involvement in extracurricular activities, and online or face-to-face interactions with their classmates and professors have typically been operationalized. An important factor is the degree to which pupils can take control of the activities or tasks they are engaged in. A wide range of activities, such as peer-to-peer talks, online research, attending lectures, individual study, and debate, are included. Accordingly, in our study, we adapted the researchers' markers for evaluating cognitive involvement. To determine if students are cognitively engaged, look at how much time they devote to various learning tasks such as correcting their own misconceptions, talking to mentors, taking notes and digesting new material. Student cognitive engagement in this study has been defined as the following: (1) involvement with the work at hand, (2) perseverance and (3) flow. In addition to measuring cognitive engagement, the researchers also looked at two other aspects of human nature: emotional intelligence and learning styles. Emotional intelligence and cognitive engagement may go hand in hand, as has been suggested over the course of the conversation. As a result, the following hypotheses were tested:

Hypothesis 2.1: Increased cognitive involvement is associated with increased self-consciousness.
Hypothesis 2.2: A favorable effect of self-disciplined on cognitive engagement is hypothesized.
Hypothesis 2.3: Emotional self-control improves cognitive motivation. Hypothesis 2.4 claims that personality traits have a favorable effect on cognitive engagement.

Engagement in Learning and Studying
Cognitive engagement is one aspect of student involvement, which plays a significant role in the development of good learning styles. According to the findings of one study, building good learning styles can be aided by increasing one's level of cognitive involvement. Factors such as a good impact on students' learning styles and cognitive abilities were considered. Cognitive engagement has been found to have a significant impact on students' study confidence and school engagement, both of which may aid in learning. As a result, the following hypothesis assumes a positive correlation between cognitive engagement and learning styles:

Hypothesis 3: Engaging in cognitive activities improves one's ability to study.

Cognitive Engagement mediates the effects of stress.
There is a strong correlation between cognitive engagement and learning outcomes, according to previous research. Emotional intelligence and cognitive engagement have been found to have a significant impact on student learning results in the majority of research. In this study, researchers looked at the link between social intelligence and academic performance. Emotional intelligence is an additional component of the student participation hypothesis, which is linked to learning styles through cognitive engagement. The idea that emotional intelligence is a critical link between good learning styles and high levels of cognitive engagement has been debunked by research. As a result, the following suggestions have been made:

Hypothesis 4.1: Self-consciousness and learning styles are linked through cognitive engagement.

Hypothesis 4.2: Self-disciplined and learning styles are intertwined through cognitive engagement.

Hypothesis 4.3: Emotion management and learning styles are linked through cognitive engagement.

Hypothesis 4.4: The association between personality traits and learning styles is moderated by cognitive involvement.

Methods
For the following reasons, we focused our investigation on a rapidly developing region of China's higher education industry. Earlier research on the subject was conducted in industrialized nations. Less research has been done in developing nations that take a variety of approaches to developing students' study abilities through blended learning. When it comes to research, China's higher education system is currently using a mixed learning strategy. COVID-19 has affected college students worldwide, notably in China. COVID-19 focused on how emotional intelligence and cognitive engagement affect health sciences students' learning styles. Contributors found the website easy to use. Cross-sectional survey used to gather data. For the study, participants filled out a questionnaire. a part for orientation, one for demographic data (such as gender, race, and education level), and one for related items (emotional intelligence, cognitive engagement, and learning styles).

Creating a Survey

Survey questionnaires were utilized to collect data for this study. A broad variety of empirical investigations employ this method to gather data. Twenty-six statements were included in the questionnaire. Respondents were presented with a 7-point Likert scale for each of the assertions. Researchers' work and a literature assessment informed the development of these materials. Self-consciousness, self-disciplined, emotional control, and personality traits were all measured using 13 items... Six questions were used to assess cognitive engagement, whereas seven items were used to assess learning styles. We performed the survey in English as well as the original questions. The questionnaire's reliability was tested on a final sample of 30 people with comparable characteristics after a pilot study. In response to the comments from participants, we made changes to the questionnaire to ensure that all items used in the final questionnaire would be properly understood by the participants; they completed the surveys without issue.

Measures

Emotional Intelligence (EI). Self-Consciousness.

The researchers' results inspired the development of three self-consciousness tools. Responses were gathered using a Likert scale ranging from "strongly disagree" to "strongly agree" on three questions. Items like "I can recognize my emotions in diverse settings" and "I am aware that external events quickly alter my feelings" are good examples.

Self-Disciplined

Self-disciplined elements adapted from study by the researchers are included below. Responses were gathered using a Likert scale ranging from "strongly disagree" to "strongly agree" on three questions. A few examples include: "I take full responsibility for my conduct" and "I will do better the next time around".

Emotional Self-Control

The researchers' findings inspired the creation of these four tools for managing one's emotions. Responses were gathered using a Likert scale ranging from "strongly disagree" to "strongly agree" on three questions. "I can chat to someone if I'm in a bad mood" and "I focus on a pleasurable pastime when I'm down" are two examples.

The ability to interact with others in a kind manner

Iqbal and Qureshi [34] modified the three elements for personality traits. Responses were gathered on a 7-point Likert scale (from "strongly disagree" to "strongly agree") using three items. These are only a few examples of statements like, "It is simple for me to express my sentiments to others."

Involvement of the Mind

The researchers' findings inspired the creation of these six cognitive engagement tools. Responses were gathered using a Likert scale ranging from "strongly disagree" to "strongly agree" on three questions. "I am able to apply classroom concepts to real-world situations," and "I participate in numerous debates and discussions on the issues that occur in the classroom."

Habits of Study

Using the findings of the researchers, the seven items for learning styles were developed. Responses were gathered using a Likert scale ranging from "strongly disagree" to "strongly agree" on three questions. Examples include "I complete my homework on time" and "I usually attend class."

Co-location of data

Stratified random selection was used to gather data from Hunan's six health science universities that provide blended learning courses. The university names were listed as university A, B, C, D, E, and F in order to protect the anonymity and confidentiality of the participants. For this program, we only accepted students who had finished at least three years of college and had taken both face-to-face and online courses. They used pen and paper to fill out the survey. Filling out surveys in an appropriate campus atmosphere and with sufficient time was made possible. A total of 352 questionnaires were returned from 450 students, 14 of which were discarded because they were inadequate and unsuitable for data processing, More than 300 people participated in the study's final sample.

Procedures for analyzing data

SmartPLS (version 3.3.3) and SPSS examined the data (20.0). First, we looked at factor loadings, Cronbach's alphas, rho A's, and composite dependability. Our test was convergent and discriminantly valid. SPSS analyzed third-level demographic data. We assessed model fit, correlation, and R-squared before using SEM. Final phase: descriptive analysis. We examined structural modeling findings last. Studies used similar analysis methods.

Measuring Model

SmartPLS uses CFA to assess validity and reliability (version 3.3.3). SmartPLS is less sample size sensitive than other statistical approaches. Three considerations drove our choice of Covariance-based SEM. Exogenous and endogenous components' connection helps generate theoretical theories. Multivariate analysis is another CB-SEM feature. It doesn't assume normalcy or sample size, for example. CB-SEM bootstrapped data analysis. Exogenous influences also included emotional intelligence and learning styles. Cognitive involvement facilitates multivariate investigations. Our study data was analyzed using CB-SEM.

Study variables were connected using structural equation modeling. Emotional intelligence (self-consciousness, motivation, self-control, and social ability) affects learning styles. Cognitive engagement mediated the relationship between EQ subscales and learning styles. Before final data analysis, every idea has to be validated for validity and dependability. Before SEM analysis, each concept's validity and dependability were checked using measure modeling. This study employed factor loading, Cronbach's alpha and rho A, composite reliability, and AVE. Each item met the 0.60 factor loading requirement. Cronbach's alpha, rho A, and composite reliability above 0.70. AVE determined convergent validity. Every construction needs a 0.5 AVE. Table 1 indicates loadings over 0.6. Cronbach's alpha, rho A, and composite reliability coefficients all exceed 0.70. So, the research scale was dependable and valid (see Table 1).

Table 1. Reliability and convergent validity

Dimensions of Constructs	Loading	œ	rho_A	CR	AVE
Self-Consciousness (SC)	SC1	0.726	0.700	0.719	0.833	0.627
	SC2	0.881				
	SC3	0.759				
Self-Disciplined (SD)	SD1	0.784	0.714	0.717	0.795	0.564
	SD2	0.735				
	SD3	0.733				
Emotional Regulation (ER)	ER1	0.617	0.731	0.755	0.828	0.549
	ER2	0.803				
	ER3	0.750				
	ER4	0.780				
Personality Traits (PT)			0.701	0.715	0.829	0.620
	PT1	0.863				
	PT2	0.716				
	PT3	0.776				

Table 1. Cont.

Dimensions of Constructs	Loading	œ	rho_A	CR	AVE
Involvement of Thought (IT)					
IT1	0.796	0.820	0.831	0.87	0.529
IT2	0.744				
IT3	0.657				
IT4	0.782				
IT5	0.739				
IT6	0.631				
Learning Styles					
LS1	0.791	0.846	0.855	0.884	0.523
LS2	0.687				
LS3	0.680				
LS4	0.617				
LS5	0.738				
LS6	0.798				
LS7	0.633				

Demographic Analysis

The survey was completed by 340 people and 340 of those copies were useable. To better understand the demographics of the participants, we employed descriptive statistics. Males accounted for 54.8% of participants, while females accounted for 45.2%; rural participants accounted for 40.9% of participants, while urban participants accounted for 59.1%; participants aged 22 and under accounted for 75.5% of the total, while those aged 22 to 30 accounted for 24.5%; students studying ultrasonography, nutrition science, and physiotherapy made up 46.3% of the total. Table 2 provides demographic information for all participants.

Table 2. Demographics profile of the participants.

Measure	Items	Frequency (n)	Percentage (%)
Gender	Male	188	54.8
	Female	152	45.2
	Total	340	100.0
Background	Rural	142	40.9
	Urban	198	59.1
	Total	340	100.0
Age	Less than 22	259	75.5
	22–30	81	24.5
	Total	338	100.0
Field of Study	Medical Imaging		
	Ultrasonography	158	46.3
	Nutrition Sciences	76	23.4
	Physiotherapy	106	30.3
	Total	340	100.0

As part of SEM analysis, we evaluated the model's explanatory power between 0 and 1. In terms of explanatory power, R2 values of 0.25, 0.50, and 0.750 are regarded to be poor, moderate, and high, respectively. A correlation coefficient of 0.445 for cognitive involvement and a correlation coefficient of 0.409 for learning styles may be seen in Table 3. There is some explanatory power in both dimensions. A good fit between latent variables and their explanatory power is suggested by the model.

Table 3. R square

Constructs	R Square	R Square Adjusted
Involvement of Thought	0.445	0.420
Learning Styles	0.409	0.387

Descriptive Analysis

Table 4 summarizes the demographics of those who took the survey. The replies were recorded using a 7-point Likert scale. There were 340 replies that might be put to good use. The average of all replies is between 4.652 and 5.289, with a 95% confidence interval of 4 to 22. Between 1.143 and 1.325 is the standard deviation's measurement range. Table 4 provides descriptive information about the survey's participants.

Table 4. Descriptive analysis

Constructs	N	Min	Max	x	SD
Self-Consciousness	340	2.00	8.00	5.238	1.267
Self-Motivated	340	2.00	8.00	4.669	1.306
Emotional Regulation	340	2.00	8.00	4.652	1.205
Personality Traits	340	2.00	8.00	5.289	1.325
Involvement of Thought	340	2.00	8.00	4.805	1.224
Learning Styles	340	2.00	8.00	5.264	1.143

Abbreviations: x, mean; SD, standard deviation.

Structural Equation Analysis

Cognitive engagement was used as a mediator between learning styles and emotional intelligence (self-consciousness, self-disciplined, control over emotional states, and personality traits). PLS-SEM uses a regression coefficient as a route analysis average. Cognitive involvement reduced the link between self-consciousness and learning styles (r = 0.061). Cognitive engagement links self-disciplined to excellent learning styles (= 0.049, p 0.05), supporting Hypothesis H4.2. As predicted by H4.3, cognitive engagement mediated the connection between emotional self-regulation and academic accomplishment. Cognitive engagement modifies the link between personality traits and learning styles (=0.093, p0.05). Accepting H4.4. Table 8 has accurate hypotheses. Figure 3 displays route coefficients.

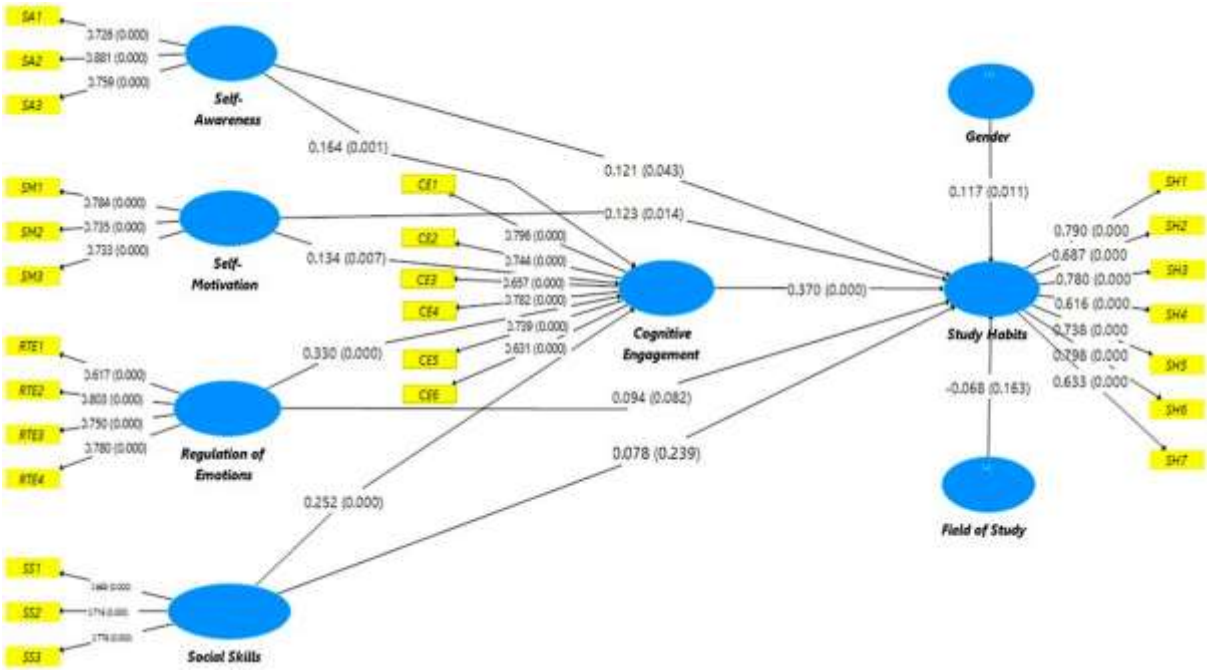

Figure 3. A path analysis model of emotional intelligence learning styles through cognitive engagement.

DISCUSSION

Students in COVID-19 integrated learning contexts were investigated for emotional intelligence and learning styles. The study employed synthesis to find notable results. Few comparable studies have been undertaken in industrialized nations like the US and Europe. In undeveloped nations, investigations focus on the time before COVID-19. The authors say their research is innovative since it explores how emotional intelligence affects students' learning styles in a mixed learning setting.

Initially, emotional intelligence and learning styles were tested. Self-consciousness and management have a favorable and substantial effect on learning styles, as shown by the results. Studies have linked self-consciousness and drive to better learning styles. Multiple studies have linked emotional intelligence and good study practices. Emotional intelligence, mood control, and personality traits are linked to academic learning styles. A lack of emotional control and personality traits training in higher education may be a factor. Students in diverse learning contexts may have lacked social and emotional management owing to COVID-19.

H2.1–H2.4 relate self-regulation, self-consciousness, self-disciplined, personality traits, and cognitive engagement. This study backs these notions. Emotional intelligence is linked to cognitive engagement [80]. Emotional intelligence is a predictor of cognitive engagement. Emotional intelligence improves cognitive engagement. Blended learning may have contributed to the improved cognitive engagement during COVID-19. Due to limited access to extracurricular activities, people may have been more concerned with their emotional well-being, increasing cognitive involvement in mixed-situational situations.

Cognitive engagement was also demonstrated to have a direct effect on learning styles, supporting hypothesis H3. There is a history of cognitive participation improving learning styles. It was shown that pupils who had a strong desire to learn were more likely to have good learning styles than those who didn't. Since cognitive participation helps students cultivate effective learning styles, this conclusion was drawn. It's possible that other

recent pandemics, like the COVID-19 outbreak, have contributed to a tighter link between kids and teachers.

Mediated connection offered great outcomes for Chinese study. Emotional intelligence (self-consciousness, self-disciplined, emotion control, personality traits) and learning styles were the focus of our hypothesis testing (cognitive engagement). Cognitive engagement moderated the relationship between EI and learning styles, according to a previous study.

Emotional intelligence, academic achievement, and learning styles need additional investigation. Cognitive engagement and emotional intelligence were major drivers of learning styles in China during the COVID-19 outbreak (self-consciousness, self-disciplined, emotion control, and personality traits).

CONCLUSIONS

Based on prior studies, a model for synthesis was constructed. Emotional intelligence, cognitive engagement, and study skills were connected in COVID-19 China. The study found that pupils who are self-aware and motivated to learn are more likely to succeed. Other EI traits, such as emotional regulation and personality traits, have minimal impact on students' learning styles. Blended learning environments boost students' emotional intelligence, self-consciousness, self-disciplined, emotion control, and personality traits. Also, increasing cognitive participation improves learning styles. All four components of emotional intelligence—self-consciousness, self-disciplined, emotional management, and personality traits —have a positive, indirect influence on learning styles via cognitive engagement in COVID-19.

According to the study, self-consciousness and self-disciplined are good markers of college students' learning styles. Emotional intelligence factors like emotional management and personality traits are unrelated to studying. Cognitive engagement is associated with emotional intelligence, which encompasses self-consciousness, self-disciplined, self-regulation, and personality traits. Cognitive involvement also boosts learning styles. Emotional intelligence is related to improved learning styles, says research. Any student may build great learning styles if they are smart and disciplined. High-EQ students are likely to be engaged in their academics no matter what. Students' emotional intelligence can be improved through cohort courses, boot camps, seminars, workshops, and integrated courses delivered by higher education experts. Students' emotional intelligence must be emphasized, especially their capacity to handle emotions and social relationships. Emotional intelligence promotes learning styles directly and indirectly.

Implications

Students' ability to create good learning styles is strongly influenced by their level of emotional intelligence and cognitive engagement. To cope with the issues posed by the COVID-19 epidemic, colleges have resorted to blended learning methods. Expectedly, institutions will pay attention to the aspects that impact students' ability to concentrate. Learning styles in mixed learning settings can be improved by focusing more on students' emotional intelligence and cognitive engagement at Chinese universities. As the epidemic spreads, developing countries like China may find it easier to deal with stress and anxiety if they develop their citizens' emotional intelligence and cognitive engagement. Developing pupils' emotional intelligence and increasing their cognitive engagement can help them become better learners.

Students in mixed learning contexts may benefit from the findings of this study in terms of developing better learning styles. Emotional intelligence and cognitive engagement should be included into university curricula to cultivate a love of learning in students. As a second consideration, educators must ensure that their instruction is both knowledge-delivery effective and student-centered. For children with poor emotional intelligence, teachers should recognize which pupils require emotional assistance for cognitive engagement to help them become more successful in their academics. To assist teachers in spotting emotionally fragile kids, university administrators should provide access to psychiatric treatment. Finally, curriculum designers should emphasize material in emotional intelligence and cognitive engagement in order to help students build good learning styles.

Current and Future Research Limitations

Despite its many virtues, our study has also experienced several drawbacks. It is possible that the results were influenced by cultural bias because the participants were all from the same nation. This lack of understanding necessitates studies in other cultural contexts within and outside of China. In addition, the study only included students in the health sciences; no data were acquired from students in the social sciences, economic sciences, or natural sciences. We need to recruit more students from the humanities and the sciences, as well as those who work in the business world. Personality traits might be used as a mediator in research of emotional intelligence, self-development, and cognitive engagement and learning styles. Our model included emotional intelligence,

cognitive engagement, and learning styles, as well as gender and age as controls. Future studies may include internet access, speed, and computer devices.

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