

What Role Does Emotional Intelligence Play among Emotion Regulation Strategies, Guilt, and Shame?

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Abstract: The purpose of this study is to explore the mediating role of emotional intelligence between cognitive reappraisal, expression suppression and guilt and shame in second language learning. Through a questionnaire survey of 262 non-English majors in a comprehensive university in China, the structural equation model (SEM) is used to analyze the data. The results show that cognitive reappraisal positively predicts emotional intelligence, which in turn positively affects guilt and negatively affects shame. Expression suppression negatively predicts emotional intelligence, which in turn negatively affects guilt and positively affects shame. In addition, emotional intelligence plays a significant mediating role between cognitive reappraisal and expression suppression and guilt and shame. This finding reveals the key role of emotional intelligence in emotional regulation and academic performance, and emphasizes the importance of cultivating students' emotional intelligence and effective emotional regulation strategies in the education process. The research results provide theoretical support for educational practice, and it is suggested to pay attention to students' emotional guidance in teaching to promote their academic success.

Keywords: Cognitive Reappraisal; Expression Suppression; Guilt; Shame; Trait Emotional Intelligence.

1. Introduction

With the rapid development of society and the advancement of education internationalization, Chinese students are facing unprecedented academic pressure. Under such pressure, students' emotion regulation ability has become an important factor affecting academic success. Guilt and shame are two common academic emotions. Guilt often motivates students to reflect and improve, while shame may lead to self-doubt and avoidance behavior. Understanding how to effectively regulate these emotions is of great significance for improving students' academic performance.

In recent years, the Chinese government has attached great importance to education reform and proposed to comprehensively improve students' comprehensive quality, including emotional management ability. In this context, it is of great practical significance to explore the influence of emotion regulation strategies on academic emotions and learning motivation. Cognitive reappraisal and expressive suppression are two common emotion regulation strategies. The former regulates emotions by changing the cognition of the situation, while the latter controls the emotional response by inhibiting the external performance of emotions. However, the effects of these two strategies on guilt and shame and their mechanisms are not fully understood. The purpose of this study is to explore the mediating role of emotional intelligence between cognitive reappraisal, expression suppression and guilt and shame in second language learning through empirical research. Through the questionnaire survey and data analysis of non-English majors in a comprehensive university in China, this paper reveals the influence mechanism of emotion regulation strategies on academic emotions and learning motivation, and provides theoretical and practical support for improving students' academic performance and emotion management ability.

Understanding the relationship between emotion regulation strategies, emotional intelligence, emotion and learning motivation not only contributes to the development of

emotion theory, but also provides empirical support for educational practice. By revealing the key role of emotional intelligence in the process of emotion regulation, this study can provide effective intervention strategies for educators to help students better manage emotions and improve academic performance. At the same time, this study also echoes the goals of the current education reform, emphasizing the comprehensive development of students' emotional management ability, and cultivating new era talents with mental health and emotional maturity.

2. Literature Review

2.1. Cognitive Reappraisal, Expression Suppression Strategies and Emotional Intelligence

Cognitive reappraisal and expressive suppression are two common emotion regulation strategies. Cognitive reappraisal adjusts emotions by changing the understanding of emotional events, reassessing personal ability or interpreting the meaning of emotional events; expression inhibition is the behavior of inhibiting emotional expression after the emotion is produced. Trait emotional intelligence is often regarded as the antecedent of emotion regulation strategies[2], and emotion regulation strategies affect students' academic emotions by regulating emotions, and ultimately affect students' learning outcomes. The interaction between the three has been explained by EMPATHICS model and emotion regulation process model[3][4].

The EMPATHICS model explores the influencing factors of second language learners' well-being and second language learning effectiveness from the perspective of positive psychology. The basic hypothesis is that learners with higher levels of trait emotional intelligence have higher self-efficacy, can better deal with stressful situations, and feel less negative emotions; trait emotional intelligence can indirectly affect the effectiveness of second language learning by affecting emotional regulation strategies[4]. The emotion regulation

process model classifies emotion regulation strategies and explains the various stages of emotion regulation[3]. Cognitive reappraisal occurs in the early stage of emotion generation, which can enable learners to adjust their emotions in time, so it will not affect the cognitive resources allocated to other tasks and help learners achieve excellent results[2][5]. However, expressive suppression does not effectively reduce the level of negative emotions[5]. This strategy will also conflict with the individual's internal emotions and external performance, which is not conducive to their psychological state and behavioral performance. At the same time, because expression inhibition requires individuals to constantly mobilize cognitive resources to control emotional expression, it may interfere with learners' cognitive process and reduce their memory level[3], thus restricting academic performance.

In recent years, the relationship between trait emotional intelligence, academic emotions and cognitive reappraisal, expression suppression strategies has received more and more attention[6]. The results show that trait emotional intelligence is significantly positively correlated with cognitive reappraisal, but the relationship with expression suppression is inconclusive[7][8]. For example, Sha et al. found that expressive suppression significantly negatively predicted trait emotional intelligence[7], while Thomas and Zolkoski found that expressive suppression had no significant predictive effect on trait emotional intelligence[8]. In addition, emotion regulation will change with the situation[3], but there are few studies on the situation of second language learning. Based on a sample of 391 Chinese college students. Gao and Yang found that cognitive reappraisal strategy positively predicted trait emotional intelligence and negatively predicted the use of expressive suppression strategy[9].

Although studies have explored the relationship between trait emotional intelligence and emotion regulation strategies, the mediating role of emotional intelligence between cognitive reappraisal and expression suppression strategies and emotions has not been fully studied, especially in the context of second language learning. In addition, the effectiveness of emotion regulation strategies is influenced by individuals, situations and goals, which have not been fully explored in existing research. In particular, there are few studies on Chinese second language learners, and further research is needed on the application and effects of these strategies in different cultures and learning environments.

2.2. Guilt, Shame and Second Language Learning

Based on Lewis's hypothesis [10], Teimourbelieves that a shameful foreign language learner will focus on the global self and how the self is recognized, evaluated and judged by others[11]. When faced with shame, second language learners believe that they are incompetent and flawed compared with native language learners, and their counterfactual thinking is self-oriented.

Cook[12] conducted a study of 30 American college students who use English as a second language, and found that perceived lack of second language ability is the main source of shame, and shame tends to make learners avoid participating in English communication. Yu[13] and Wang[14] also pointed out that shame stems from constant comparison with others, meeting the expectations of teachers and parents, and the influence of cultural background. The study of Teimouri[15][16][17] further shows that there is a significant negative correlation between shame tendency and different

motivational behaviors and English achievement, while guilt tendency is positively correlated with motivational behaviors and English achievement.

Although studies have explored the effects of guilt and shame on second language learners, the understanding of the performance and mechanism of these emotions in different cultural backgrounds and learning situations is still insufficient, especially in the educational context of China. In addition, the existing research mainly focuses on western countries, and there are few studies on Asian cultural background. Further research needs to pay attention to the mediating role of emotional intelligence between guilt, shame and English learning motivation, so as to understand the role of these emotions in second language learning more comprehensively.

3. Research Methods

3.1. Research Questions

(1) How do cognitive reappraisal and expression suppression affect students' guilt and shame?

(2) What role does emotional intelligence play among these factors?

3.2. Research Subjects

In this study, 262 non-English majors from two natural classes in a comprehensive university in North China were selected by convenience sampling method. Among them, 183 (69.85 %) were boys and 79 (30.15 %) were girls, all of whom were students in the substitute class of the same university public English teacher.

3.3. Instruments

In this study, a combined questionnaire survey was conducted. The questionnaire consists of two parts. The first part includes the participants' personal information, such as gender, age, major, and second language learning years. The second part is composed of the second language shame and guilt emotion scale, trait emotional intelligence scale (reduced version) and emotion regulation strategy scale.

Teimouri[16] designed the Second Language Test of Shame and Guilt Affect (L2-TOSGA) to measure the shame and guilt of individuals in the field of second language acquisition. It contains 13 scenarios and 46 items, which are divided into four subscales : shame, guilt, anger and apathy. The Cronbach's α coefficients of the four scales are all higher than .80, with high internal consistency. In this study, two subscales of shame and guilt were selected to form the second language shame and guilt scale of this study. There were 13 second language learning scenarios and 25 items. The Cronbach's α coefficient was 0.907, which had high internal consistency.

Trait Emotional Intelligence Scale (reduced version) [18] a total of 30 items, including four dimensions, namely emotionality, self-control, sociability and well-being. The Chinese version of the trait emotional intelligence scale (reduced version) was referred to Shao et al.[19], The items were in the form of a Likert 7-level scale, of which 1 represented very disagree and 7 represented very agree. The scale has been widely validated in the Chinese context, and the scale has high reliability and validity[20]. In this study, the reliability coefficient (Cronbach's α) of the scale was 0.912, indicating that the internal consistency of the scale items was high.

Emotion regulation strategy scale[21] contains 2 dimensions, cognitive reappraisal strategy use (6 items) and expression inhibition strategy use (4 items). Previous studies have shown that the scale has high reliability and validity[8][9]. The Chinese version of the emotion regulation strategy scale refers to Chen Wei et al. [22], The items are in the form of Likert 7-level scale, of which 1 represents very disagreeable and 7 represents very agreeable. In this study, the internal consistency coefficient of the cognitive reappraisal strategy was 0.861, and the internal consistency coefficient of the expression suppression strategy was 0.789, both of which had high reliability (Cronbach 's $\alpha > 0.782$).

3.4. Data Collection and Analysis

Before collecting data, the researchers obtained the informed consent of the participants. In this study, the questionnaire was distributed through the questionnaire star. Based on SPSS 26.0, this study first tested the reliability of the scale, and then carried out descriptive statistics. Based on the skewness, kurtosis coefficient and Q-Q diagram, the normal distribution of the data was tested, and the data was diagnosed by multicollinearity. In view of the normal distribution of the data, this study conducted Pearson correlation analysis and regression analysis, and used SPSS

Process v3.4 for parallel mediation analysis. The Bootstrap method (sampling 5,000 times) was used to construct a 95 % confidence interval to test the mediating effect.

4. Research Results

4.1. The Predictive Effect of Emotion Regulation Strategies on Guilt and Shame

In order to investigate the subjects ' trait emotional intelligence, emotion regulation strategies and second language learning performance and the relationship among them, this study first conducted descriptive statistical analysis and correlation analysis. Participants ' trait emotional intelligence level ($M = 4.08$, $SD = 1.21$) and expression inhibition strategy use ($M = 4.32$, $SD = 1.02$) were at a moderate level (refer to Li Chengchen 2020), cognitive reappraisal strategy use ($M = 5.36$, $SD = 0.79$) and L2 guilt ($M = 5.67$, $SD = 0.84$) were higher, and L2 shame ($M = 3.89$, $SD = 1.02$) was also at a moderate level (see table 1). Skewness, kurtosis coefficient and Q-Q plot show that all variables are normally distributed. The results of multicollinearity diagnosis ($VIF < 2$) show that there is no collinearity between variables in the model.

Table 1. Descriptive statistics

Variable	Score	Mean (M)	Standard deviation (SD)	Skewness	Kurtosis
CR	1~7	5.36	0.79	0.62	-0.43
EI	1~7	4.32	1.02	-0.34	0.02
TEI	1~7	4.08	1.21	-0.32	-0.31
L2 Guilt	1~7	5.67	0.84	0.73	0.03
L2 Shame	1~7	3.89	1.02	0.82	0.05

Notes:CR refers to cognitive reappraisal, EI refers to expression inhibition, TEI refers to Trait emotional intelligence.

Table 2 shows the correlation between emotion regulation strategies, trait emotional intelligence and guilt and shame. Cognitive reappraisal was positively correlated with emotional intelligence ($r = 0.45$, $p < 0.01$) and guilt ($r = 0.52$, $p < 0.01$), and negatively correlated with shame ($r = 0.038$, $p < 0.01$). There was no significant correlation between cognitive reappraisal and expression inhibition (-0.07 , $p >$

0.05). Expression suppression was negatively correlated with emotional intelligence ($r = 0.35$, $p < 0.01$) and guilt ($r = -0.30$, $p < 0.01$), and positively correlated with shame ($r = 0.42$, $p < 0.01$). Emotional intelligence was significantly positively correlated with guilt ($r = 0.40$, $p < 0.01$), but significantly negatively correlated with shame ($r = -0.25$, $p < 0.01$).

Table 2. Correlation analysis

Variable	CR	EI	TEI	L2 guilt	L2 shame
CR	1				
EI	-0.07	1			
TEI	0.45**	-0.35**	1		
L2 guilt	0.52**	-0.30**	0.40**	1	
L2 shame	-0.38**	0.42**	-0.25**	-0.21**	1

Notes: CR refers to cognitive reappraisal, EI refers to expression inhibition, TEI refers to Trait emotional intelligence.

** $p < 0.05$.

4.2. The Mediating Role of Trait Emotional Intelligence between Emotion Regulation Strategies and Guilt and Shame

The mediating role of trait emotional intelligence between two emotion regulation strategies and guilt is shown in Figure 1. Cognitive reappraisal significantly positively predicted guilt ($\beta = 0.52$, $p < 0.01$) and emotional intelligence ($\beta = -0.45$, $p < 0.01$). Expression suppression significantly negatively predicted guilt ($\beta = -0.30$, $p < 0.01$) and emotional

intelligence ($\beta = -0.35$, $p < 0.01$). The 95 % confidence interval of the mediating effect of emotional intelligence between cognitive reappraisal and guilt is 0 ($0.01534 \sim 0.3127$), indicating that the mediating effect of emotional intelligence between cognitive reappraisal and guilt is significant, and the mediating effect value is 0.22. The 95 % confidence interval of the mediating effect of emotional intelligence on expression inhibition and guilt does not contain 0 ($-0.2514 \sim 0.1037$), indicating that emotional intelligence has a significant mediating effect between

expression inhibition and shame, and the mediating effect value is -0.18.

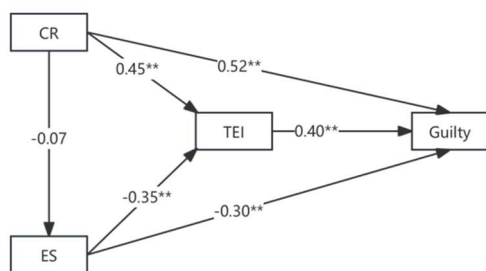
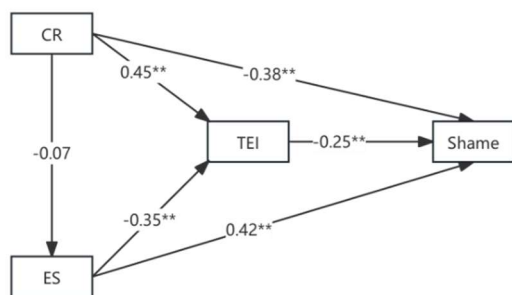


Figure 1. The mediating role of trait emotional intelligence between cognitive reappraisal, expression suppression and guilt

The mediating role of trait emotional intelligence between cognitive reappraisal, expression suppression and shame is shown in Figure 2. Cognitive reappraisal negatively predicted shame ($\beta = -0.38, p < 0.01$), and expression inhibition positively predicted shame ($\beta = 0.42, p < 0.01$). Emotional intelligence significantly negatively predicted shame ($\beta = -0.25, p < 0.01$). The 95% confidence interval of the mediating effect value of cognitive reappraisal does not contain 0 ($-0.2967 \sim 0.1248$), indicating that the mediating effect of trait emotional intelligence between cognitive reappraisal and shame is significant, and the mediating effect value is -0.20. The 95% confidence interval of the mediating effect of emotional intelligence on expression inhibition and shame does not contain 0 ($-0.1879 \sim 0.3563$), indicating that cognitive reappraisal has a significant mediating effect between expression inhibition and shame, and the mediating effect value is 0.25.



Picture 2. The mediating role of trait emotional intelligence between cognitive reappraisal, expression suppression and shame

5. Discussion

5.1. The Direct Impact of Cognitive Reappraisal and Expression Suppression on Guilt and Shame

This study found that cognitive reappraisal was positively correlated with guilt and negatively correlated with shame. This finding is consistent with the emotion regulation process model proposed by Gross[3] that is, cognitive reappraisal, as an effective emotion regulation strategy, regulates emotions by changing the evaluation of emotional events. Cognitive reappraisal can enhance guilt, prompt individuals to reflect on and correct their own behavior, and reduce shame, which

helps to alleviate the shame caused by low self-evaluation. However, existing studies have shown that the effect of cognitive reappraisal may vary depending on cultural background. For example, Gao and Yang[9] found that the effect of cognitive reappraisal was obvious among Chinese college students, while the effect in other cultural backgrounds was not fully understood. Future research should further explore the effectiveness of cognitive reappraisal in different cultural backgrounds to verify its universality.

The positive prediction of expression suppression on shame and the negative prediction of guilt show the complexity of expression suppression as a short-term emotion regulation strategy. Although inhibition of expression can control the external expression of emotions in the short term, it can lead to an increase in shame and is not conducive to dealing with guilt. This is consistent with the results of Gross[3] that inhibition of expression may have a negative impact on emotional state, affect the effective use of cognitive resources, and thus affect learning performance. Related studies[5] also pointed out that expressive suppression may lead to conflicts between emotional and cognitive resources and reduce academic performance. Therefore, although expression inhibition may be effective in some cases, its long-term effects need more research support.

5.2. The Mediating Role of Emotional Intelligence

This study shows that emotional intelligence has a significant mediating effect between cognitive reappraisal and guilt, indicating that emotional intelligence enhances guilt by affecting the effect of cognitive reappraisal. This finding is consistent with the research of Harley et al. [2] and Teimouri[11] which confirms the important role of emotional intelligence in regulating emotions. Individuals with high emotional intelligence can better understand and regulate emotions, so they can carry out cognitive reappraisal more effectively, thereby enhancing guilt and promoting self-improvement. In addition, the mediating effect of emotional intelligence between expression suppression and guilt is negative, which indicates that emotional intelligence can reduce the negative impact of expression suppression on guilt. This is consistent with the findings of Thomas and Zolkoski[8] indicating that emotional intelligence can alleviate the emotional distress caused by expression suppression and improve the individual's emotional regulation ability.

The negative mediating effect of emotional intelligence between cognitive reappraisal and shame shows that individuals with high emotional intelligence can use cognitive reappraisal more effectively to reduce shame. This supports the view of Peña-Sarrionandia et al.[6] that emotional intelligence can improve emotional state through effective emotion regulation strategies. On the other hand, the mediating effect of emotional intelligence between expression inhibition and shame is positive, indicating that high emotional intelligence may increase the negative impact of expression inhibition on shame. This is consistent with the results of Wang[14], indicating that even if emotional intelligence is high, expressive suppression may still aggravate shame.

Therefore, future teachers can guide students to analyze and reconstruct their cognition of foreign language learning challenges in the classroom, such as reconstructing 'I always make mistakes into every mistake is an opportunity for

progress, and adjusting their cognition of guilt and shame in foreign language learning. At the same time, students can be encouraged to express their feelings and challenges in foreign language learning by organizing activities such as emotional diary writing and sharing sessions. Help students identify and discuss their emotions and reduce the negative effects of the two emotions.

6. Conclusion

This thesis aims to explore the relationship between emotion regulation strategies, emotional intelligence and guilt and shame in second language learning, with particular attention to the mediating role of emotional intelligence in these relationships. The high level of emotional intelligence makes the positive impact of cognitive reappraisal strategy on guilt more significant. Specifically, students with higher emotional intelligence can effectively deal with guilt through cognitive reappraisal, and the mediating effect of this process is significant. The low level of emotional intelligence weakens the negative impact of expression inhibition strategies on guilt, which makes students have poor adjustment effect on guilt when using expression inhibition strategies. On the other hand, higher emotional intelligence reduces the negative impact of cognitive reappraisal on shame. This shows that by improving emotional intelligence, students can better cope with the shame that may arise in cognitive reappraisal, thereby reducing the experience of shame. At the same time, students with higher emotional intelligence can effectively deal with shame through expression suppression.

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