A Study on the Relationship between Foreign Language Writing Anxiety and Writing Achievement of Chinese Students: the Mediating Role of L2 Grit

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Abstract: Writing is one of the most important output foreign language skills. The cultivation of foreign language learners' writing skills is a complex and long-term process influenced by both internal and external factors. As the research on positive psychology in the field of second language acquisition goes deeper, exploring academic emotions and positive personality traits has become increasingly imperative. Such investigations hold the potential to offer novel insights and drive educational progress. However, the study on the integration of academic emotions and positive personal traits with specific language skills is relatively deficient. Accordingly, the present study attempts to explore the relationship between learners' foreign language writing anxiety, writing achievement and L2 grit in Chinese context. A total of 256 senior high school students in China participated in the study. The findings exhibit significant correlations between the three variables. Additionally, L2 grit plays a partial mediating role between foreign language writing anxiety and writing achievement. In the end, several relevant implications and suggestions for future research are also put forward.

1. Introduction

Against the backdrop that cultivating students' skills and abilities is the core of foreign language education [1], the cultivation of students' ability to comprehensively utilize specific language skills plays an irreplaceable role in the foreign language education system of China. Writing, a significant output language skill, has been receiving great attention from many scholars. However, students may generate various academic emotions negatively or positively affecting their academic performance [2], which will hinder or promote their learning progress. Foreign language writing anxiety, a negative academic emotion occurring during writing process, has been proved to negatively affect writing achievement in lots of research [3][4]. In order to further promote students' achievement and ensure their mental health, how to mitigate the negative emotion and reduce its negative impact on learning

is an important question for exploration.

With the introduction of positive psychology to second language acquisition (SLA) research [5], positive foreign language education belief is gradually formed. As the integration continues to deepen, more and more scholars expand the research field from foreign language emotions to grit, engagement, resilience and so on [6]. L2 grit, a positive personality trait, was found to have positive effects on foreign language learners' academic achievement [7]. However, few scholars integrate it with specific language skills and specific negative academic emotions. Therefore, the present study attempts to investigate the relationship between Chinese senior high school students' foreign language writing anxiety, L2 grit and writing achievement, and tries to find out the mediating role of L2 grit to seek practical means for educators to further promote the cultivation of their writing skills.

2. Literature Review

2.1 Definition of Foreign Language Writing Anxiety and L2 Grit

Writing anxiety was firstly proposed by Daly and Miller [8], representing behaviors which students experience during writing. Inspired by previous research and practical research, Cheng argued that foreign language writing anxiety is a negative feeling from both physical and psychological perspectives, which damages learners' writing process [9]. There are three aspects—somatic anxiety, avoidance behavior, and cognitive anxiety—that together constitute foreign language writing anxiety.

Grit is defined as perseverance and passion for long-term goals by Duckworth [10], entailing two aspects: perseverance of effort and consistency of interest. Meanwhile, corresponding measurement of grit is also proposed for deeper analysis. With the integration of positive psychology and second language acquisition, L2 grit, a language-domain-specific grit, was put forward, composing two aspects: perseverance of effort (PE) to overcome difficulties in L2 learning and consistency of interest (CI) in L2 acquisition [11]. Meanwhile, L2 grit scale was also put forward and utilized by many scholars. It was proved to be more suitable in the research field of SLA. Therefore, the definition of L2 grit and L2 grit scale are adopted in the present study.

2.2 Relationships among Foreign Language Writing Anxiety, L2 Grit and Writing Achievement

Research on the relationship between L2 learners' foreign language writing anxiety (FLWA) and writing achievement (WA) has drawn a number of scholars' attention. Negative and significant correlation between FLWA and WA was proved in research with various research participants [3][4]. In addition, some scholars also found that L2 grit can negatively predict FLWA [4]. However, the predictive effect of FLWA on L2 grit still needs further exploration. Based on that, the current study selected foreign language writing anxiety as a predictor variable and then sought to explore its predictive effect on L2 grit.

A large number of researches on the relationships between FLWA and WA were conducted at home and abroad. Consequently, most of the scholars found that FLWA negatively predicts WA [12] [13] [14]. In contrast, Saudi EFL learners' FLWA was found to have a positive effect on their WA [15]. As a result, it is necessary to explore the relationship between Chinese senior high school students' foreign language writing anxiety and their writing achievement.

As for the relationship between L2 grit and WA, the number of existing relevant research is limited since few research integrates L2 grit with specific language skills. Existing research results are also inconclusive. To elaborate, it was found that L2 writing grit are positively and significantly correlated with WA [16]. The former directly and significantly predicted the latter. Additionally, a significant and positive correlation between PE, and WA was also found. PE was a direct or indirect predictor on WA because of different writing genres, while the predictive effect of CI was insignificant [17]. On the

contrary, Li and Yuan's research findings demonstrated that both PE and CI cannot predict WA significantly [18]. Therefore, the relationship between Chinese senior high school students' L2 grit and writing achievement needs further investigation.

2.3 The Control-Value Theory

The control-value theory was initially proposed by Pekrun. Specifically, achievement emotions are decided by learners' appraisals of control and value [19]. Control appraisals are perceptions of individuals' ability to successfully perform and to get desired achievements. Value appraisals are dependent on subjective perceptions of the level of importance attributed to particular activities and results. On the basis of the theory, learners' experienced emotions in learning context have impacts on their motivation, cognition and action.

2.4 The Present Study

With the purpose of investigating the relationship between foreign language writing anxiety, L2 grit and writing achievement, three research questions of the present study are presented:

(1) What are the correlations between foreign language writing anxiety, L2 grit and writing achievement?

(2) Does L2 grit mediate the relationship between foreign language writing anxiety and writing achievement?

3. Methods

3.1 Participants

A convenience-sampling approach was utilized in two different senior high schools in Hebei province in China to select research subjects. A valid sample of 256 (141 female students, 115 male students) participants was finally gained after cleaning repeated responses. After the analyses of quantitative data, six of the participants were invited to participate in the semi-structured interview voluntarily. All of them speak Chinese as their mother tongue, and they have been learning English as their second language since they were in primary school.

3.2 Instruments

A questionnaire and semi-structured interview were employed to collect data from a more comprehensive perspective. There are three parts in the questionnaire, including demographic information part which is about students' gender information, L2 grit scale, and second language writing anxiety inventory. In addition, the average scores of writing section in two tests were collected to further analyze the writing achievement. The two tests were uniformly conducted by local education department. Furthermore, students' writing compositions in the two tests were evaluated according to a uniform standard by at least two teachers to ensure the reliability and validity.

3.2.1 L2 Grit Scale

L2 grit scale developed by Teimouri et al. was adopted in this study to evaluate participants' grit on English learning [11]. With 9 items in English, the L2 grit scale comprises two sub-dimensions—perseverance of effort (PE) and consistency of interest (CI) —which are all presented by a 5-point Likert-type, ranging from 1 (not like me at all) to 5 (like me very much). Specifically, PE possesses five items, evaluating participants' persistent dedication on English learning; and CI consists of four

items, investigating participants' stable interest in learning English. The L2 grit scale in this study demonstrates great internal consistency (Cronbach's α=0.822). The reliability coefficients of PE and CI are 0.851 and 0.754 respectively, which is also ideal enough to conduct further data analyses.

3.2.2 Second Language Writing Anxiety Inventory

The Second Language Writing Anxiety Inventory (SLWAI) with 20 items translated and validated by Guo Yan and Qin Xiaoqing was adopted in this study to collect data relevant to participants' anxiety during the English writing process [14]. The inventory comprises four aspects: Conceiving Anxiety (CA), Classroom Teaching Anxiety (CTA), Avoidance Behavior (AB) and Lack of Confidence (LC), which are all designed in the form of 5-point Likert scale. The internal consistency of SLWAI is 0.881, representing a relatively high reliability. Moreover, the four dimensions, CA (Cronbach's α=0.782), CTA (Cronbach's α=0.753), AB (Cronbach's α=0.814) and LC (Cronbach's α=0.771), also demonstrate good reliability for further analysis.

3.2.3 Semi-Structured Interview

Triangulation of the data is significant to help deeply explore the answers to research questions. As a subsequence, semi-structured interview with six questions was designed and conducted in the present study to collect relevant qualitative data. Six students who were invited randomly participated in the interview in face-to-face form. The interviews could further shed light on quantitative data analyses results.

3.3 Procedure

To start with, approval and permission were obtained from participants and the vice-principals in the targeted schools. The questionnaires were sent to the participants in the form of pen and paper to increase students' awareness to finish it carefully. With the help of teachers in targeted class, a brief introduction to the study and the questionnaires were given to students. After that, students completed the questionnaires within a recommended time frame. The questionnaires were collected immediately after the completion. Subsequently, six students were invited randomly to join in the semi-structured interview.

3.4 Data Analysis

SPSS 27.0 was employed to take analyses on the collected quantitative data after cleaning the invalid responses. To be more specific, Pearson correlation analysis was firstly utilized to investigate the correlations among participants' foreign language writing anxiety, L2 grit and writing achievement. Finally, regression analysis and mediation analysis were employed to explore and verify the mediating role of L2 grit. Additionally, thematic analysis [20] was used to analyze the transcriptions of interview data to make further supplements to the quantitative data analyses after transcribing interview data verbatim into written forms.

4. Results

4.1 Correlations between FLWA, L2 Grit and WA

To answer the second research question. Pearson Correlation Analysis is utilized to examine the correlations among participants' FLWA, L2 grit and WA. Table 2 offers a demonstration of the results. Generally, FLWA is negatively correlated with WA at a significant level (r=-0.506, p<0.01). On the

contrary, L2 grit exhibits a significant and positive moderate correlation with WA (r=0.504, p<0.01). Besides, FLWA is negatively and significantly correlated with L2 grit, which is at low level (r=-0.364, p<0.01).

Table 2 Correlations between FLWA, L2 Grit and WA(N=256)

	FLWA	CA	CTA	AB	LC	L2 Grit	PE	CI	WA
FLWA	1								
CA	.877**	1							
CTA	.853**	.765**	1						
AB	.602**	.384**	.250**	1					
LC	.704**	.502**	.573**	.140*	1				
L2 Grit	-.364**	-.229**	-.201**	-.506**	-.150*	1			
PE	-.312**	-.179**	-.150*	-.549**	-.038	.858**	1		
CI	-.289**	-.201**	-.185**	-.264**	-.228**	.791**	.365**	1	
WA	-.506**	-.339**	-.369**	-.503**	-.315**	.504**	.420**	.413**	1

Note: FLWA=Foreign Language Writing Anxiety; CA=Conceiving Anxiety; CTA=Classroom Teaching Anxiety; AB=Avoidance Behavior; LC=Lack of Confidence; PE=Perseverance of Effort; CI=Consistency of Interest; WA=Writing Achievement; * indicates that p<0.05; ** indicates that p<0.01. The same as below.

When it comes to the sub-dimensions of L2 grit and FLWA, the findings also demonstrate different results. To elaborate, both PE and CI are found to possess moderate and positive correlations with WA at significant levels (r=0.420, r=0.413, p<0.01). On the contrary, all four sub-dimensions of FLWA show negative and significant correlations with WA respectively. To be more specific, CA, CTA and LC exhibit low and negative correlations with WA respectively (r=-0.339, r=-0.369, r=-0.315, p<0.01). However, AB possesses a moderate and negative correlation with WA (r=-0.503, p<0.01).

4.2 Mediating Role of L2 Grit between FLWA and WA

In order to conduct further analyses on the mediating role of L2 grit between FLWA and WA, multiple regression analysis and bootstrap sampling method are adopted to investigate the answers to the third research question.
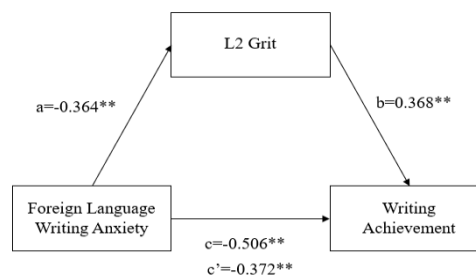

Figure 1 The Model of Mediation Analysis

Specifically, Table 3 presents regression analyses results. Accordingly, FLWA exhibits a direct negative and significant predictive effect on WA with a demonstration that 25.6% of the variation of WA can be explained by FLWA (β=-0.506, R^2=0.256, p<0.01). Therefore, the coefficient *c* of that path is -0.506. What's more, as for the relationship between FLWA and L2 grit, FLWA negatively and significantly predicts L2 grit (β=-0.364, p<0.01), demonstrating that the coefficient *a* of this path is -0.364. In addition, when L2 grit enters the path from FLWA to WA, the indirect predictive effect still keeps significant (R^2=0.374, β=-0.372, p<0.01). Moreover, L2 grit also shows a positive and significant predictive effect on WA (β=0.368, p<0.01). Subsequently, the coefficient *b* and *c'* of this

path are 0.368 and -0.372 respectively. All of the above provides evidence that L2 grit partially mediates the relationship between foreign language writing anxiety and writing achievement. The relationship model between the three variables is exhibited in Figure 1.

Table 3 Multiple Regression Analysis Results

Regression Model		Core Regression Statistics					
Independent Variable	Outcome Variable	Coefficient	R^2	F	t	β	95%CI
FLWA	WA	-1.139	0.256	87.452**	-9.352**	-0.506	[-1.378, -.899]
FLWA	L2 Grit	-0.376	0.133	38.906**	-6.237**	-0.364	[-.494, -.257]
FLWA	WA	-0.837	0.374	75.487**	-6.960**	-0.372	[-1.073, -.600]
L2 Grit		0.804			6.893**	0.368	[.574, 1.034]

5. Discussion

With the purpose of investigating the relationship between Chinese senior high school students' foreign language writing anxiety and writing achievement, particularly if L2 grit could play a mediating role in the influencing path of foreign language writing anxiety on writing achievement, the present study conducts a series of deep analyses on the data results.

5.1 Discussion on the Correlations between FLWA, L2 Grit and WA

5.1.1 Correlation between FLWA and L2 Grit

A negative and significant correlation between FLWA and L2 grit was found in the present study, which is consistent with existing research results [4] [23] [24]. It suggests that senior high school students with more diligence and interest in learning English writing feel less nervous. Senior high school students may feel less anxious when they have invested continuous efforts or have consistent interest in the writing task. Especially in China, students are always told to study hard and focus on continuous accumulation, which may help them possess more confidence and relieve negative feelings.

5.1.2 Correlation between L2 Grit and WA

The present study also found a positive and significant correlation between L2 grit and WA, suggesting that students with more diligence and interest in learning have better writing scores. Similar to previous research [16] [17] [24], students who have engaged more in learning English and possessed consistent interest in English writing always gain ideal writing achievement. To elaborate, the persistence on English writing learning promotes students' mastery of basic language knowledge and cultivates their inspirit of continuing to work hard even though there are setbacks. Moreover, when students feel interested in particular writing task, they will smoothly conceive and be more willing to express real opinions.

5.1.3 Correlation between FLWA and WA

Regarding the second research question, the correlations between FLWA, L2 grit and WA are significant. The significant and negative correlation between FLWA and WA is the same as previous research findings [12] [13], demonstrating a tendency that students with higher FLWA may get lower WA, which is a result from both internal and external factors. Specifically, Student A said,

"I feel very nervous when I am writing, because I am always afraid to use grammar incorrectly or to meet unfamiliar words. Then I conceive logically and leads to unideal scores finally." (Student A)

Consequently, internal factors such as lack of confidence, inadequate mastery of grammar and

vocabulary, and external factors such as limited time and others' evaluation, result in anxious feelings and pose negative impacts on writing achievement.

5.2 Discussion on the Mediating Role of L2 Grit between FLWA and WA

For the third research question, it's found that FLWA negatively and significantly predicts WA. Furthermore, L2 grit can predict WA positively and significantly. More importantly, L2 grit plays a partial mediating role in the relationship between FLWA and WA, which is attributed to several factors.

Firstly, when students insist on learning English writing, they can overcome the trouble they meet in writing. Although they make some mistakes in writing or get unideal scores, they may regard mistakes and failures as opportunities to make further improvements rather than attribute them to lack of ability, reducing the generation of writing anxiety. For example, in the interview, Student F said,

"In the last exam, for example, I was not familiar with some words in the writing directions, so I got low score. However, I do not feel very anxious. Instead, I think it is a great chance for me to accumulate new words. I can make corresponding improvements to get good results next time."

Besides, students with higher L2 grit can get better writing achievement. They persist in implementing plans about writing exercises. The continuous efforts are helpful for them to enhance their writing skills, and then improve their writing achievement. Moreover, it can also be well explained by control-value theory. The college entrance examination is endowed with high task value in Chinese context. The high value students perceived promotes them to make continuous efforts. Therefore, even though they meet difficulties, they still actively seek solutions to mitigate their anxiety to the examination and gain expected achievement. The result of semi-structured interview also echoed that explanation:

"I always feel anxious, breathe quickly when I write in the exam. However, I actively take measures to mitigate the anxiety, such as breathing deeply or drinking water. When I feel relieved, I can recall many expressions remembered before and write smoothly. Eventually, my writing score is ideal". *(Student D)*

6. Conclusion

The relationship between Chinese senior high school students' foreign language writing anxiety and writing achievement, particularly the mediating role of L2 grit, has been investigated in the present study. It's found that FLWA is negatively and significantly correlated with WA. Similarly, the correlation between FLWA and L2 grit is also negative and significant. On the contrary, L2 grit is positively and significantly correlated with WA. In addition, the partial mediating role of L2 grit between FLWA and WA is also verified in this study.

On the basis of the above findings, the study offers some implications for educators. To start with, it is significant for educators to focus on learners' emotional state during learning. Creating a relaxing and friendly atmosphere and offering tips for learners to mitigate negative emotions are also important. Furthermore, educators also need to cultivate learners' grit by encouraging their efforts and activating their interest in learning.

Even though the present study has put forward some implications, there are still some limitations for future improvement. Firstly, the sample size of the study is small and limited, which needs further expansion to other grades and regions. Secondly, the present study is cross-sectional, which would be more comprehensive by using longitudinal research design. The results of future study would be deeper if it makes corresponding adjustments and improvements.

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