

The Mediating Effect of Writing Self-efficacy between the Second Language Motivational Self-system and Writing Skills from the Perspective of Personality Psychology

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Abstract: This study utilizes AMOS to test the mediating effect of writing self-efficacy between the second language motivational self system and writing skills. The study finds that: 1) second language ideal self has a significant predictive effect on writing self-efficacy ($P=***<0.05$); 2) second language ought to has no significant predictive effect on writing self-efficacy ($P=0.470>0.05$); 3) second language learning experience has a significant predictive effect on writing self-efficacy ($P=0.03<0.05$); 4) writing self-efficacy can significantly predict writing skills ($P=***<0.05$); 5) writing self-efficacy has a partial mediating effect between the second language motivational self-system and writing skills.

Keywords: Motivational Self-system; Writing Self-efficacy; Structural Equation Modeling; Language Acquisition

1. Introduction

Foreign language writing is an important language skill in the process of English acquisition. It reflects the degree to which the learner grasps the language, and also mirrors the learner's reasoning thinking mode. It is an important indicator factor for foreign language ability measurement [1, 2]. With the development of personality psychology, people have begun to realize that inner psychological factors play an important role in language learning. Second language motivation and self-efficacy are important concepts of psychological factors in the process of language acquisition. Studies have shown that second language ideal self, ought to self, learning experience and self-

efficacy are closely intertwined [3, 4]. Self-efficacy can effectively predict learners' performance, and language learners can use their subjective initiative to improve their English proficiency [5, 6]. However, through the mediating role of writing self-efficacy, how does the second language motivational self-system affect the acquisition of learners' writing skills? At present, few studies have been conducted to address this issue.

2. Literature Review

2.1 Second Language Motivational Self-system and Writing Skills

The second language motivational self system is a motivational theory created by Dörnyei [7] combined with the Self-Discrepancy theory in personality psychology, with a strong humanistic thought. The theory consists of three parts: second language learner's expectations for their ideal level of foreign language learning, which is called the second language ideal self; second language learners are learning languages in order to cater for external expectations (for example, parents want their children to achieve good results in examinations) or working hard to avoid some negative punishments, which is called the second language ought to self; second language learners have different feelings based on different situations in the language learning process, such as the learning location, the teaching methods and the learning partners around them, and these factors will have more or less impact on the learner's learning attitude, which is called learning experience. Since the emergence of the second language

motivational self system, it has attracted wide attention at home and abroad, and the research content has gradually deepened and developed. The initial research was about the effect of the second language motivational self system on English proficiency^[8, 9] and then about the combined influences of the second language motivational self-system with language learning behaviors and other factors in the language learning process. For example, X. Wei^[10] used correlation analysis and equation model to explore the relationship between the second language motivational self system and learners' autonomous learning behavior, and found that the second language ideal self and second language learning experience have a significant impact on learner's autonomous learning behavior. Ueki and Takeuchi^[6] used 151 second-language learners in Japan as subjects to study the dynamic cross-relationships of self-efficacy, learning anxiety, and second language motivational self-system and found that self-efficacy has a significant correlation with the second language ideal self and learning experience. Piniel and Csizér^[11] used 236 second language learners from different middle schools in Hungary as a survey group in order to explore the differences of self-efficacy, learning anxiety and second language motivation among learners. It can be seen that scholars at home and abroad mostly focus on the cross-relationship between the second language motivation system and other psychological factors. There are relatively few intermediary studies on the impact of the motivational system and self-efficacy to English proficiency, especially those that explore its impacts on English skills.

2.2 The Mediating Effect of Writing Self-efficacy

In the past ten years or so, writing self-efficacy has received the attention of many applied linguists^[12]. Some scholars define writing self-efficacy as a second language learner's self-recognition and judgment on whether they are capable of completing different types of writing tasks^[13]. Compared with the learner's sense of efficacy on his own writing ability formed in the long-term social life, the second language motivational self system is more immediacy, which means that the learner's surrounding environment and the learning

situation that he is experiencing are both having a certain impact on his current second language learning motivation^[14], and it is this immediate learning experience and feedback that condense into a sense of long-term stability of self-efficacy.

It has commonly been assumed that writing self-efficacy has a mediating effect between the second language motivational self-system and writing skills. On the one hand, the second language motivation have a positive effect on self-efficacy^[15]. Through regression analysis and correlation analysis, Roshandel et al. found that the second language ideal self can significantly predict self-efficacy. However, whether the second language motivational self system can also produce the same predictive effect on writing self-efficacy is a question that needs to be further verified in this article. On the other hand, related research results have gradually confirmed that writing self-efficacy is significantly related to learners' writing performance and is one of the effective factors in predicting whether writing learning is effective or not. Li, Liu and Liu^[16] investigated the cross relationship between second language writing self-efficacy and writing performance of 356 college freshmen in the context of a foreign language writing classroom, and found that foreign language writing self-efficacy can significantly predict students' foreign language performance. Pajares^[3] found that learners' recognition and confidence in their writing ability can affect their learning motivation and can effectively predict writing performance. Woodrow^[17] used 738 college students from four universities in China as subjects, and found that self-efficacy has a completely mediating effect between learning anxiety and writing performance. One of the reasons why these research shared similar research findings might be that second language learners with high self-efficacy will feel less pressure from the outside and invest more time in English learning.

To date, researches about the mediating effect of the writing self-efficacy on second language motivational self-system and English writing skills are rare, whereas exploring the mediating effect of writing self-efficacy is helpful to understand how the second language motivational self-system and writing efficacy affect the writing skills of second language learners, and help foreign language teachers to

better understand the psychological activities of students so as to carry out writing lessons more efficiently. Besides, the related results can be used to guide foreign language learners if they want to acquire the writing skills on their own. Therefore, this article focuses on three research hypotheses: H1a. The second language ideal self has a positive effect on writing self-efficacy; H1b. The second language ought to self has a positive effect on writing self-efficacy; H1c. The second language learning experience has a positive impact on writing self-efficacy; H2: Writing self-efficacy has a positive impact on writing skills; H3: Writing self-efficacy produces a mediating effect between the second language motivational self-system and writing skills.

This study is based on three research hypotheses to establish a mediating model M1. The model includes five variables: writing self-efficacy, second language ideal self, second language ought to self, second language learning experience, and writing skills (see Figure 1). The three dimensions of second language motivational self system are regarded as antecedent variables, writing self-efficacy is regarded as an intermediate variable, and writing skill level is regarded as a posterior variable.

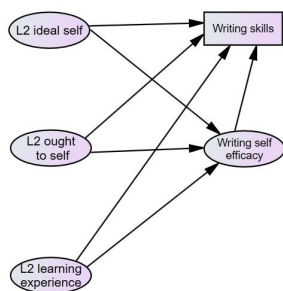


Figure 1. The mediating model of Writing Self-efficacy M1

3. Research Design

3.1 Questionnaire Design

The second language motivational self-system part of this questionnaire draws on existing foreign questionnaires as the theoretical basis, and at the same time takes the actual situation of Chinese English learners into considerations for integration. Besides, the writing self-efficacy part is based on the questionnaire designed by Li ^[1]. The whole questionnaire is divided into two parts. The first part collects

students' personal information and their scores of the "FLTRP (Foreign Language Teaching and Research Press) Cup" National English Writing Contest. The second part is composed of the writing self-efficacy and the L2 motivational self-system. On the one side, the writing self-efficacy questionnaire includes three items. On the other side, the second language motivational self system includes three dimensions, namely the second language ideal self, the second language ought to self, and the second language learning experience.

3.2 Data Collection

The data collection took the form of classroom collection. A total of 140 questionnaires were distributed. According to the screening principle that partly or totally uncompleted questionnaires are invalid, 140 questionnaires had been carefully reviewed and a total of 128 valid questionnaires were finally recovered, with an effective recovery rate of 91.4%.

3.3 Participants

After screening, the basic information of 128 effective samples are as follows: (1) Gender ratio: males account for 59.38%, females account for 40.62%; (2) Major distribution: these samples come from different majors and the proportion of social sciences and engineering each account for 50%; (3) Education level: The subjects are all freshman students in a comprehensive university in the northwest region of China. When the survey was conducted, these students had already attended the "FLTRP Cup" National English Writing Contest. Each week, they had two class hours for English learning. Writing tasks were regularly administered on weekly basis in order to help them prepare for the competition. They are Chinese native speakers and they have been learning English since they attended primary school. They have never learned other foreign languages before, that is to say, English is their only acquired foreign language and none of them have never travelled abroad before.

4. Data Analysis

4.1 Reliability and Validity Test

To begin with, this article uses SPSS 26.0 to test the reliability and validity of the questionnaire. The Cronbach value of the scale

is between 0.803 and 0.914, and the combined reliability (CR) is between 0.8353 and 0.9071, both of which are higher than 0.7, that is to say the reliability of the scale is high (see Table 1). Besides, the KMO value of the questionnaire and Bartlett's sphericity test are 0.869 and 1513.802 respectively, and the significance level is 0.000, less than 0.05, which shows that

the results of the questionnaire are highly valid. Then the confirmatory factor analysis (CFA) has been used to analyze the validity of the questionnaire. The standard load values of this scale are between 0.639 and 0.87, which are both higher than 0.5, that is to say the model is well adapted and the scales are consistent.

Table 1. Standard Load, Cronbach's a, CR and AVE Values of Each Factors

Latent variable	Observation variable	Standard load	Cronbach's a	CR	AVE
L2 ideal self	IL2S1	0.820	0.914	0.9071	0.6625
	IL2S2	0.830			
	IL2S3	0.849			
	IL2S4	0.862			
	IL2S5	0.698			
L2 ought self	OL2S1	0.749	0.803	0.8353	0.5051
	OL2S2	0.712			
	OL2S3	0.785			
	OL2S4	0.658			
	OL2S5	0.639			
L2 learning experience	2LE1	0.782	0.888	0.8808	0.5972
	2LE2	0.784			
	2LE3	0.811			
	2LE4	0.798			
	2LE5	0.682			
Writing self efficacy	WSE1	0.801	0.901	0.8805	0.711
	WSE2	0.857			
	WSE3	0.870			

4.2 Simulation Fitting and Hypothesis Testing

This article uses AMOS to test the significant correlation among the various paths in the model. The results show that writing self-efficacy has a partly mediating effect between the L2 motivational self system and writing skills. But the L2 ought to self is not able to effectively affect the writing efficacy ($p=0.470>0.05$). Therefore, the mediation effect model is further revised to eliminate the path that cannot produce the mediation effect and the observed variables with low path coefficients (see Figure 2). Then the overall fitness value of the repaired M2 model has been measured to determine whether it is valid. 1) Evaluation of the overall fitness of the equation model Table 2 lists the main fitness indicators in structural model testing. The results show that all the fitness indicators are within the recommended value range, which shows that the theoretical model matches well with the scale and the fit is high, thus the model can be established.

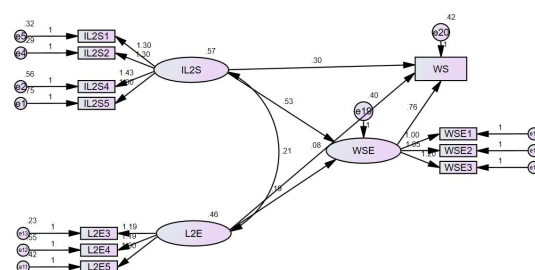


Figure 2. The Mediating Model of Writing Self-efficacy M2

Table 2. The Fitness Index Value of the Structural Equation Model

Fit index	Recommended value	Fitted value
X2	Less is better	81.497
X2/df	<3.0	1.663
GFI	>0.9	0.909
AGFI	>0.8	0.856
RMSEA	<0.08	0.072
NNFI	>0.9	0.912
IFI	>0.9	0.963
CFI	>0.9	0.962

2) Correlations

Results of correlation analysis revealed a

positive relationship between L2 ideal self and L2 learning experience ($r=0.41, p<0.001$) and a positive relationship between Writing self efficacy and L2 ideal self ($r=0.51, p<0.001$). In addition, the values of all latent variables are less than the square root of its corresponding AVE (see table 3), which means that the latent variables are moderately correlated with each other and are distinguishable from each other, suggesting that the discriminant validity of the scale is ideal.

Table 3. Correlations

	IL2S	L2E	WSE
IL2S	0.66		
L2E	0.41***	0.59	

Table 4. Hypothesis Test Results

Hypothesis	Standardized path coefficient	S.E.	C.R	P-value	Result
H1a: Writing self efficacy <--- L2 ideal self	0.450	0.104	4.311	***	Support
H1b: Writing self efficacy <--- L2 ought to self	-0.075	0.104	-0.723	0.470	Not support
H1c: Writing self efficacy <--- L2 learning experience	0.338	0.153	0.2963	0.03	Support
Writing skills <--- L2 ideal self	0.213	0.106	2.555	0.011	-
Writing skills <--- L2 ought to self	-0.245	0.106	-2.978	0.03	-
Writing skills <--- L2 learning experience	0.287	0.160	3.103	0.002	-
H2: Writing skills <--- Writing self efficacy	0.538	0.112	6.181	***	Support

Note: *** means significant correlation at the 0.001 level.

According to the table 4, the second language ideal self has a significant positive effect on writing self-efficacy ($\beta=0.450, p<0.05$); the second language ought to self has no significant effect on writing self-efficacy ($\beta=-0.075, p> 0.05$); the second language learning experience has a significant positive impact on writing self-efficacy ($\beta=0.338, p < 0.05$); the second language ideal self has a significant positive impact on English skills ($\beta=0.213, p < 0.05$); The second language ought to self has a significant negative impact on English skills ($\beta=-0.245, p < 0.05$); the second language learning experience has a significant positive impact on English skills ($\beta=0.287, p < 0.05$);

WSE	0.51***	0.16	0.71
The square root of AVE	0.81	0.77	0.84
*** $p<0.001$			

3) Test results of research hypotheses

The assumptions about the relationship between the latent variables, the standardized path coefficient, and the p-value are shown in Table 4. It can be seen that the second language ought to self does not affect writing self-efficacy and negatively affects writing skills. Whereas second language ideal self and second language learning experience have significant correlation with self-efficacy and writing skills.

self-efficacy has a significant positive effect on writing skills ($\beta=0.538, p<0.05$).

4) Analysis of the mediating effect of writing self-efficacy

In order to further explore the mechanism of how second language motivational self-system and writing self-efficacy influence the writing skills of foreign language learners, this paper constructs a theoretical model using writing self-efficacy as an intermediary variable between the second language motivational self-system and writing skills. In this paper, we use bootstrap to repeat sampling 5000 times to verify the mediating effect of writing self-efficacy. This repeated sampling method can make results more stable.

Table 5. Path Coefficients of the Mediation Effect Model

Intermediary path	Effect	Effect size	95% confidence interval		P-value	Effect ratio
			Lower	Upper		
IL2S→WSE→WS	overall effect	0.455	0.244	0.637	0.001	-

	Direct effect	0.213	0.056	0.386	0.011	46.81%
	Indirect effect	0.242	0.116	0.405	0.000	53.19%
OL2S→WSE→WS	overall effect	-0.286	-0.507	-0.104	0.003	-
	Direct effect	-0.246	-0.433	-0.083	0.005	86.01%
	Indirect effect	-0.04	-0.193	0.078	0.447	13.99%
L2E→WSE→WS	overall effect	0.469	0.258	0.700	0.000	-
	Direct effect	0.287	0.096	0.494	0.002	61.19%
	Indirect effect	0.182	0.46	0.370	0.005	38.81%

If the 95% confidence interval does not contain zero, the mediation effect is significant. According to the standard, It can be seen that in the mediation path "L2 ideal self→writing self-efficacy→English skills"(see table 5), the mediation effect value of self-efficacy is 0.242, indicating that the mediation effect exists. Besides, the direct effect is significant, indicating that the mediation is partial mediation, and the indirect mediation effect accounts for 53.19%.

In the mediation path "L2 ought to self→writing self-efficacy→English skills", the mediation effect of self-efficacy is -0.04, and the 95% confidence interval contains 0, indicating that the mediating effect does not exist.

In the mediation path "L2 learning experience→writing self-efficacy→English skills", the mediation effect of self-efficacy is 0.182 and the 95% confidence interval does not contain 0, indicating that the mediating effect exists. Besides, the direct effect is significant, indicating that the intermediary is a partial intermediary, and the indirect intermediary effect accounts for 38.81%.

5. Discussion

This research partially proves three previously proposed hypotheses. First, according to the data analysis, the L2 ideal self has a positive impact on writing self-efficacy (The H1a is established). Learners with higher self-ideal tend to have higher expectations of themselves ($P=***<0.05$), and evaluate their own competence higher. This result is in line with the research finding of Dörnyei and Ushioda [4]. The possible reason is that students with higher ideal self-level have higher requirements for themselves, so they will spend more time and energy on how improve their writing skills and dare to try different writing tasks and overcome difficulties. Overcoming difficult problems unceasingly will undoubtedly enhance students' sense of writing efficacy

subtly. At the same time, the L2 learning experience has a predictive effect on learner's writing self-efficacy ($P=0.03<0.05$). Roshandel et al. [15] believe that learner's second language motivational system has a predictive effect on self-efficacy. The study extends the scope of their research, that is to say, the second language motivational system also has impacts on writing self-efficacy. This predictive effect of the L2 learning experience may be due to the encouragement of peers and the sense of accomplishment in completing the writing task during the learning process, thereby enhances their inner writing self-efficacy. Nevertheless, the second language ought to self has no significant influence on writing self-efficacy ($P=0.470>0.05$), which is because the ought to self is composed of external factors such as society and family. However, the value-based instruction received by contemporary teenagers is more open than other age groups, and their thinking mode is more independent and mature. Therefore, in the process of foreign language learning, the impact of external expectations on these teenagers have been weakened and they pay more attention to their internal needs.

Secondly, writing self-efficacy has a positive effect on writing skills ($P=***<0.05$), that is to say, students with higher writing self-efficacy are more likely to achieve better results in the writing test (The H2 is established). This result once again validates the argument that writing self-efficacy positively predicts English proficiency in previous studies [1-3].

Finally, self-efficacy partly plays the mediating effect between the second language motivational self-system and writing skills (The H3 is established). This result shows that the second language ideal self and learning experience can not only indirectly affect learners' writing skills through writing self-efficacy, but also directly affect learners' writing skills. This result partially validates the findings that the L2 ideal self and learning

experience can positively predict learners' English proficiency proposed by X. Wei ^[10] and Dörnyei & Ushioda ^[4]. This is because if learners work hard to reduce the difference between their second language ideal self and the second language ought to self, they can achieve better academic performance. At the same time, a good learning experience such as a comfortable learning environment or continuous successful learning experience will strengthen learner's passion for language, thereby further improve their language performance. Then, the improvement of language performance will shape their self-belief and make them engage in learning, and it finally becomes a positive cycle of language learning.

6. Conclusion

This study uses AMOS software to establish a intermediary model of self-efficacy between the second language self-motivation system and writing skills. It has found that self-efficacy has partial mediating effects among the second language ideal self, learning experience and writing skills; there is no mediating effect between the second language ought to self and writing skills.

The findings of this research implies some pedagogical implications. At present, many studies on self-efficacy have put forward the idea that a certain amount of special training should be given to their self-efficacy. This paper finds that self-efficacy can not only positively predict writing skills, but also partially mediate the influence of self-motivation systems on writing skills. Therefore, it provides support for self-efficacy training from an empirical perspective. In addition, this study finds that the second language ideal self and learning experience not only have a positive impact on self-efficacy, but also have a direct impact on writing skills. Therefore, teachers should take the ideal self element into considerations when designing curriculum tasks. In this way, teachers will help students shape a greater second language ideal self, establish a good sense of language learning identity, and even pave the way for their future language development in advance. What's more, more consideration should also be given to the students' actual learning experience. The tasks carried out in the classroom should be kept in the challenge area of student's

competence because dreadfully difficult writing tasks tend to negatively affect the student's learning experience.

There are still some limitations of this study. First, the research adopts a quantitative research method, thus the tracking of how participants acquire their writings skills is insufficient in terms of time continuity. Therefore, future studies can track the dynamic changes in learners' writing performance, such as using time lag cross correlation to supplement the results of this research. Second, given the huge number of Chinese college students, the sample size of this study is not sufficient to reflect the general situation of Chinese college students. Future research can enlarge samples of college students to investigate student's L2 writing self-efficacy and motivational self system in specific writing tasks. Although there are a few deficiencies in the research, existing research results can provide references for the study of the relationship between writing self-efficacy and writing skills.

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