The impact of Self-Efficacy on Foreign Language Performance among High School Students

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Abstract. In recent decades, the notions of self-efficacy and fear of failure have attracted considerable research attention in the field of educational psychology. However, research on the influence of these two variables on foreign language performance is limited, and empirical data about the potential mediating function of fear of failure in the mechanism of self-efficacy impacting academic performance is lacking. This study is conducted with Chinese high school students as the target population to investigate these two variables. A questionnaire is designed and analyzed to explore whether fear of failure mediates the relationship between self-efficacy and foreign language (FL) performance. This study finds that self-efficacy has no discernible effect on fear of failure, indicating that the indirect effect between these variables is also not significant. However, high school pupils' performance in a foreign language is affected by their level of self-efficacy and their fear of failure, and the variables are independent of each other. Researchers believe that these two variables can be considered a set of psychological indicators of students' perceptions of the academic curriculum, which can influence students' foreign language performance. Furthermore, the results reveal that grade, language studied by students, beliefs about effort, and other factors also influence students' foreign language performance.

Keywords: Fear of failure; Self-efficacy; foreign language performance; High school students; Mediating Effect.

1. Introduction

In the past three decades, the notions of self-efficacy and fear of failure have garnered significant attention by the psychology discipline, and have sparked a great amount of research from the fields of educational psychology. There are numerous studies focusing on how these notions impact teaching and learning separately, contributing to improving student academic performance.

In the theory of social cognition, self-efficacy is an essential notion initially proposed by Bandura [1]. It is defined as efficacy expectation first, referring to an individual's prediction of whether a particular behavior can proceed smoothly in a specific situation and lead to the expected outcome. It is more dynamic than outcome expectation as it involves not only the expectation of results but is also related to efforts and environmental judgments. Beyond influencing human behaviors, thought patterns, and motivation, self-efficacy also impacts the stress and depression levels perceived by an individual under certain circumstances, such as facing danger [2].

Fear of failure as a form of avoidance motivation which was first mentioned in Murray's work [3]. The greater the gap between individual performance and expected standards, the higher the fear of failure. McClelland et al. later describe the notion of fear of failure as the opposite of the hope for success, characterizing it as an individual's avoidance response when anticipating potential failure [4].

Research shows that academic achievement or grades, including GPA, subject grade, mid-term exam, and more are positively impacted by self-efficacy [5]. This influence can impact more than a single semester, creating ongoing positive or negative cycles. The impact of self-efficacy on academic achievement has been widely confirmed and may be moderated by factors such as social support, which indicates that there may be more potential elements moderate or mediate between self-efficacy and academic performance [6].

Self-efficacy and fear of failure have a close relationship. Low self-efficacy causes students to be less confident in their capacity to do effectively under certain conditions and more likely to consider their efforts in such activities futile, which depletes motivation and decreases the possibility of succeeding or achieving goals. Recent research shows a negative correlation between self-efficacy and fear of failure, with fear of failure influencing student performance by negatively affecting their vocational adaptability [7].

The effect of fear of failure on academic performance is significant. Excessive fear of failure can prevent students from discovering their full potential, leading to stress, anxiety, and avoidance behaviors, ultimately affecting academic performance [8]. Under the interactive effects of aimlessness and low motivation caused by fear of failure, students are more likely to have worse academic performance, and in extreme cases, truancy can occur for students to evade the academic performance measurement [9].

While extensive research focuses on exploring the connection between self-efficacy, fear of failure, and academic performance, there are still some research gaps. For instance, self-efficacy and fear of failure affect learning behaviors, yet their impact on non-English foreign language learning among Chinese high school students has not been clarified. Also, current discussions rarely focus on high school students who opt to study foreign languages other than English, with most foreign language performance research primarily targeting English learners. Especially nowadays some Chinese domestic high schools offer not only English but also Japanese, German, and Korean to students, which indicates that students learning other foreign languages should be more included in the research in the future. Additionally, few studies discuss all three elements simultaneously, and even rarer is the research that treats fear of failure as a mediator between self-efficacy and FL performance.

Addressing these issues, this study targets Chinese high school students, aiming to cover students studying different foreign languages. This research aims to investigate how fear of failure mediates between self-efficacy and foreign language performance among high school pupils, thereby further explaining the mechanism of how self-efficacy influences foreign language performance. This research will fill some gaps in the current academic research and provide empirical support for foreign language learning research, promoting foreign language education policies.

2. Methods

2.1. Design

In this study, researchers use quantitative research to investigate. The research object is high school students in mainland China, from traditional Chinese high schools and international schools. Researchers conduct questionnaires to these high school students and use them to get students' self-evaluation on their foreign language studies. Finally, researchers collect all the questionnaires for review and data analysis.

The content of the questionnaire includes personal information, survey questions about the mechanism of how self-efficacy and fear of failure influence foreign language performance, general self-efficacy scale, and fear of failure assessment scale. Pupils' foreign language performance is assessed based on final grades of the semester and dynamic process and efforts.

In this study, researchers use a self-declaration system, applying the Likert 5-point scoring format. According to the 5-point scoring system, students select their own score range from the five score ranges to represent their final grade level, and their recent progress situations are subjectively evaluated as the same way.

To evaluate Chinese students' self-efficacy, researchers use the promoted version of the General Self-Efficacy Scale [10]. The Chinese version of the General Self-Efficacy Scale consists of 10 questions, including 5 questions about action self-efficacy and 5 questions about coping self-efficacy. The scale uses a Likert 4-point scoring system, which has good reliability and validity for primary school and high school students in mainland China.

Another scale used by this study is the fear of failure assessment scale, which is edited for students in mainland China based on the Performance Failure Appraisal Inventory [11]. There are 20 questions included in the scale which are divided into 5 dimensions, namely “Fear of Experiencing Shame & Embarrassment” (6 questions); “Fear of Devaluing One's Self-Estimate” (3 questions); “Fear of Having an Uncertain Future” (4 questions); “Fear of Decreasing Social Value” (4 questions); and “Fear of Upsetting Important Others” (3 questions). The scale uses the Likert 5-point scoring system and also has good reliability and validity.

2.2. Research Object

In this study, researchers conduct online surveys among high school students in mainland China, who are mainly from Sichuan, Zhejiang, and Guangdong regions. The samples include traditional Chinese high school students and international high school students, who aim to apply for universities abroad for their undergraduate studies. The samples contain 340 high school students, including more than 30 valid samples in each different language category (English, Japanese, and German).

2.3. Research Process

When most of the high school students have received their final scores, the researchers conduct all the questionnaires online and use the self-evaluation questions to obtain high school students’ final foreign language scores. It is supposed to be mentioned, different languages use different scales of scores to assess students’ performance. For example, English, Japanese, and German’s total scores are up to 150, but Korean’s full score is up to 100. As a result, the self-reporting system adopted in this study avoids the conversion of the scores and makes the measurement of foreign language achievement more consistent. Also, the study adopts the evaluation of students’ progress into the evaluation of students’ foreign language performance, which makes the evaluation of foreign language performance more reliable. After a week, all the questionnaires are collected for review and data processing.

2.4. Analysis Method

This paper uses SPSS 26.0 to process data and employs the mediation analysis procedure to examine the correlations and the mediating effects between variables.

3. Results

3.1. Sample Description and Scale Reliability and Validity

In this study, the researchers collect 340 questionnaires in total. Furthermore, there are 268 valid questionnaires in total.

In these valid questionnaires, there are 116 male samples, accounting for 43.3%, 151 female samples, accounting for 56.3%, and 1 sample from other gender, accounting for 0.4%.

Regarding the type of high school of the samples, 206 samples are from traditional Chinese high schools, accounting for 76.9%, and the other 62 samples are from international high schools, which aim to go oversea universities in the future, accounting for 23.1%.

Furthermore, there are 56 samples in Grade 10, equivalent to the first year of traditional Chinese high schools, accounting for 20.8%, 80 samples from Grade 11, equivalent to the second year of traditional Chinese high schools, accounting for 29.9%, 132 samples from Grade 12, equivalent to the last year of traditional Chinese high schools, accounting for 49.3%.

According to the different language categories studied by the samples, there are 129 samples learn English, accounting for 44.8%, 102 samples learn Japanese, accounting for 36.1%, 40 samples learn German, accounting for 14.9%, and 6 samples learn Korean, accounting for 2.2%.

Additionally, the promoted version of the General Self-Efficacy Scale’s Cronbach's alpha is 0.916, and its Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is 0.943. Also, the fear of failure

assessment scale's Cronbach's alpha is 0.879, and its KMO measure of sampling adequacy is 0.925. These results indicate that the two scales show good reliability and validity.

3.2. Analysis of Variance on the Survey Questions

The researchers conduct an analysis of variance on the basic attributes of the samples and survey questions answers, and discover some noteworthy findings. First, in the analysis of grade, as shown in Table 1, the significance level of self-efficacy is 0.011, which indicates that grade can influence the perception of self-efficacy. Then, in multiple comparisons, it shows that efficacy perceived by senior high school students (Grade 12) was significantly higher than that of junior high school students (Grade 11).

One of the reasons that students in Grade 12 have higher self-efficacy than students in Grade 11 may be the number of times of taking examinations in foreign language classes. With more time to take foreign language examinations, students can get a higher level of knowledge, learning abilities, as well as their confidence level. Due to the higher confidence level, students in Grade 12 have higher self-efficacy levels.

Table 1. Analysis of Variance of Grade.

Dependent Variable	Sum of Squares	Mean Square	F	Significance Level
Self-Efficacy	4.812	2.410	4.624	0.011
Fear of Failure	0.358	0.179	0.398	0.672
Foreign Language Performance	1.002	0.501	0.121	0.886

In the analysis of the languages studied by students, as shown in Table 2, the significance level for self-efficacy is 0.000, which indicates that the language studied can influence the perception of self-efficacy. Subsequently, in multiple comparisons, it is found that students learning Japanese perceive higher levels of self-efficacy compared to students learning English and German.

In different foreign language categories, the radius of knowledge, the difficulty of examination, and the performance specification are all variables. These variables might be very different in each foreign language category. For instance, some schools use students' Grade-Point Averages to evaluate their performance level in foreign language studies. This might be another explanation for the variation in the self-efficacy level.

Table 2. Analysis of Variance of Language.

Dependent Variable	Sum of Squares	Mean Square	F	Significance Level
Self-Efficacy	13.644	4.548	9.286	0.000
Fear of Failure	2.117	0.706	1.587	0.193
Foreign Language Performance	17.048	5.683	1.389	0.247

In the analysis of the survey questions regarding the impact of effort on academic performance, the significance levels of all three variables are less than 0.05, indicating that attitudes towards effort can influence the variations in these three variables. In multiple comparisons, the researchers observe that students who tend to believe in the positive effect of effort on FL performance have a lower perception of self-efficacy compared to those who tend to disbelieve. However, at the same time, students who believe in the positive impact of effort experience lower levels of fear of failure and achieve higher grades.

In the analysis concerning students' thoughts about fear of failure and learning interest, the significance level for fear of failure and FL performance are both 0.000, suggesting that perspectives on whether fear of failure impacts learning interest influence the variations in fear of failure and FL performance. In multiple comparisons, it is revealed that students who believe that learning interest is not affected by fear of failure have lower levels of fear of failure than those who chose other options. Additionally, their FL performance is higher than those of students who believe that fear of failure affects learning interest.

The results presented by the difference analysis imply that the mechanisms through which self-efficacy and fear of failure impact FL performance may also involve other factors, such as learning interest or beliefs in the effect of effort.

3.3. Linear Regression Analysis

To explore the relation between self-efficacy and foreign language performance, the researchers conduct a linear regression analysis, which sets the foreign language performance as the dependent variable and sets the self-efficacy results as the independent variable.

According to Table 3, the significance level between self-efficacy and FL performance is 0.005, showing that the level of significance between self-efficacy and FL performance reaches a significant level. Also, the adjusted R square is 0.026, representing that when there is a change in the FL performance, 2.6% of that change can be attributed to self-efficacy.

In the first regression equation $Y=cX+e^1$, the constant e^1 is 5.654, and c (beta) is 0.171, which indicates a weak effect of self-efficacy on FL performance.

As a result, the linear regression model is established, self-efficacy is proved to have an impact on foreign language performance, and the equation is $Y=0.171X+5.654$.

Table 3. Self-Efficacy and Foreign Language (FL) Performance.

Dependent Variable	Independent Variable	Adjusted R square	Standardized Coefficients Beta	T	Significance Level	Unstandardized Coefficients Beta
FL performance	Self-Efficacy	0.026	0.171	2.832	0.005	
	(constant)					5.654

To further examine the relation between self-efficacy and fear of failure, the researchers then conduct a linear regression analysis, setting fear of failure as the dependent variable and self-efficacy as the independent variable. Based on the mediation model, the second equation to prove the mediating effect is $M=aX+e2$.

According to Table 4, the significance level between self-efficacy and fear of failure is 0.225, showing that the level of significance between self-efficacy and fear of failure does not reach a noteworthy level.

Since the regression does not support that self-efficacy impact fear of failure significantly, the coefficient a in the second equation $M=aX+e2$ is proved to be not significant statistically, which indicates that the indirect effect is also not significant.

Table 4. Self-Efficacy and Fear of Failure.

Dependent Variable	Independent Variable	Adjusted R square	Standardized Coefficients Beta	T	Significance Level	Unstandardized Coefficients Beta
Fear of Failure	Self-Efficacy	0.002	-0.074	-1.215	0.225	
	(constant)					2.933

To study the dynamic between fear of failure and foreign language performance, researchers conduct a linear regression between them to see if fear of failure can impact FL performance. According to Table 5, the significance level between fear of failure and FL performance is 0.000, showing that the level of significance reaches a significant level and the linear regression has a statistical significance.

In the regression equation $Y=bX+a$, the coefficient b is -0.382, which means there is a weak effect of fear of failure on FL performance, and the constant a is 10.016. Hence, the regression equation of fear of failure impacting FL performance is $Y=-0.382X+10.016$.

Table 5. Fear of Failure and Foreign Language (FL) Performance.

Dependent Variable	Independent Variable	Adjusted R square	Standardized Coefficients Beta	T	Significance Level	Unstandardized Coefficients Beta
FL performance	Fear of Failure	0.143	-0.382	-6.749	0.000	
	(constant)					10.016

Based on the results above, researchers assume that self-efficacy and fear of failure are a set of mutually independent psychological factors that influence high school students' foreign language performance. To test this hypothesis, the researchers conduct a multiple regression analysis on self-efficacy, fear of failure, and FL performance.

From Table 6, it can be observed that the VIF (Variance Inflation Factor) is 1.006, suggesting the absence of multicollinearity between self-efficacy and fear of failure, meaning that these two variables are independent of each other. The adjusted R square is 0.16, indicating that when there is a change in FL performance, 16% of that change can be attributed to variations in the two variables.

Meanwhile, the significance level of self-efficacy is 0.011, and the significance level of fear of failure is 0.000, showing that the multiple linear regression is proven valid, and both variables influence FL performance.

In the multiple regression equation Y=b1X1+b2X2+a, the coefficient of self-efficacy (b1) is 0.143, and the coefficient of fear of failure (b2) is -0.372, indicating a positive and weak impact of self-efficacy on FL performance, and a negative and weak effect of fear of failure on FL performance. The constant (a) is 8.958, showing that the whole equation is Y=0.143X1-0.372X2+8.958. This further confirms the hypothesis that self-efficacy and fear of failure are a set of independent factors that influence high school students' foreign language performance. This set of factors can be seen as psychological indicators of students' perceptions of the academic curriculum and the two components of the indicators independently influence FL performance.

Table 6. Multiple Linear Regression.

Dependent Variable	Independent Variable	Adjusted R square	Standardized Coefficients Beta	T	Significance Level	VIF	Unstandardized Coefficients Beta
FL performance	Self-Efficacy	0.160	0.143	2.551	0.011	1.006	
	Fear of Failure		-0.372	-6.610	0.000	1.006	
	(constant)						8.958

4. Discussion

4.1. Shaping Educational Environments to Mitigate Fear of Failure

The survey data provides critical insights into self-efficacy, its relationship to academic performance, and fear of failure amongst high school students. One of the noteworthy statistical observations that emerged in the research is the impact of grade level and the type of foreign language on these elements. Specifically, Grade 12 students and students studying Japanese manifested a higher self-efficacy level, verifying that self-efficacy, as proposed by Bandura, varies across different situations and between individuals [12].

This variation may be attributed to different psychological factors, such as personality types, learning methods, teacher-student interactions, and assessment styles amongst others. It raises a profound question – how could we, as educators and educational architects, govern these dynamics to our advantage? Can we harness these lessons to craft ecosystems that reduce fear of failure and promote the growth of self-efficacy?

The solution emerges through seminal works by Dweck and Conroy et al., proposing an intriguing conception where our perception of failure could be molded [13, 14]. Instead of viewing failure as a damning verdict, they argue that it is often a stepping stone towards growth and development, an enriching process that illuminates the path to success.

Adopting such a mindset can be a game-changer in mitigating the apprehensions related to failure and enhancing self-efficacy. In fact, when this shift in focus moves from performance to mastery in an educational setting, the resulting 'mastery-oriented' climate can nudge students to engage with learning more profoundly. Educational policies must emphasize the importance of this pivot in approach and teaching techniques.

Translating this perspective into the practical realm, teachers can create proactive learning environments where errors are not only expected but embraced as part of the cyclical learning process. Mistakes can hence become constructive opportunities for exploration, development, furthering knowledge, and refining skills.

4.2. Developing Instructional Strategies to Catalyze Self-Efficacy

The data denotes two essential factors in driving self-efficacy amongst students: diligence and interest in learning. Those students who are more diligent in believing that working hard can improve their foreign language skills had significantly higher self-efficacy levels. On the contrary, those who hold a genuine interest in learning, independent of the academic outcomes, exhibit a lower fear of failure.

This correlation can fit in Hattie's viewpoints on how certain teaching strategies can heighten a student's academic self-efficacy [15]. To extract the most from this insight, educators can use these findings to tailor their teaching styles to align with the unique psychological patterns, learning needs, and motivations of their students. They can look forward to cultivating a learning environment where students' strengths and potential can be full-heartedly exploited.

One way to put this into practice is by creating tasks that are challenging yet achievable and related to real-world applications. Additionally, Teachers can also help their pupils create SMART (specific, measurable, achievable, relevant, and time-bound) goals. Besides, the provision of prompt, precise, and constructive feedback is essential. This feedback on learning tasks and students' performance can serve as a roadmap for corrections, adjustments, and the assurance of progress, enhancing their self-belief and resilience.

Educators also have a responsibility to nurture the intrinsic motivations of students. The general interest in learning, without a fear of failure, constitutes an environment conducive to personal and cognitive growth. This combination encourages active participation, stimulates the pursuit of knowledge, and creates a learning habit that reinforces self-belief and academic self-efficacy.

4.3. Leveraging Psychological Dynamics for Holistic Educational Growth

The data of this paper has established the correlation between the psychological indicators of students' perceptions of the academic curriculum and foreign language performance, which indicates the significance of these elements. This strong supplementation supports the initial hypothesis and provides a deeper understanding of the psycho-emotional dynamics inside classrooms.

With this information, it becomes imperative for education policies to recognize these psychological factors. Rather than focusing solely on delivering a robust curriculum, there are broader dimensions to consider in the educational milieu, specifically addressing student self-efficacy and the fear of failure. In particular, learning environments that foster empowerment, resilience, and the management of learning anxiety should be prioritized.

In essence, the more fortified a student is against the fear of failure, the more free-flowing their academic journey becomes. As educators, creating a learning culture that inspires students to engage with their academic challenges actively is paramount. The more imbued the learners are with a sense of capability and resilience, the more enriched their educational pursuit becomes. This emphasis is

not only impactful in terms of their foreign language acquisition and overall academic performance, but it also shapes their psychological schema to value growth and resilience over the fear of failure.

This holistic view echoes the work of Bandura, Dweck, Conroy et al., and Hattie, who all underscore the importance of psychological understanding in education [12-15]. With this sturdy foundation, we can transform both the delivery and consumption of education, providing an environment that inspires and supports students in achieving their fullest potential.

Collectively, our findings and the research narrative presented through other studies bestow us with an enriched perspective of education. They highlight the significance of the psychological environment and intrapersonal beliefs in the success of learning processes, pushing the conventional boundaries of educational best practices. The need to nourish self-efficacy, reduce the fear of failure, and create supportive psychological learning environments is brought to the forefront.

Our findings emphasize the need to consistently address these psychological factors in education policies instead of merely focusing on curriculum delivery. The results indicate that psychological indicators of students' perceptions of the academic curriculum have an effect on academic performance. Given the crucial role that it plays in academic success, which is why educational systems should prioritize creating environments that foster high self-efficacy levels and manage the fear of failure among students, supplementing this with the provision of academic assistance.

By concentrating on building self-belief and resilience in students, they would be better equipped to navigate academic challenges effectively. This behavior-oriented approach would enhance not only language skills but also shape the psychological landscape of students to value growth over fear of failure.

Although the absence of multicollinearity between the psychological indicators of students' perceptions of the academic curriculum, the two factors each have an impact on academic performance. This study support on the research on students' perceptions of the academic curriculum in the future and provides a more wholesome perception of educational practices. As pursued by Bandura, Dweck, Conroy et al., and Hattie, understanding the psychological aspects of students will transform how education is delivered and consumed, inspiring students to flourish academically [12, 13, 14, 15].

5. Conclusion

This paper does not detect a significant mediating effect of fear of failure between self-efficacy and foreign language performance of high school students, but there is a positive impact of students' self-efficacy on FL performance, while pupils' FL performance is negatively affected by their fear of failure. Researchers treat the two variables as psychological indicators of students' perceptions of the academic curriculum, which can influence students' foreign language performance. On the other hand, this study finds that the self-efficacy sensed by G12 students is significantly higher than that of G11 students, which might be because more tests and higher knowledge levels make students have a higher sense of self-efficacy. The same trend emerges among Japanese students, with high school students who studied Japanese being more likely to perceive higher self-efficacy than students who studied English or German. This result may be related to the different exam content of different foreign languages, and some schools use daily scores instead of large-scale examinations to measure Japanese scores. These could be potential reasons, but the specific reasons need to be studied and explained. In addition, students who believe that "effort can make a change" or "fear of failure does not affect learning interest" will perceive less fear of failure and gain higher grades, which shows the importance of believing in effort and interest in learning, and also reveals the mechanisms of self-efficacy and fear of failure influencing academic performance.

This article provides empirical research findings for the investigation of self-efficacy, fear of failure, and foreign language learning, thereby contributing to a broader discussion of foreign language performance beyond English learning. The outcomes of this study align with the conclusions of certain previous literature, however, the result of the relationship between the two

variables shows a lack of significant correlation, suggesting that further study is required to investigate the relationship between the two notions.

Nonetheless, there are still some limitations in this research. The research of this paper mainly focuses on high school students in mainland China and mainly studies students who study English, Japanese, and German. Consequently, the research results of this paper may not be applicable to students from other countries or students who study other languages. Additionally, the study of academic performance in other subjects may also show different outcomes from those presented in this paper. Moreover, the sample size of G12 students in this study is nearly three times larger than that of G10 students, which may lead to poor representativeness of the findings among G10 students.

Finally, this study suggests that future researchers can start with the mediator variables of self-efficacy and look for more possible mediator variables to further determine the mechanism by which self-efficacy affects students' academic achievement or performance. Similarly, this paper found that learning interest may play a mediating role in how fear of failure affects students' academic performance, and the connection between fears of failure and learning interest is also worth studying. On the other hand, this study provides a reference for teachers' teaching strategies, and future researchers can conduct more in-depth research on teaching policies about the psychological indicators of students' perceptions of the academic curriculum.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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