
RESEARCH ARTICLE

English Learning Self-Efficacy and Academic Performance: A Correlational Study on Chinese High School EFL Students

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ABSTRACT

In the context of curriculum reform in China prioritizing student-centered teaching, this study investigated the relationship between English learning self-efficacy and English proficiency among 30 senior high school students in Chengdu, China by employing an English learning self-efficacy questionnaire, an overall language proficiency test and a structured interview. The findings indicated that 1) the overall level of English learning self-efficacy among these students was moderate, with the highest in competence to face setbacks and the lowest in competence to complete tasks; 2) there was a strong positive correlation between the four dimensions of English learning self-efficacy and their English proficiency; 3) confidence in achieving goals emerged as the key dimension of self-efficacy directly predicting English proficiency, encapsulating the shared variance of the broader self-efficacy construct in this context. These findings suggested that the four English learning self-efficacy dimensions operate as an integrated, hierarchical system driven by a core factor.

KEYWORDS

English Learning Self-efficacy; English Proficiency; Correlation Analysis; Regression Analysis

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1. Introduction

Bandura (2001) conceptualizes self-efficacy as a motivational orientation that stimulates perseverance in the face of difficulties, enhances deliberate actions, encourages a long-term perspective, fosters self-regulation, and facilitates self-correction when necessary. This concept has provided a theoretical underpinning for numerous educational studies. Specifically, self-efficacy in the context of English learning has been shown to significantly influence students' English learning outcomes (Bouffard, 1991). Zhang & Yuan (2004) further delineate self-efficacy in English learning into four dimensions: competence to complete tasks, confidence in achieving goals, competence to face setbacks, and competence to overcome difficulties. With the added pressure of preparing for college entrance exams in China, it is essential to cultivate students' self-efficacy. Therefore, this study aims to assess the overall profile of English learning self-efficacy among senior high school students and to explore the relationship between the four dimensions of self-efficacy and English proficiency through a questionnaire survey, language proficiency tests, and structured interviews.

2. Literature Review

Self-efficacy has retained its attraction to researchers since 1950s. Bouffard (1991) argued that self-efficacy is a vital factor in language learning, influencing self-regulation, motivation, and learning outcomes. In line with Bouffard, Muelas & Navarro (2014) suggested that self-efficacy and learning strategies significantly influence language-related academic achievement. Yaman (2015) also found that students with higher self-efficacy tend to adopt a proactive approach to academic performance and vice versa. Villafa et al. (2016) also confirmed a positive relationship between self-efficacy and academic scores among senior high school students. Later studies basically support such a claim (e.g., Zheng et al., 2017; Teng et al., 2021).

In China, serious attention began to be given to self-efficacy, English proficiency and learning strategies in the 1990s. Hu Guiying & Xu Baihua (2002) found that cognitive strategies directly influence academic scores. Liu Yanju (2010) noted a significant positive correlation between self-efficacy and the use of English learning strategies. Xu jinfen (2024) revealed that there was a strongly significant positive correlation between grammar learning strategies and students' overall proficiency. On the other hand, Zhang & Yuan (2004) claimed that there was a positive correlation between English learning self-efficacy and English proficiency. Similar findings have also been reported in a wide range of studies (e.g., Zhang & Yu, 2010; Cui & Meng, 2022; He, 2024).

Overall, given the insufficiency of specific studies on the relationship between the dimensions of self-efficacy and English proficiency within the Chinese educational context, this study aims to figure out this relationship by a combination of both qualitative and quantitative methods. Here are the three research questions of this study:

- (1) What is the overall profile of the English learning self-efficacy of senior high school students?
- (2) How does English learning self-efficacy correlate with English proficiency?
- (3) What are the relationships among the four dimensions of English learning self-efficacy and English proficiency?

3. Methodology

3.1 Research Participants

The participants were 30 third-year senior high school students, consisting of 12 boys and 18 girls, from the same class in a national-level key high school in Chengdu, China. A total of 30 questionnaires were distributed, with a 100% response rate and all were deemed valid.

3.2 Research Instruments

Research instruments of this study include: 1) a questionnaire on English learning self-efficacy, 2) a language proficiency test and 3) a structured interview.

- (1) The questionnaire on English learning self-efficacy

The questionnaire used to assess English learning self-efficacy among senior high school students in this study is adapted from Zhang Shufen and Yu Wendu's (2010) survey. The questionnaire employs a Likert scale, with responses ranging from "completely true for me" to "completely untrue for me", scoring from 5 to 1. It is divided into four dimensions aligned with the four dimensions of English learning self-efficacy, encompassing a total of 22 questions. The four dimensions and corresponding items are detailed in Table 1.

Table 1 Dimensions and Items of the Questionnaire

Dimensions	Items
Competence to complete tasks	1,4,5,10,11,13,15,17
Confidence in achieving goals	2,6,8,16,19,22
Competence to face setbacks	9,12,21
Competence to overcome difficulties	3,7,14,18,20

The questionnaire's reliability was evaluated using Cronbach's alpha by SPSS 26.0. As detailed in Table 2, all four dimensions exhibited Cronbach's alpha values exceeding 0.80, indicating high reliability. The overall scale achieved a Cronbach's alpha of 0.984, reflecting exceptional reliability.

Table 2 The Reliability Statistics of the Questionnaire on English Learning Self-efficacy

Dimension	Cronbach's alpha	N of items
Competence to complete tasks	0.973	8
Confidence in achieving goals	0.930	6
Competence to face setbacks	0.902	3
Competence to overcome difficulties	0.920	5
The overall scale	0.984	22

For validity assessment, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were employed. The KMO value was 0.846, $p < 0.001$, suggesting statistical significance, a strong correlation among variables as well as suitability for factor analysis as shown in Table 3.

Table 3 The KMO and Bartlett's Test of the Questionnaire on English Learning self-efficacy

KMO Measure of Sampling Adequacy		.846
Bartlett's Test of Sphericity	Approx. Chi-Square	956.989
	df.	231
	Sig.	.000

(2) Language proficiency test

The language proficiency level is determined based on the *Chengdu Senior High School Diagnostic Test*, administered to students in March and May 2024. The average score from these two tests serves as the evaluative measure. Recognized as one of the most comprehensive and authoritative assessments, those tests were esteemed for their high reliability and validity in assessing the overall academic level of senior high school students.

(3) Structured interview

To complement the data, the researcher randomly selected three volunteers, triangulating with the questionnaire results (Xu, 2024). The interview addressed three questions: (1) Do you feel a sense of accomplishment when applying your English knowledge in daily life? (2) Do you typically initiate communication with foreign teachers? (3) How do you address the challenging parts when learning English?

3.3 Data Analysis

The quantitative data were gathered via a paper-based questionnaire. To ensure high internal validity and eliminate linguistic ambiguity, the questionnaire was administered entirely in Chinese. Following receipt of formal consent from the collaborating school, the questionnaires were distributed to students in their regular classroom settings with the assistance of their teachers. Standardized instructions were read aloud, and participants were allotted 10 minutes to complete the survey. This controlled approach helped maximize the response rate and ensure data quality. Upon collection, the researcher meticulously and manually transcribed all raw data from the physical paper questionnaires into SPSS 26.0 for subsequent statistical analysis.

For the statistical analysis, initially, descriptive statistical analysis was carried out to assess the overall self-efficacy of senior high school students. Subsequently, normality tests were conducted on both self-efficacy and English test scores, confirming that both variables were normally distributed and exhibited a linear relationship, thereby meeting the assumptions for correlation analysis. Pearson's correlation analysis was then employed to examine the relationship between English learning self-efficacy and overall language proficiency. Finally, regression analysis was conducted to further explore this relationship.

4. Results and Discussions

This section addresses the three research questions through data analysis. Research results and discussions are presented.

4.1 Overall Profile of Senior High School Students' English Learning Self-efficacy

According to the 5-point Likert scale survey standards proposed by Oxford and Burry-Stock (1992), mean scores ranging from 1.0 to 2.4 indicate a low level; mean scores from 2.5 to 3.4 suggest an intermediate level; mean scores between 3.5 and 5.0 indicate a high level. Descriptive Statistics of English learning self-efficacy are presented in Table 4.

Table 4 Descriptive Statistics of English Learning Self-efficacy

N	Minimum	Maximum	Mean	Standard deviation	Variance
30	2.18	4.91	3.96	0.89	.80

The mean score is 3.96, indicating a moderate level of self-efficacy. The minimum score is 2.18, suggesting that some students experience lower self-efficacy in English learning. Detailed statistics for each dimension are provided in Table 5.

Table 5 Descriptive Statistics of the Four Dimensions of English Learning Self-efficacy

	N	Mini.	Max.	Mean	Std. deviation	Variance
Competence to complete tasks	30	1.75	5.00	3.66	1.08	1.18
Confidence in achieving goals	30	2.50	5.00	3.95	0.92	0.84
Competence to face setbacks	30	2.33	5.00	4.00	0.87	0.76
Competence to overcome difficulties	30	2.00	5.00	3.95	0.92	0.84

The dimension “competence to face setbacks” has the highest mean score of 4.00 with a standard deviation of 0.87, indicating that students generally possess sufficient confidence to overcome setbacks, with minimal variation in responses. As one interviewee expressed, “even though I didn’t do well on the exam, I still believe I can achieve a satisfying score”. “Confidence in achieving goals” and “competence to overcome difficulties” both have mean scores of 3.95, suggesting that most students are confident in their ability to achieve goals and address challenges. The “competence to complete tasks” has the lowest mean score of 3.66 and a relatively high standard deviation of 1.08, indicating variability in students’ confidence levels regarding task completion.

These conclusions slightly differ from He’s (2024) research. He found that students had high self-efficacy, highest in “confidence in achieving goals” and the lowest in “competence to complete tasks”. In contrast, this study found moderate self-efficacy level among senior high school students, with the highest in “competence to face setbacks” and the lowest consistent with He’s results. The observed divergence may be primarily attributed to differences in educational background. In contrast, the previous study investigated eighth-grade students, the present research focused on senior students, who typically experience greater academic pressure, potentially resulting in lower overall self-efficacy. Nevertheless, interview data revealed that their school regularly provides psychological stress-relief counseling, which may have contributed to the relatively higher scores observed in competence to face setbacks.

Overall, the results suggest that high school students’ English learning self-efficacy is moderate, with the most notable deficiency in the dimension of task completion. These findings highlight that some students may struggle with effective problem-solving and teacher interaction. Given the academic pressures of the test-based education system, it is important for educators to consider fostering students’ problem-solving ability (Xu, 2024). In sum, teachers can strengthen learners’ confidence in completing tasks by scaffolding learning activities, providing constructive feedback, creating a supportive classroom environment, and designing authentic, goal-oriented tasks. These pedagogical practices can collectively enhance students’ perceived competence and task-specific self-efficacy in second language learning.

4.2 Correlation Analysis

In this section, Pearson’s correlation analysis was carried out to examine the relationship between English learning self-efficacy and English proficiency. Generally, the absolute value of a correlation coefficient $r > 0.7$ indicates a strong correlation, while the absolute value $r < 0.3$ suggests a weak correlation (Jia, 2018). The results are presented in Table 6.

Table 6 Pearson Correlation Analysis Between English Learning Self-efficacy and Test Scores

	CT	AG	OD	FS	S
CT	1				
AG	.940**	1			
OD	.936**	.921**	1		
FS	.949**	.902**	.904**	1	
P	.926**	.927**	.870**	.899**	1

** . The correlation is significant at the 0.01 level (two-tailed)

Note: CT= Competence to complete tasks

AG= Confidence in achieving goals

OD= Competence to overcome difficulties

FS= Competence to face setbacks

P= Proficiency

According to Table 6, the results indicate a strong positive correlation between English proficiency and all four dimensions, with all being statistically significant at the 0.01 level.

The findings show that among the four sub-dimensions, confidence in achieving goals ($r = .927, n = 30, p < .01$) and competence to complete tasks ($r = .926, n = 30, p < .01$) exhibit the strongest positive correlations with language proficiency. The correlation coefficients of these two dimensions indicate a significant contribution to English proficiency. According to Bandura’s (1997) social cognitive theory, self-efficacy, defined as an individual’s confidence in their task-completing ability, directly impacts learning behaviors and outcomes. In language learning, students who have confidence to achieve their goals tend to engage more actively in learning activities, which enhances their language proficiency. Next is competence to face setbacks ($r = .899, n = 30, p < .01$) and competence to overcome difficulties ($r = .870, n = 30, p < .01$). Competence to overcome difficulties exhibited the weakest correlation with language proficiency among the dimensions studied. Despite this, it is still significantly related to students’ language proficiency. Based on the cognitive load theory (Feldon et al., 2019), learners may experience excessive cognitive load

when faced with complex language learning tasks, which can negatively impact learning outcomes. This suggests that learners' resilience in the face of setbacks and their confidence in overcoming difficulties are crucial for their English proficiency.

Overall, these findings align with many of the prior research (e.g., Zhang & Yuan, 2004; Zhang & Yu, 2010; Muelas & Navarro, 2014; Villafa et al., 2016; Zheng et al., 2017; Teng et al., 2021; Cui & Meng, 2022), confirming that English learning self-efficacy is positively and significantly related to English proficiency. Higher self-efficacy not only boosts students' confidence and enthusiasm but also strengthens their motivation to engage actively in learning, further enhancing their performance.

4.3 Regression Analysis

Regression analysis was carried out to further explore the relationship between the four dimensions of English learning self-efficacy and English proficiency. The independent variables are: competence to complete tasks, confidence in achieving goals, competence to overcome difficulties and competence to face setbacks; the dependent variable is English proficiency.

F test was carried out first and the results ($F=50.898$, $P<0.01$) suggest that the model passed the *F* test, that is to say, the independent variables jointly, or at least one variable, have a significant impact on the dependent variable.

Following that, the regression analysis was made. Results presented in Table 7 show that $R=0.944$, $R^2=0.891$ and the adjusted R^2 is 0.873, indicating that 87.3% of the changes in English Proficiency can be explained.

Table 7 Model Summary of the Regression Analysis between English Learning Self-efficacy and Proficiency

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.944 ^a	.891	.873	3.8334

Results above show that the overall regression model was highly significant ($F=50.898$, $P<0.01$), accounting for a remarkably high proportion of the variance in English test scores. This demonstrates that, collectively, the four dimensions of self-efficacy are extremely powerful predictors of English proficiency.

Finally, regression coefficients were calculated to quantify the potential relationship among them. The results are presented in Table 8.

Table 8 Regression Coefficients of the Regression Analysis between English Learning Self-efficacy and Proficiency

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	80.238	6.892		11.642	.000
CT	4.089	2.834	.412	1.443	.161
AG	7.946	3.053	.539	2.603	.015
OD	2.050	2.362	-.175	-.868	.394
FS	2.224	2.630	.180	0.845	.406

Upon examining the individual predictors, only confidence in achieving goals ($p<0.05$) is statistically significant and can be explained as the independent variable influencing the dependent variable, English proficiency, confirming it as a critical driver of English proficiency. The B value is 7.946, which means that for each unit increase in confidence in achieving goals, English proficiency scores increase by 7.946 points, holding other variables constant. Beta value is 0.539 which is the strongest predictor among the four dimensions, explaining the largest proportion of variance in proficiency. Drawing on Bandura's (1997) theory of self-efficacy, an individual's belief in their ability to successfully perform specific tasks is a key factor that influences their behavior and motivation. In language learning, if students believe they can achieve their learning goals, they are more likely to actively engage in learning activities, thereby enhancing their language proficiency.

The other three dimensions ($p>.05$), however, failed to demonstrate a unique, statistically significant contribution to the prediction of English proficiency when simultaneously controlling for the influence of the other three variables.

The noticeable disparity between the significant findings in the correlation analysis and the non-significant findings for three dimensions in the regression analysis suggests the existence of collinearity issues among the self-efficacy dimensions. As the four dimensions are theoretically components of the same superordinate construct—English Learning Self-efficacy—they are expected to be highly inter-correlated. In the multiple regression model, this high inter-correlation resulted in a high degree of shared

variance. This phenomenon inflated the standard errors of the regression coefficients, making it statistically challenging for the model to isolate the unique predictive contribution of each component. Consequently, variables like CT, OD, and FS, whose explanatory power largely overlaps with the dominant factor, AG, were statistically suppressed below the threshold of significance. The high overall $R^2=0.891$ serves as strong evidence that the combined efficacy components are indeed highly influential. Specifically, Confidence in achieving goals—for instance, a student's belief in setting clear English learning objectives—serves as a central hub or a carrier of shared variance. Other dimensions, competence to complete tasks, competence to face setbacks, and competence to overcome difficulties, are likely to influence English proficiency largely through their impact on, or reflection in, this core dimension of confidence in achieving goals.

This suggests that English learning self-efficacy may not be a simple, additive composition of several discrete, equally weighted components, but rather an integrated construct driven by a core mechanism. Findings indicate that confidence in achieving goals likely serves as this central impetus within the self-efficacy structure.

5. Conclusions

This study examined the English learning self-efficacy of 30 senior high school students in Chengdu, China, and its relationship with their English proficiency. The findings revealed that (1) students' overall self-efficacy was at a moderate level; (2) all four dimensions of self-efficacy were significantly correlated with English proficiency ($r = 0.870-0.927$, $p < 0.01$); and (3) English learning self-efficacy functions as an integrated and hierarchical construct, with confidence in achieving goals emerging as the sole statistically significant predictor of English proficiency in the regression model.

These results underscore the crucial role of self-efficacy as a multidimensional yet interrelated system that collectively contributes to academic performance. In particular, confidence in achieving goals appears to serve as the central mechanism through which other dimensions—competence to complete tasks, competence to face setbacks, and competence to overcome difficulties—exert their influence. Pedagogically, this highlights the importance of fostering students' goal-oriented confidence through achievable learning objectives, constructive feedback, and supportive classroom environments, as such practices can enhance learners' motivation, self-esteem, and ultimately, academic outcomes (Judge et al., 2007).

Although the model demonstrated strong predictive power ($R^2 = 0.891$), the non-significance of the other dimensions may result from multicollinearity, suggesting a hierarchical structure centered on confidence in achieving goals as the core driver. Future research could further validate this goal achieving-centered mediation pathway or higher-order factor model through advanced statistical approaches, such as Structural Equation Modeling (SEM), and with a larger and more diverse sample to enhance generalizability.

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