Self-Efficacy in Core Linguistic Competencies of English Majors

—An Empirical Analysis at Zhejiang Wanli University

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Abstract: This study examines self-efficacy levels among English majors at Zhejiang Wanli University across essential language skills using Bandura's self-efficacy theory. The research identifies key elements influencing self-efficacy and their relationship with specific language abilities and overall self-efficacy. By surveying 121 English majors through random sampling, four interconnected elements related to linguistic skills were identified. The results reveal a strong positive correlation between these competencies and overall self-efficacy, highlighting the importance of balanced language skill development. The findings stress the need for educational strategies that enhance confidence and proficiency in English acquisition by focusing on the comprehensive development of listening, speaking, reading, and writing skills. This comprehensive approach can significantly contribute to the overall academic performance and language proficiency of English majors, providing insights for educators to tailor their teaching methods effectively.

Keywords: self-efficacy, linguistic competencies, English majors, academic performance

1. Introduction

Initially conceived by Bandura, self-efficacy is based on individuals' trust in performing actions vital for achieving specific performance objectives. This idea profoundly influences educational psychology, shedding light on how students navigate educational obstacles. It transcends mere skill assessment and embodies the importance of skill usage in shaping motivation, resilience, and strategic choices towards achieving goals [1]. In educational settings, substantial influences of self-confidence on educational achievements, the shaping of student task strategies, resilience in overcoming academic challenges, and general success are observed [2]. Contemporary studies, including those by Nguyen et al., have discovered a beneficial link between self-assurance and linguistic learning results, underscoring self-efficacy's facilitative role in linguistic research [3].

While acknowledging its significance, there's still a void in the academic writings about the self-efficacy of English majors in their varied curriculum. Broad studies, including Wood and Locke's research, have delved into the link between self-efficacy and academic achievement, yet they haven't explicitly concentrated on English majors or the effect of self-efficacy on varied language

abilities [4]. Consequently, studies are essential to explore how self-efficacy impacts the listening, speaking, reading, and writing skills of students majoring in English.

Aiming to bridge this divide, the current research focused on delving into the subtleties of self-belief in English majors, particularly their expression in fundamental language skills and their association with their academic achievements. The investigation focused on these research inquiries:

1.   What elements constitute the fundamental constituents of self-efficacy in the essential linguistic skills?

2.   How does each element correlate with the aggregate of the others?

2.   Literature review

Despite growing evidence of self-efficacy's significance in language learning, studies often overlook its impact on the four essential language skills: listening, speaking, reading, and writing. This gap in research is particularly evident among English majors. Current studies offer insights into individual language abilities but lack comprehensive exploration of self-efficacy's broader effects. Strong self-confidence in listening improves performance in comprehension tests and active participation in tasks [5]. Similarly, confidence in speaking encourages engagement and advanced language use [6]. In reading, higher confidence levels promote deep interaction with texts and flexible reading approaches [1, 2]. Regarding writing, self-confidence enhances persistence and goal-setting, positively impacting performance [7].

Understanding the elements contributing to self-efficacy in these skills is crucial for English majors. It helps elucidate how these skills collectively shape students' confidence and academic performance. Addressing these nuances can inform educational strategies, improve teaching methods, and enhance student engagement. Tailoring assistance to individual linguistic skill development can universally boost confidence and proficiency in basic language abilities.

3.   Methodology

3.1.   Sampling

The study selected 121 students majoring in English at random from ZWU to form its sample. Utilizing this random sampling technique ensures every student gets an identical chance to make choices, thus enhancing the representativeness and relevance of the results. Boasting 121 samples, the research achieves a balanced balance of depth and functionality, guaranteeing comprehensive analysis while managing the collection of data. Survey participants shared their answers by sharing them on WeChat through a tool called "Wenjuanxing".

3.2.   Selection of questionnaire Items

The survey designed for this research aimed to assess the self-assurance of English learners at Zhejiang Wanli University. It integrated established metrics from Bandura's self-efficacy theory and Pajares' academic self-efficacy scales, ensuring reliability and accuracy. Forty questions, categorized into listening, speaking, reading, and writing, were adapted from seminal studies by Wang, Kim, Su, Istanto, and Unveren. After refinement, 22 items were distributed across linguistic domains, measured on a 7-point Likert scale for enhanced comparability and reliability, providing a nuanced evaluation of self-efficacy levels [6, 8, 9].

3.3.   Analysis of Reliability and Validity

The reliability and validity of the questionnaire were tested via IBM SPSS Statistics 27 and IBM SPSS Amos 28 Graphics.

3.3.1. Reliability

As shown in Table 1. Reliability analysis was used to test the correlations among the questionnaire items, that is, to find out whether or not each individual item was related to all the other items. The α value of the questionnaire is 0.973, significantly greater than 0.7, indicating that the correlation between each individual item with all the rest is strong and, consequently, the reliability of the questionnaire is significant.

Table 1: Cronbach reliability analysis

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.973	.974	22

3.3.2. Validity Analysis

Descriptive analysis was conducted to measure the effectiveness and suitability of each individual questionnaire item, that is, to find out whether or not there were differences between or among them. To be more specific, item analysis was used to test the discrimination level of each item, that is, whether or not the questionnaire score correctly discriminates the individual items.

There are no outliers in the current data. All the 22 items were significantly positive ($P \leq 0.01$), indicating that all the 22 items were significantly differentiated and contributed to the overall questionnaire score reliability equally. Result indicates a highly significant result, providing strong support for the conclusions drawn from the analysis. Therefore, all the 22 items were retained to undertake further validity tests.

EFA, principal components analysis in particular, was used "to explore previously unknown groupings of variables, to seek underlying patterns, clustering and group" [10] on condition that they were "not highly correlated with each other". Or, to be more specific, EFA was used to identify which questionnaire items belong to which factor so as to confirm the suitability of them, that is, whether or not they were conceptually similar and significant. An Exploratory Factor Analysis (EFA) was conducted with a pre-set expectation of extracting four distinct factors. The appropriateness of conducting an EFA was first verified through the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. As depicted in Table 2: KMO and Bartlett's Test. The KMO value of 0.952 indicates excellent sampling adequacy, confirming that factor analysis is suitable for the dataset. Furthermore, Bartlett's Test of Sphericity yielded a significant chi-square value of 2812.513 (p < 0.001), demonstrating that correlations among variables are sufficient to conduct EFA.

Table 2: KMO and Bartlett's Test Table

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.952
Bartlett's Test of Sphericity	Approx. Chi-Square	2812.513
	df	231
	Sig.	.000

Principal Component Analysis (PCA) was used as the extraction method, specifying a fixed number of four factors to align with the hypothesized model. The cumulative variance explained by these four factors is 79.715%, indicating that a significant portion of the variability in the data is

captured by these factors. A Varimax rotation was applied to the factor matrix to simplify interpretation and highlight significant loadings on each factor. After six iterations, the rotated matrix converged, revealing the following structure: listen, speaking, reading, writing.

The communalities, indicative of the variance explained by these factors, varied between 0.674 and 0.883, showcasing that the acknowledged factors explained a significant portion of the variation in each individual item. The findings from this Emissions Factor Analysis validate four separate but interrelated factors contributing to fundamental English language abilities: writing, speaking, listening, and understanding of readers. This research offers a systematic insight into the linguistic skills evaluated in this investigation, and its outcomes can inform the creation of subsequent evaluations and strategies in fundamental language abilities training.

The execution of a Confirmatory Factor Analysis (CFA) was to corroborate the theoretical framework for essential language skills, characterized by four interconnected yet separate elements: listening, oral communication, reading, and writing. The objective of this study was to evaluate the model's congruence, dependability, and accuracy, considering the data gathered.

The analysis used a total of 121 samples, which does not meet the general requirement for CFA of at least five to ten times the number of variables, usually requiring a minimum of 200 samples. Despite this limitation, the analysis proceeded. The standardized factor loadings were used to assess the relationships between each variable and its associated factor. A factor loading greater than 0.7 and statistical significance ($p < 0.05$) were the benchmarks. All standardized loadings were above 0.7, and each item showed significant relationships with its latent variable.

To assess convergent validity, the Average Variance Extracted (AVE) and Composite Reliability (CR) were examined. The AVE values for all four constructs were above 0.5, ranging from 0.692 to 0.798, indicating good convergent validity. The CR values for all constructs exceeded 0.7, ranging from 0.931 to 0.952, indicating high internal consistency and reliability. Discriminant validity was evaluated using the Pearson correlation matrix and AVE square root values. The square roots of AVE values for all four factors were higher than the correlations between different factors, demonstrating adequate discriminant validity. The model fit indices were assessed to determine the overall fit of the theoretical model to the data. The Chi-Square to Degrees of Freedom Ratio (χ^2/df) was 1.849, indicating an acceptable fit. The GFI (Goodness-of-Fit Index) of 0.877 was slightly below the desired threshold of 0.9. The RMSEA (Root Mean Square Error of Approximation) of 0.084 was within the acceptable range of 0.05 to 0.10. The RMR (Root Mean Square Residual) of 0.067 indicated a good fit, and the CFI (Comparative Fit Index) of 0.939 was above the desired threshold of 0.9. The covariance analysis showed strong correlations between the constructs, with standardized coefficients ranging from 0.696 to 0.879, indicating a strong relationship between listening, speaking, reading, and writing.

4. Results and Discussion

Research Question 1: What are the primary factors comprising the construct of self-efficacy in core linguistic competencies?

The results from the Exploratory Factor Analysis (EFA) clearly identified four primary factors—listening, speaking, reading, and writing—that represent the construct of self-efficacy in English majors. These factors align well with existing literature on core linguistic competencies, validating their significance in this context. The factor loadings, presented below, illustrate how the items grouped under each factor.

High factor loadings (ranging from 0.723 to 0.931) indicate that each item effectively represents distinct skills within the factors. In the listening factor, items such as understanding English podcasts (loading 0.827) and English TV programs (loading 0.926) highlight the critical role of English majors' belief in their listening ability for their overall self-efficacy. The speaking factor

emphasizes confidence in verbal expression, with the highest loading item (0.901) involving answering teachers' questions in English. Other items, like discussing general topics (loading 0.851) and giving speeches (loading 0.723), underscore how self-efficacy in speaking depends on interactive and presentational abilities. The reading factor involves comprehending written materials, with the highest loading item (0.906) being the comprehension of English news. Guessing unknown words from context (loading 0.858) and understanding articles on traditional festivals (loading 0.861) demonstrate how self-efficacy in reading relates to students' strategic approach and cultural understanding. Lastly, the writing factor showcases confidence in constructing coherent and accurate texts, with items like writing essays (loading 0.912) and using accurate grammar (loading 0.892) highlighting the importance of structured and strategic writing practices.

Research Question 2: What is the correlation between each item and the total sum of the rest?

To evaluate the internal consistency of the questionnaire, Cronbach's Alpha was calculated, resulting in a high reliability score of 0.973. The inter-item correlation analysis further confirmed strong positive correlations between each item and the cumulative score.

The item-to-total correlations, ranging from 0.682 to 0.901, suggest that each item significantly contributes to measuring overall self-efficacy. For instance, a strong correlation of 0.895 between "Comprehending English news" and the reading score implies that students excelling in various reading tasks tend to perform well in news comprehension. Similarly, in speaking, strong associations of 0.839 and 0.874 with scores in "Asking teachers questions" and "Responding to teachers' questions" indicate that confidence in interacting with instructors boosts speaking self-assurance. Likewise, writing items show a strong link to the overall writing score, highlighting the influence of writing techniques and grammar on self-confidence. These associations underscore the interdependence and supportiveness among listening, speaking, reading, and writing skills. Enhanced self-identity in these competencies fosters greater self-trust among students, emphasizing the interconnected nature of linguistic abilities.

5. Conclusion

The research highlights that English students' self-confidence is structured around four essential verbal skills: hearing, speaking, reading, and writing. Every skill plays a major role in boosting comprehensive self-efficacy, highlighting the necessity of extensive skill enhancement in the study of English. There is a marked correlation between the singular elements and the collective framework, showcasing the interrelated consistency and interconnected character of these competencies.

The results imply that teachers ought to focus on balanced progression in each of the four language abilities and customize tactics to enhance students' self-belief in every domain. Crafting educational plans and support schemes that build trust in fundamental skills will eventually enhance students' academic achievements and participation in English courses.

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