

ARTICLE

Towards Lessening Learners' Aversive Emotions and Promoting Their Mental Health: Developing and Validating a Measurement of English Speaking Demotivation in the Chinese EFL Context

Chili Li¹, Xinxin Zhao², Ziwen Pan³, Ting Yi⁴ and Long Qian^{5,6,*}

¹School of Foreign Languages, Hubei University of Technology, Wuhan, 430068, China

²Faculty of Education, The University of Hong Kong, Hong Kong, 999077, China

³School of Foreign Languages, Henan University, Kaifeng, 450046, China

⁴Research Institute of International Chinese Language Education, Beijing Language and Culture University, Beijing, 100083, China

⁵Faculty of Humanities, The Hong Kong Polytechnic University, Hong Kong, 100872, China

⁶School of Humanities, Wuhan University of Engineering Science, Wuhan, 430200, China

*Corresponding Author: Long Qian. Email: long.qian@connect.polyu.hk

Received: 14 March 2023 Accepted: 03 May 2023 Published: 08 March 2024

ABSTRACT

While a plethora of studies has been conducted to explore demotivation and its impact on mental health in second language (L2) education, scanty research focuses on demotivation in L2 speaking learning. Particularly, little research explores the measures to quantify L2 speaking demotivation. The present two-phase study attempts to develop and validate an English Speaking Demotivation Scale (ESDS). To this end, an independent sample of 207 Chinese tertiary learners of English as a Foreign Language (EFL) participated in the development phase, and another group of 188 Chinese EFL learners was recruited for the validation of the scale. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were employed to determine the factor structure of the scale. The EFA results revealed a six-factor solution with *Teacher-related Factors in Learning Spoken English (TFLSE)*, *Interest and Valence in Learning Spoken English (IVLSE)*, *Self-efficacy in Learning Spoken English (SELSE)*, *Negative Peer Influence in Learning Spoken English (NPILSE)*, *Undesirable Environment for Learning Spoken English (UELSE)*, and *Negative Influence of Assessment and Learning Materials in speaking class (NIALM)*. In the validation phase, Confirmatory Factor Analysis (CFA) was performed to validate the internal structure of the scale. The CFA results showed that the model fits the data well. Overall, the ESDS is a robust and trustworthy psychometric tool that could be utilized to examine L2 speaking demotivation. Implications for diminishing EFL learners' demotivation, lessening their aversive emotions and promoting their mental health are also discussed.

KEYWORDS

Demotivation for learning English speaking; ESDS; scale development and validation; Chinese EFL learners; mental health



Introduction

Mental health problems have been recently reported to be prevalent among college students around the world [1–3]. As one of the critical factors leading to mental health, demotivation has also gained much scholarship in second language (L2) education. Demotivation was initially defined as the external discouraging forces that might lead to the reduction or diminishment of motivation of a behavioral intention or a happening action [4]. This definition focuses on the external demotivators but fails to take into account the internal forces. Accordingly, in addition to the external factors demotivation was then delimited as the potential decrease in motives for language learning resulted from internal factors such as lack of confidence, failure experiences, and ignorance of effective learning strategies [5]. It has been found that demotivation shall jeopardize the learning process, causing mental health problems such as anxiety, stress, and burnout [6], bringing about the reduction of resilience [7], and blocking the learners' pursuit of language proficiency [8], such as L2 writing competence [9]. However, a review of the literature shows that little research has been conducted to unpack demotivation in L2 speaking learning.

Key competences have been recently drawing tremendous attention from both researchers and practitioners. According to the Organisation for Economic Co-operation and Development (OECD), key competences entail the ability to interact in socially heterogeneous groups, to act autonomously and to use tools interactively [10]. These components specifically refer to the utilization of language and symbols to relate well to others, to cooperate, and to manage and resolve conflicts. Communication capacity was later added into the framework of key competences and skills for the 21st century [11]. More recently, global competence is defined as a multidimensional capacity that encompasses the ability to examine issues of local, global and cultural significance; understand and appreciate the perspectives and worldviews of others; engage in open, appropriate and effective interactions across cultures; and take action for collective well-being and sustainable development [10]. From key competences to global competences, speaking capacity has been the subject of many systematic investigations [12].

L2 speaking has also gained its primacy with the prevalent adoption of online teaching, particularly Emergency Remote Teaching (ERT) which has been considerably highlighted during the COVID-19 pandemic in the past three years [13–15]. The increasing number of online courses generates considerable demands for L2 speaking proficiency for online interaction and engagement [16]. Besides, the salient importance of L2 speaking is further underscored with the increasing prevalence of English as a Medium of Instruction (EMI) programs around the world in recent decades (i.e., [17–19]). However, speaking in English, as a multifaceted phenomenon involving multi-dimensional factors at cognitive, affective, linguistic, and sociocultural levels, is much more demanding for mastery [20,21]. Additionally, the concurrent and recursive nature of speaking makes it a daunting task for learners to pursue L2 speaking proficiency

[22]. It is even more challenging for English as a Foreign Language (EFL) learners due to limited opportunities to contact the native speakers and culture [23].

As one of the crucial affective dimensions, motivation has the potential to significantly impact speaking performance of EFL learners. To date, a copious body of research has underscored the importance of motivation for success in language learning (e.g., [24]) and in L2 speaking in particular [25–27]. Motivation could contribute to learners' maneuvering of the complex speaking process and thus the quality of L2 speaking performance. Demotivation, the dark side of motivation, also plays a considerable part in deciding the success of language learning. Demotivation is a multi-faceted phenomenon with a contextually situated and domain-specific disposition [28]. Given the potential jeopardizing effect of demotivation, it is necessary for teachers to gauge the demotivating effect of L2 speaking and to take corresponding countermeasures so as to improve L2 speaking teaching efficiency. For the purpose of better facilitating teachers' sensitization with L2 speaking demotivation, it is paramount that this construct be conceptualized. L2 speaking demotivation is thus defined as a process of the weakening of the motivation for learning L2 speaking directly or indirectly due to the negative influence or changes of both internal and external factors. For all the voluminous research on general language learning (i.e., [29]), there is scanty research on L2 speaking demotivation.

In a nutshell, in spite of the fact that L2 speaking competence has been incrementally emphasized, there remains a paucity of evidence in contrast to other competences like literacy and numeracy [21,27,30]. Meanwhile, L2 speaking demotivation has been underexplored, even though there have been numerous studies on demotivation for general language learning [29]. Therefore, to bridge this gap, the present study aims to develop and validate a scale for measuring demotivation in L2 speaking, the English Speaking Demotivation Scale (ESDS). This scale can be applied as an instrument to investigate the possible sources of L2 speaking demotivation, which shall be conducive to promoting our understanding of demotivation, lessening detrimental emotions and promoting mental health in L2 speaking learning.

Literature Review

Demotivation in general second language learning

In contrast to second language (L2) motivation, L2 demotivation is relatively alien to the field of second language acquisition. Thanks to a group of pioneers [4,31], L2 demotivation has been conceptualized as a process involving both external and internal factors that might hamper motivation in L2 learning process [9], lead to mental health problems such as anxiety, stress, burnout, and loss of resilience [6,7]. These early efforts have revealed the multi-sourced nature of L2 demotivation and subsequently led to the fashion of research in this field. Numerous studies have explored the external and internal sources of L2 demotivation in general L2 learning by means of both quantitative and qualitative techniques [9,28,29,32].

Research has shown that the external demotivating factors are mainly associated with teachers [29], curriculum and learning materials [29], as well as learning environment [32]. Teacher-related factors are the first external demotivators. For instance, in their qualitative analysis of the stimulated recalls of Vietnamese non-English major undergraduates, [33] reported that teacher-related factor was the primary cause for demotivation. The second major external demotivator relates to curriculum and learning materials [34]. For example, in their questionnaire survey on L2 demotivation of 656 Japanese high school students, [5] found that learning materials were the main discouraging forces that seduced demotivation. Thirdly, learning environment has been examined as an important stimulus responsible for L2 demotivation. Elements of learning environments such as overcrowded classrooms, unfriendly learning atmospheres, and undesirable learning facilities are reported to be most demotivating for L2 learning [33].

Besides, research has revealed that internal factors such as lack of self-confidence [4,35], intrinsic interest [28,35], and effective language learning strategies [36] are the primary internal demotivators. To illustrate, in an interview study with Hungarian EFL learners, [4] found that the decrease in self-confidence in addition to an experience of failure was the primary internal demotivating factor. This was also echoed in the Japanese context [35]. Another major internal L2 demotivator is a lack of enthusiasm. This point is displayed in the results reported by [31,37], who found that lack of intrinsic interest was the main demotivating factor for L2 learners. A third important internal demotivator pertains to the lack of effective language learning strategies. Reference [36] investigated 900 Japanese university learners' demotivating factors for English learning. Their results showed that less proficient learners' lack of effective learning strategies was the main factor that might have caused their demotivation for English learning.

As for research on Chinese EFL learners' demotivation, similar results have been reported. For example, Chinese EFL learners were found to be demotivated by a number of external factors such as the teacher's ability and teaching style [38], curriculum and learning materials [39], and the negative impact of the learning environment in relation to teaching facilities and the size of class [40]. Additionally, internal factors such as lack of self-confidence and intrinsic interest [40], and the lack of effective learning strategies [41] were found to be major factors leading to Chinese EFL learners' demotivation to learn English.

The above-reviewed literature presents a comprehensive view of L2 demotivation. However, they are considered to bear certain shortcomings. For example, little research applied a validation process which is an essential step for scale development [42]. A paucity of such a validation process might undermine the reliability and validity of the instrument and thus reduce the generalizability of the results into other similar contexts. Secondly, in contrast to those studies conducted outside China, there has been relatively less research on the demotivation to learn English among Chinese EFL learners who are claimed to be the largest population of English learning in the world [28]. Additionally, existing research mainly focuses on L2

demotivation in general language learning contexts. Little is known about the features of demotivation to learn a second/foreign language in domain skills such as listening, speaking, reading, and writing.

Demotivation in second language speaking learning

In contrast to research on demotivation in general L2 learning, there has been relatively less attention paid to L2 learning at domain levels. For instance, with regard to demotivation in L2 reading, monotonous teaching, threat to self-worth, and learning difficulties were listed by EFL learners as the most influential demotivators [43]. Besides, factors such as threats to self-worth and monotonous teaching were identified to be responsible for demotivation in L2 writing [43]. In addition, learner cognition of their L2 writing proficiency, teacher behavior, writing materials, and teaching situation were also found to be critical demotivators in L2 writing [9].

As regards demotivation in L2 speaking, there are a scanty number of relevant studies [21,44,45]. Of these limited studies, [44] found three demotivating factors in L2 speaking learning, namely, learning styles, unfamiliar vocabulary, and listening difficulties. In her survey of demotivation in English speaking learning among Chinese EFL university learners, [45] found such demotivating factors as lack of confidence, contents and method of oral output, oral English teacher's personality, teaching ability and methods, and others. In addition, [21] found experience with failure emerged as the strongest demotivator in English Listening and Speaking (ELS) achievement.

Of the above studies, [44] applied experimental method with 15 participants. Reference [21] validated the interrelationship between demotivation and L2 listening and speaking, but their demotivation instrument was adapted from general English language learning, without making it specific to English speaking. Reference [45] surveyed non-English major students' demotivation to learn English speaking, but did not report the reliability of her instrument. These studies are either cautioned for their small sample sizes or for not mentioning their reliability. It is of particular importance to include a reliability analysis step for a scale adaption and/or development [9]. Otherwise, the factor structure of the instrument shall be undermined and difficult to be guaranteed.

In summary, existing research on L2 demotivation in general and in L2 speaking presents a holistic picture for us to better gauge L2 demotivation that it is a multi-faceted complex phenomenon. However, there still exist a certain number of issues to be further addressed. Firstly, existent research mainly focuses on such competences as literacy and numeracy, but has failed to consider L2 speaking. Secondly, the present research has paid its primary attention to L2 demotivation in general language learning. However, L2 demotivation in domain levels of language learning, L2 speaking in particular, remains poorly understood. Thirdly, among the limited relevant studies, there is little research clearly reporting the development and validation process of the scale. Therefore, to bridge these gaps, the present study aims to develop and validate a scale for measuring demotivation in L2 speaking, the English Speaking Demotivation Scale (ESDS).

Research Design

Research questions

The present study aims to develop and validate an instrument (the English Speaking Demotivation Scale: ESDS) for measuring Chinese tertiary non-English majors' demotivation to learn English speaking. The study mainly addresses the following questions:

Question 1: What is the factorial structure of the ESDS to measure demotivation to learn English speaking among Chinese tertiary non-English majors?

Question 2: What are the psychometrical reliability and validity of the ESDS as an instrument to measure demotivation to learn English speaking among Chinese tertiary non-English majors?

Participants

The present research was a two-phase study including the scale development and validation stages. It thus utilized two datasets from two groups of participants. The first phase of the study aimed to develop the English Speaking Demotivation Scale (ESDS). This stage involved 207 Year-1 non-English majors from a local university in central China (Sample 1). This sample was composed of 122 males and 85 females. They were averagely aged at 18.76, with the youngest at the age of 17 and the oldest at 22. The participants obtained an average score of 109.00 out of the 150 full marks in their National English Matriculation Test, with a highest score of 142 and a lowest of 53. Among the respondents, 81 of them scaled themselves to be at a low level of Spoken English proficiency, 109 of them at an intermediate level, and 17 of them at a high level. They were from such programs as Electrical Engineering, Mechanical Manufacture and Automation, Software Engineering, Environmental Engineering, Computing Science, Business, Finance, and Management.

The second phase of the study was designed to validate the scale. This stage involved another independent sample (Sample 2) of 188 first-year non-English undergraduates from the same university as the participants for the first phase. This sample constituted 130 males and 58 females. They were averagely aged at 18.41, with the oldest at 23 years old and the youngest 17 years old. The participants were averagely scored 108.27 in the National English Matriculation Test, with a highest score of 143 and a lowest of 50. With regard to the self-perceived Speaking English proficiency, 12 of the participants assessed themselves to be at a high level, 68 of them at a low level, and the remaining 108 surveyed students scaled themselves to be at a medium level. The participants majored in the programs the same as Sample 1 did mainly related to engineering.

Instrument

The 38-item English Speaking Demotivation Scale (ESDS) was designed with references to sources from previous related studies (i.e., [5,38,45]). Firstly, as informed by the literature review that demotivation results from both internal and external factors, the authors decided to include the internal

and external demotivators when designing the instrument. Then, the specific items to be included in the instrument were adapted from previous studies. Seven items related to teachers were adapted from [38], while six items related to curriculum and learning materials were informed by [45]. Four items related to the learning environment were adapted from [45], with an additional eight items selected from [5]. Four items concerning learners' confidence in English speaking learning were informed by [45], and three items associated with effective learning strategies were adapted from [38]. Furthermore, the study included six items inquiring about the learners' interest in learning to speak English, which were based on [45]. For example, the item "lack of effective learning strategies in English learning" in [38] was modified to "lack of effective learning strategies in English speaking learning" to cater for the purpose of this study.

To ensure content validity, the questionnaire underwent several stages of review and modification. Initially, two PhD candidates in applied linguistics were invited to review the questionnaire and remove any potentially ambiguous expressions. This was followed by a moderation of the initial pool of 38 items by two experts in the field of English language teaching. Before finalizing the instrument, four non-English majors were interviewed to ensure that the questionnaire items catered to the features of English speaking learning of the surveyed participants and to guarantee the validity of the instrument. Such a practice has been reported as a technique to ensure content validity in previous studies (i.e., [46,47]). The four interviewees, who were majors in Electrical Engineering, Mechanical Manufacture and Automation, Environmental Engineering, and Computing Science respectively, were selected based on the consideration that they were having English speaking class similar to the other sampled students and might have similar learning experiences. The learners first filled in the questionnaire to measure the possible time needed to complete it. Subsequently, they were asked to discuss their understanding of the questionnaire items in Chinese, focusing on whether the items could truly reflect their English speaking learning experiences and whether any wording might cause misunderstanding. Based on the feedback from these interviewees, the questionnaire was finalized with 38 items.

The questionnaire consists of two parts. The first part collected demographic information of the participants, such as gender, major, and self-assessed Spoken English proficiency. The second part inquired about the demotivating factors of non-English majors in learning English Speaking as follows: teacher-related factor (Items 1–7), curriculum and learning materials (Items 8–13), learning environment (Items 14–17, and Items 25–32), self-confidence (Items 18–21), interest in learning (Items 33–38), and English Speaking strategies (Items 22–24). The first three categories pertain to the external factors, while the latter three fall into the internal ones. The instrument followed a Likert-5 point scale from strongly disagree (1) to strongly agree (5). The Cronbach's Alpha of the questionnaire was 0.925, indicating high reliability of the scale.

Data collection

The authors first obtained consent from the College English teachers of the participants to administer the questionnaire survey in their class. Before the survey commenced, the respondents were briefed on the objectives and methods of answering the questionnaire items. Participants were assured that their information would be kept confidential and be used for academic purposes only. They were informed that their responses would not affect their English scores in the final exam of the semester. To aid their understanding of the items, the survey was conducted in Chinese, their mother tongue. On average, each student took 6–8 minutes to complete the questionnaire.

During the first phase, 240 copies of the questionnaire were distributed to the participants, of which 230 copies were returned. After removing 23 invalid copies due to incomplete or incorrect answers, the researchers obtained 207 valid questionnaires for later Exploratory Factor Analysis (EFA). In the second phase, 240 copies of the questionnaire were distributed to the second independent sample who did not participate in the first phase of the survey. There were 227 copies returned. After excluding 39 invalid copies due to incomplete or incorrect answers, 188 valid ones were obtained for later Confirmatory Factor Analysis (CFA).

Data analysis

In order to determine the factorial structure and to validate the reliability and validity of the ESDS instrument (38 items), EFA and CFA were respectively conducted on the two sampled data. Firstly, EFA with the principal axis factoring method was performed to investigate the factorial structure of the developed 38-item ESDS questionnaire (Research Question 1) by analyzing the inter-item relationships with Sample 1. When administering factor analysis with SPSS 26.0, the criterion of eigenvalues of 1.0 or higher and loadings of 0.3 or above were followed to determine the number of factors. Meanwhile, oblimin rotation was applied as factor rotation method for the potential factors should be correlated [48].

Secondly, CFA was conducted with Amos 24.0 to validate whether the factorial structure acquired in EFA could be confirmed on Sample 2 (Research Question 2). At this stage, model goodness-of-fit was assessed by referring to the following suggested indices: Chi-square (χ^2), ratio of chi-square to degree-of-freedom (χ^2/df), Adjusted Goodness-of-Fit Index (AGFI), Incremental Fit Index (IFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) [43,44,49,50]. Besides, Average Variance Extracted (AVE) and Composite Reliability (CR) were utilized to assess the convergent validity of the scale. The purpose of analyzing the scale's convergent validity was to examine whether the expectedly related items were factually related. Further, the AVE square root number values were employed to evaluate the discriminant validity of the factors of the instrument for the objective of testing whether the items of a particular factor were actually not related to those of other factors [51].

TABLE 1

Total variance explained (33 items)

Factor	Eigenvalues	% of variance	Cumulative %	Cronbach's alpha
1	5.330	16.153	16.153	0.902
2	5.092	15.430	31.583	0.938
3	4.519	13.694	45.277	0.898
4	3.923	11.886	57.163	0.843
5	2.988	9.055	66.218	0.897
6	1.557	4.720	70.937	0.801

TABLE 2

Inter-factor correlation matrix of the scale

Factor	F1	F2	F3	F4	F5	F6
TFLSE	1					
IVLSE	0.617	1				
SELSE	0.363	0.614	1			
NPILSE	0.448	0.556	0.635	1		
UELSE	0.540	0.713	0.568	0.651	1	
NIALM	0.645	0.595	0.487	0.684	0.581	1

Results

Exploratory factor analysis

In order to answer Research Question 1, EFA was performed on the collected data in Phase 1 (Sample 1). EFA could recombine chaotic variables and explore the potential structural relationships between variables [52]. Firstly, to explore whether the scale of this study was suitable for EFA, Kaiser–Meyer–Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity of the scale were measured. The KMO test value was 0.930 (>0.700). The Approx. Chi-Square was 5313.113; the df was 528; and the significance probability of the Bartlett's Test was 0.000 (<0.001). These statistics showed that the scale of this study was suitable for factor analysis.

Then, through principal component analysis and following the criteria that eigenvalues for each factor should be over 1.0 and factor loadings of all items be above 0.3 [53,54], 6 factors were extracted (Table 1). The cumulative total explained variance of the 6 factors was 70.937%, and the percentages of each factor's variance explained from Factor 1 to Factor 6 were 16.153%, 15.430%, 13.694%, 11.886%, 9.055%, and 4.720%, respectively. The Cronbach's Alpha of this 33-item scale was 0.959, with the ones for the six components of the scale ranging from 0.801 to 0.938. All these figures exceeded 0.80, showing that the internal consistency of the scale was ideal and indicating a high reliability of the scale [55].

TABLE 3

Factor loadings (33 items)

Item	F1	F2	F3	F4	F5	F6
4	0.794					
2	0.763					
5	0.749					
6	0.742					
3	0.729					
7	0.699					
1	0.669					
37		0.820				
36		0.811				
35		0.794				
34		0.692				
33		0.632				
38		0.604				
22			0.758			
21			0.728			
23			0.725			
19			0.707			
20			0.702			
18			0.635			
24			0.632			
16				0.752		
15				0.677		
17				0.663		
14				0.600		
29				0.523		
31					0.814	
30					0.814	
32					0.714	
27					0.366	
25					0.308	
10						0.607
11						0.502
13						0.315

In addition, the inter-factor correlations among the six extracted factors ranged from 0.363 to 0.713 (Table 2). These correlation coefficients were moderately high, which thus suggested that the oblique solution was appropriately used for rotation.

Table 3 shows the items subsumed in each of the 6 factors and their factor loadings. These factors were named as follows: Factor 1 included 7 items (Items 1–7), with Cronbach's Alpha of 0.902 and its factor loadings ranging from 0.699 to 0.794. The items included in this factor were related to the English teacher's Spoken English ability, English teaching method and character. Factor 1 was thus named as *Teacher-related Factor in Learning Spoken English* (TFLSE). Factor 2 contained 6 items (Items 33–38) with Cronbach's Alpha of

0.938. The loadings of each item of this factor ranged from 0.604 to 0.820. These items were all about the interest, attitude and value of learning Spoken English. Therefore, Factor 2 was coded as *Interest and Valence in Learning Spoken English* (IVLSE). Factor 3 was composed of 7 items (Items 18–24), with Cronbach's Alpha of 0.898 and its factor loadings ranging from 0.632 to 0.758. The items categorized into this factor were all related to confidence in Spoken English output, Spoken English ability, and efficacy in applying strategies for learning Spoken English. Factor 3 was then denominated as *Self-efficacy in Learning Spoken English* (SELSE).

Factor 4 constituted 5 items (Items 14–17, 29) with Cronbach's Alpha of 0.843. The loadings of each item of this factor ranged from 0.523 to 0.752. These items regarded the negative influence of peer collaboration in the activity about Spoken English. This factor was thus tagged as *Negative Peer Influence in Learning Spoken English* (NPILSE). Factor 5 comprised 5 items (Items 25, 27, 30–32), with Cronbach's Alpha of 0.897 and its factor loadings ranging from 0.308 to 0.814. The items included in this factor were all about the negative influence of the environment and the atmosphere of speaking English. Therefore, Factor 5 was taken as *Undesirable Environment for Learning Spoken English* (UELSE). Factor 6 included 3 items (Items 10–11, 13), with Cronbach's Alpha of 0.801. The loadings of each item of this factor ranged from 0.315 to 0.607. The items inclusive of this factor all talked about the assessment of Spoken English and the design of Spoken English learning material. Factor 6 was thus labeled as *Negative Influence of Assessment and Learning Materials in speaking class* (NIALM).

In summary, through EFA, 6 factors were extracted as a theoretical and empirical framework of demotivation to learn English speaking as follows: *Teacher-related Factor in Learning Spoken English* (TFLSE), *Interest and Valence in Learning Spoken English* (IVLSE), *Self-efficacy in Learning Spoken English* (SELSE), *Negative Peer Influence in Learning Spoken English* (NPILSE), *Undesirable Environment for Learning Spoken English* (UELSE), and *Negative Influence of Assessment and Learning Materials in speaking class* (NIALM). A total of 33 items were obtained out of the pool of 38 items.

Confirmatory factor analysis

The second Phase of the research attempted to cross-validate the scale structure generated from EFA by performing CFA on the collected data of another independent sample (Sample 2) with AMOS 24.0. CFA included the following 4 steps, namely, construction, assessment, modification, and analysis of the Structural Equation Model. At the first step of the construction of the Structural Equation Model, the initial model based on the EFA results (Table 3) was established (Fig. 1). This path diagram clearly showed the factorial structure of the theoretical conception, in which each variable was only loaded on one factor.

The second step is to assess the structural equation model, whose purpose was to evaluate the goodness-of-fit of the factor model of the scale. Such essential fit indices as χ^2 , χ^2/df , AGFI (Adjusted Goodness-of-Fit Index), IFI

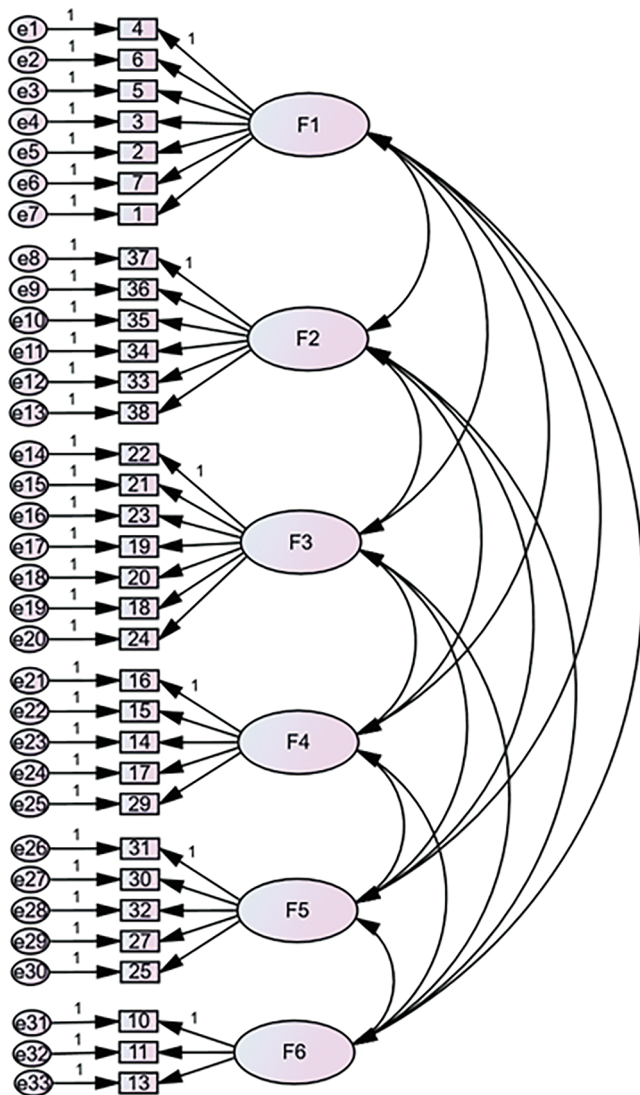


FIGURE 1. Initial path diagram.

(Incremental Fit Index), CFI (Comparative Fit Index), and RMSEA (Root Mean Square Error of Approximation) are suggested for evaluating the factor model of a scale [49,50]. Specifically, the commonly recommended criteria are as follows: χ^2/df should be ≤ 3.0 ; AGFI should be ≥ 0.8 but ≤ 1 ; IFI should be ≥ 0.9 but ≤ 1 ; CFI should be ≥ 0.9 but ≤ 1 ; and RMSEA should be ≤ 0.08 .

It can be found from Table 4 that the results ($\chi^2 = 1251.008$; $\chi^2/df = 2.606$; AGFI = 0.667; IFI = 0.780; CFI = 0.777; RMSEA = 0.093) of the first round of CFA implied that these indices were not completely satisfactory. For instance, the RMSEA was not lower than 0.08 and the CFI was not over 0.9. Despite the fact that the Chi-square test is heavily associated with sample size [49,56], the fit indices of the first round CFA results for the six-factor model with the 33 items identified in the EFA solution did not display good model fit. Therefore, the model fit needs further improvement.

Step 3 is the modification of the Structural Equation Model. When the goodness-of-fit of the model is not ideal, the model needs to be modified [50]. The analysis (Model 1) of the initial model revealed that modification of the model is necessary (Fig. 2).

Firstly, the model was modified by examining the factor loadings of the items [51]. Evaluating the factor loadings revealed that Item 25 in Model 1 had a lower value of 0.46 which was lower than 0.5. This examination indicated that Item 25 shared little commonality with other items. It was therefore deleted. Then, items with high Modification Indices (MI) are to be deleted, and CFA shall be subsequently rerun on the modified factor model [50]. The reason for taking MI as a method to modify the model is as follows: MI is considered to be a critical technique for improving model fit [57]. When a chi-square value is large, it indicates an unsatisfactory model fit. MI is accordingly suggested as a means by which the chi-square could be reduced to improve the model fit [50]. Rerunning the data after deleting Item 25 yielded Model 2. However, Model 2 did not reach the satisfactory level in terms of the suggested

TABLE 4

Modification of model

Model	χ^2	χ^2/df	AGFI	IFI	CFI	RMSEA	Delete item
Recommended data	/	≤ 3.0	≥ 0.8	≥ 0.9	≥ 0.9	≤ 0.08	
Model 1	1251.008	2.606	0.667	0.780	0.777	0.093	25
Model 2	1132.761	2.523	0.685	0.798	0.795	0.090	33
Model 3	987.372	2.356	0.709	0.823	0.820	0.085	34
Model 4	909.109	2.331	0.716	0.832	0.829	0.084	5
Model 5	836.133	2.310	0.726	0.840	0.837	0.084	1
Model 6	752.882	2.247	0.739	0.854	0.851	0.082	27
Model 7	692.456	2.241	0.747	0.862	0.860	0.081	20
Model 8	567.979	2.000	0.781	0.890	0.888	0.073	14
Model 9	509.020	1.958	0.788	0.899	0.897	0.072	18
Model 10	458.389	1.934	0.796	0.907	0.905	0.071	38
Model 11	417.036	1.940	0.801	0.911	0.910	0.071	/

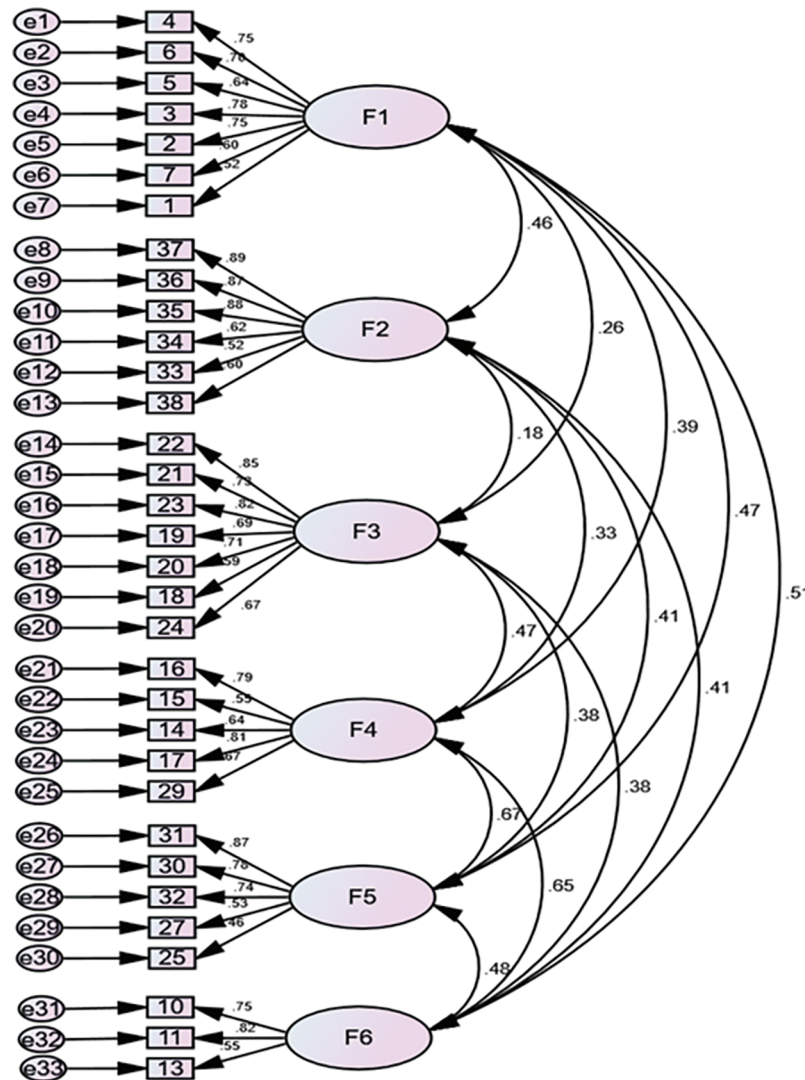


FIGURE 2. Model 1.

assessment criteria. In this model, Item 33 had a relatively high residual correlation with Item 34 (MI = 50.514). When deciding which item to be deleted, both content validity and factor loading need to be taken into account. However, since content validity was already addressed in the development of the instrument in Section 3.2, factor loading was primarily followed as a criterion to decide which item to be deleted at this step. Therefore, Item 33 was deleted and Model 3 was subsequently obtained.

In Model 3, Item 34 had a high residual correlation with Item 27 (MI = 12.919). As a consequence, Item 34 was deleted. The fitting indices of Model 4 were still not good enough. Item 5 was thus removed due to the high residual correlation with Item 10 (MI = 13.248). In Model 5, Item 1 with high residual correlation with Item 2 (MI = 10.431), resulting in the deletion of Item 1. The fitting indices of Model 6 were still not acceptable. In this model, the factor loading of Item 27 was only 0.47, lower than 0.5, leading to the elimination of Item 27. Then, Item 20 was deleted by the high residual correlation with Item 19 (MI = 45.876) in Model 7. While Model 8 showed acceptable values for RMSEA (0.073) and χ^2/df (2.000), the fits of other models were deemed inadequate. Hence, Item 14 was removed due to the high

residual correlation with Item 13 (MI = 8.511). To continue, because Item 18 had a high residual correlation with Item 30 (MI = 9.799) in Model 9, it was deleted. The model fits in Model 10 were almost satisfactory, only the value of AGFI was lower than 0.8. It meant that Model 10 needed another round of modification. Item 38 had high residual correlation with Item 16 (MI = 11.048) in this model, so Item 38 was eliminated. The results of fit indices for these previous modified models finally reached the suggested cut-off levels ($\chi^2 = 417.036$; $\chi^2/df = 1.940$; AGFI = 0.801; IFI = 0.911; CFI = 0.910; RMSEA = 0.071). The modified model (Model 11) was therefore taken as the final model (Fig. 3). The standardized parameter estimates for each item ranged from 0.53 to 0.92 with all the estimates higher than the threshold value of 0.500 [51,52]. Cronbach's alphas of the subscales ranged from 0.723 to 0.916, and Cronbach's alpha of the whole scale was 0.890.

Step Four aimed to analyze the construct validity of the scale. To this end, convergent and discriminant validity were tested. The convergent validity was measured through Average Variance Extracted (AVE) and Composite Reliability (CR). The former is suggested to be higher than 0.5 and the latter to be higher than 0.6 [58,59]. As shown in

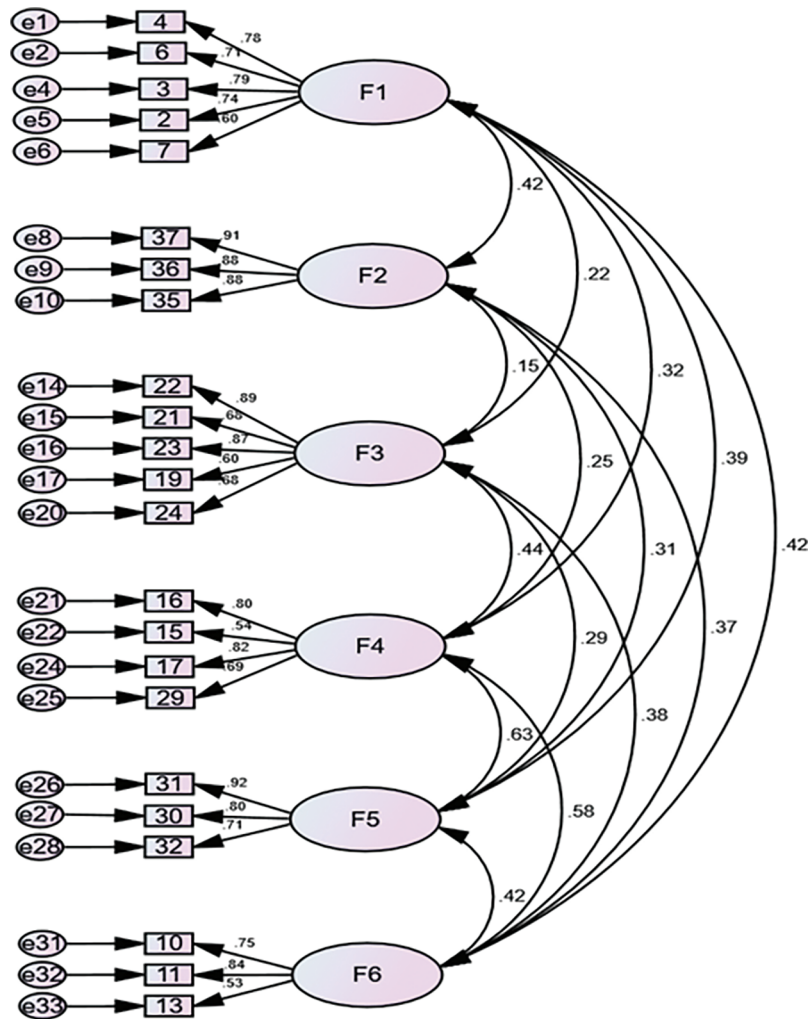


FIGURE 3. Reconstruction of factor model (Model 11).

Table 5, the AVE values for the six factors were 0.5284, 0.7894, 0.5711, 0.5179, 0.6674, and 0.5149, respectively, all exceeding the threshold value of 0.50. Besides, the CR values for the six subscales were 0.8474, 0.9183, 0.8667, 0.8075, 0.8562, and 0.7547 respectively, exceeding the cut-off point of 0.60. Therefore, it could be concluded that both the AVE values and the CR statistics provided sound evidence that the convergent validity of the scale was satisfactory.

In terms of discriminant validity, each construct shall have good construct discriminant validity if its AVE square value is higher than the Pearson correlation coefficients of other constructs [60]. As demonstrated in Table 6, the AVE root number values for each subscale were 0.7632, 0.8885, 0.7557, 0.7197, 0.8169, and 0.7176, respectively, all higher than the Pearson correlation coefficient values of other constructs. These figures showed that each subscale as well as the overall scale had satisfactory discriminant validity.

In summary, the results of the CFA, convergent validity and discriminant validity supported that Model 11 is the final version of the scale developed and validated in the present study. The internal factor structure of the instrument is as follows: Factor 1 of *Teacher-related Factor in Learning Spoken English* (TFLSE) contains Items 4, 6, 3, 2, and 7; Factor 2 of *Interest and Valence in Learning Spoken English*

(IVLSE) subsumes Items 37, 36, and 35; Factor 3 of *Self-efficacy in Learning Spoken English* (SELSE) includes Items 22, 21, 23, 19 and 24; Factor 4 of *Negative Peer Influence in Learning Spoken English* (NPILSE) consists of Items 16, 15, 17, and 29; Factor 5 of *Undesirable Environment for Learning Spoken English* (UELSE) encompasses Items 31, 30 and 32; Factor 6 of *Negative Influence of Assessment and Learning Materials in speaking class* (NIALM) is composed of Items 10, 11 and 13. The reliability (Table 7) of the whole scale and each dimension of the scale was confirmed with high internal consistency ($\alpha = 0.890, 0.838, 0.916, 0.862, 0.799, 0.846, 0.723$). It was validated that the 23-item ESDS is an effective instrument for measuring demotivation to learn Spoken English among Chinese tertiary non-English majors. Based on this finalized version, future studies on demotivation to learn Spoken English could be conducted on Chinese university non-English majors.

Discussion

The present study validated the 23-item English Speaking Demotivation Scale (ESDS) in the Chinese EFL context. This effort was initiated as a response to the growing body of literature that recognizes the significance of L2 speaking

TABLE 5

Regression weights of Model 11

	Path		Estimate	AVE	CR
V7	<—	F1	0.597		
V2	<—	F1	0.739		
V3	<—	F1	0.793	0.5284	0.8474
V6	<—	F1	0.707		
V4	<—	F1	0.781		
V35	<—	F2	0.876		
V36	<—	F2	0.879	0.7894	0.9183
V37	<—	F2	0.910		
V24	<—	F3	0.679		
V19	<—	F3	0.604		
V23	<—	F3	0.873	0.5711	0.8667
V21	<—	F3	0.683		
V22	<—	F3	0.895		
V29	<—	F4	0.687		
V17	<—	F4	0.819	0.5179	0.8075
V15	<—	F4	0.539		
V16	<—	F4	0.799		
V32	<—	F5	0.711		
V30	<—	F5	0.803	0.6674	0.8562
V31	<—	F5	0.923		
V13	<—	F6	0.525		
V11	<—	F6	0.837	0.5149	0.7547
V10	<—	F6	0.745		

proficiency in recent years as driven by the global promotion of oracy capacity from the OECD and more recently by the prevalence of Emergency Remote Teaching (ERT) against the background of the COVID-19. However, learners are found to be reluctant and even demotivated in participating in online communication in this ERT context [13,14]. It is therefore of particular significance to understand and measure the demotivation to learn Spoken English among these students. The present study thus mainly endeavored to develop and validate such an instrument to estimate demotivation to learn Spoken English among a cohort of Chinese tertiary population of non-English majors.

The first research question aimed to explore the factorial structure of the ESDS. To this end, a conceptual framework was initially constructed by means of a thorough review of the relevant literature. As a result, an item pool was obtained for further instrumental development. Then, the tentative scale was revised by consulting two PhD candidates in applied linguistics for any possible misunderstanding caused by ambiguous wordings and two professors for any potential problems in designing quantitative scales. The content validity of the instrument was later guaranteed by means of an interview with four non-English major students who were excluded from the official survey of the present study. After the instrument was

TABLE 6

Correlations between factors

Factor	F1	F2	F3	F4	F5	F6
F1	0.5282					
F2	0.4220	0.7894				
F3	0.2220	0.1510	0.5711			
F4	0.3170	0.2450	0.4380	0.5179		
F5	0.3880	0.3070	0.2870	0.6270	0.6674	
F6	0.4160	0.3780	0.3780	0.5840	0.4190	0.5149
Square of AVE	0.7268	0.8885	0.7557	0.7197	0.8169	0.7176

Note: The diagonal is Average Variance Extracted (AVE).

finalized, it was first tested on Sample 1 of 207 Chinese non-English majors through EFA to identify the structural feature of demotivation to learn Spoken English among the participants. Then, CFA was executed on Sample 2 of 188 Chinese non-English majors to cross validate the consistency of the factors identified from EFA and refine the items to improve the validity as well as the model fit by means of convergent validity and discriminant validity respectively.

The findings of the study demonstrated adequate psychometric properties of the English Speaking Demotivation Scale (ESDS). The results from EFA on the original 38-item ESDS generated a six-factor solution. This solution was supported by the CFA results with 23 items on the final version of the scale. The first factor (five items) testified in this study was tagged as *Teacher-related Factor in Learning Spoken English* (TFLSE). This subscale was intended to assess teacher influence upon the Chinese tertiary non-English majors' demotivation to learn Spoken English. This factor includes the negative influence of teacher's English pronunciation (Item 4), introverted personality of the teacher (Item 6), teacher's competence in giving clear and accurate explanations to students (Item 3), teacher's preparation for the class (Item 2) and teacher temper (Item 7). The inclusion of these items under TFLSE resonated with the results of previous studies regarding negative teacher influence upon demotivation in learning

TABLE 7

Reliability of the finalized scale

Factor	Item	Cronbach's alpha
F1	4, 6, 3, 2, 7	0.838
F2	37, 36, 35	0.916
F3	22, 21, 23, 19, 24	0.862
F4	16, 15, 17, 29	0.799
F5	31, 30, 32	0.846
F6	10, 11, 13	0.723
The whole scale	23 items	0.890

English for general purposes (i.e., [34]). It is postulated that Spoken English teachers play an essential part in influencing Chinese non-English major students' demotivation to learn Spoken English.

The second factor, which was validated in this study with three items, was named *Interest and Valence in Learning Spoken English* (IVLSE). This subscale pertains to the negative effect of a lack of intrinsic interest and perceived value in learning Spoken English among the surveyed participants. This is demonstrated in the items that address their perception of the unimportance of learning Spoken English because they had no aspiration to engage themselves in English-speaking-related jobs (Item 37) and no intention to pursue overseas education (Item 36), and because it is optional in national College English Test Band 4 (CET-4) (Item 35). It is speculated that learners with high scores on this factor would be demotivated by this lack of interest and valence in learning Spoken English. This result corroborated previous studies that intrinsic interest is a driving force in empowering and regulating learner behaviors and their investment into English learning [28,39]. It also indicated that exposure to the English-speaking environment and international posture seems to be important determinants in shaping learners' motivation to learn Spoken English [61].

The third subscale (five items) identified in this study was labeled as *Self-efficacy in Learning Spoken English* (SELSE). This factor was designed to measure the Chinese university non-English major learners' confidence and self-efficacy in learning Spoken English. It subsumed the items pertaining to their incapability of learning Spoken English on their own (Item 22), poor listening to communicate with others in English (Item 21), little knowledge of methods to learn Spoken English (Item 23), low confidence in speaking English because of poor English pronunciation (Item 19), and limited training of effective strategies to learn Spoken English (Item 24). It is posited that learners with high scores on this factor tended to be demotivated in learning Spoken English because of their lack of self-efficacy. This finding echoes the early conclusion that low confidence and limited self-efficacy are the major factors that might trigger demotivation in learning English [29].

The fourth factor (four items) confirmed in this study was denominated as *Negative Peer Influence in Learning Spoken English* (NPILSE). This factor was targeted at quantifying the negative peer influence in discouraging Chinese college non-English majors to learn Spoken English. It encompassed the items related to the disturbance of Chinese speaking from classmates when practicing Spoken English (Item 16), gaps in English speaking abilities among classmates (Item 15), the distraction from practicing Spoken English to play with mobile phones by peers (Item 17), and limited opportunities for practicing Spoken English because of some classmates who often dominate the speaking class (Item 29). It is hypothesized that learners with high scores on this factor would be demotivated by their peers in learning Spoken English. This result assonated with previous research that peers might exert negative influences upon Chinese tertiary non-English undergraduates' motivation to learn Spoken English [33,40].

The fifth subscale (three items) identified in the present study was codified as *Undesirable Environment for Learning Spoken English* (UELSE). This is illustrated in the items associated with few opportunities for oral communication with foreigners like teachers in English (Item 31) and with international students in English (Item 30), and limited access to oral English activities like English corners on campus (Item 32). It is assumed that students with high scores on this factor might be jeopardized in their motivation to learn Spoken English by the immediate undesirable environment for learning Spoken English. This result accords with previous studies that a context stricken with English contact shall exert a detrimental effect on learners' willingness to invest in pursuing oral proficiency in the target language [32].

The sixth factor with three items attested in the present study was labeled as *Negative Influence of Assessment and Learning Materials in speaking class* (NIALM). This is demonstrated in the items pertinent to the participants' perception of the unclearly introduced assessment criteria for their Spoken English learning and performance in class (Item 10), the mismatching of the Spoken English practice designed into Spoken English textbooks with the actual ability of the students (Item 11), and the less interesting and practical topics for practicing Spoken English in textbooks (Item 13). The inclusion of these items into the factor indicated the importance of clearly presenting assessment requirements and designing interesting topics and activities for the learners in Spoken English class. It is presupposed that learners who scored high on this factor would be demotivated by the instruction in speaking class with unclear assessment regulations and uninteresting topics. This result supports previous studies that inappropriate assessment and learning materials tend to be one of the primary demotivators in EFL learning [38].

A cross validation by means of CFA provided solid evidence for the existence of the six-factor structure identified in the EFA. The results of CFA supported the six-factor ESDS structure including TFLSE, IVLSE, SELSE, NPILSE, UELSE, and NIALM. The six-dimensional ESDS developed in the present study is conducive for elucidating the construct of L2 speaking demotivation among Chinese tertiary non-English major students. The six subscales reveal both similarities and discrepancies of L2 speaking demotivation from demotivation in general English language learning among Chinese university non-English majors [38] and other similar EFL contexts [29]. The item tool of the present study was originally developed from previous related studies [45] through abridgment and modification. The result thus generates consistent evidence of English speaking demotivation of Chinese non-English majors from that of other populations [62]. More importantly, the six dimensions constructed in the present study were developed in accord with the features specific to demotivation to learn English speaking of the Chinese non-English majors. The validation result then offers further proof of the unique features in the selected population's English speaking demotivation.

This study contributes to our knowledge of demotivation to learn Spoken English among Chinese tertiary non-English

majors through the development and validation of an English speaking demotivation inventory for Chinese university EFL learners, the ESDS. The ESDS validated in this study could accommodate the paucity of instruments intended to quantify English speaking demotivation. Existing instruments are primarily designed to measure demotivation in general English language learning [5,38]. The ESDS developed in the present study could thus provide a domain-specific instrument for gauging the disposition of demotivation at language specific skill levels, namely, English speaking, among Chinese college non-English majors.

The instrument validated in the study sheds light to the methods harnessed to develop quantitative scales for measuring L2 speaking demotivation. The development of previous L2 speaking demotivation scales mainly relies on such means as literature review or subjective perception [45]. These techniques might be able to offer theoretical support for justifying the development and inclusion of certain items. Nevertheless, scales developed by following such techniques might be problematic due to the inadequacy of empirical evidence. In light of these concerns, the present study firstly developed its instrument grounded on a thorough review of the previous related studies. Then, it adopted EFA to construct the nature of English speaking demotivation among the surveyed respondents. The six subscales yielded from the EFA were further cross validated by means of CFA. Hence, the dimensions of the ESDS in this study could reflect the characteristics of English speaking demotivation among Chinese tertiary non-English majors and thus guarantee robust validity of the instrument.

An additional contribution this study made pertains to that it presents solid and scientifically reliable and valid verification of the scale. This practice has been little reported in previous studies on L2 speaking demotivation. Few studies have applied such techniques as EFA and CFA to validate the reliability and validity of their scales to quantify English speaking demotivation [45]. Though Cronbach's Alpha and KMO are commonly provided, and despite triangulation is suggested, it still does not suffice to guarantee reliability and validity in applied linguistics [46]. Therefore, scientific verification techniques such as EFA and CFA could address this issue. All the subscales validated in the present study displayed satisfactory reliability, convergent validity and discriminant validity, suggesting that the ESDS is a reliable and valid instrument that can be utilized in measuring Chinese tertiary non-English majors' demotivation to learn Spoken English.

Conclusion

Major findings

The present study has validated that the ESDS can be used as a psychometrically valid and reliable instrument to quantitatively measure English speaking demotivation among Chinese tertiary non-English majors and learners in other similar EFL contexts. The ESDS for this study demonstrates the standard procedure for developing and validating a scale. The findings of the present study reveal that the English speaking demotivation among Chinese non-English majors consists of

six dimensions, namely, TFLSE, IVLSE, SELSE, NPILSE, UELSE, and NIALM. This study compensates for the shortage of self-developed and -validated instruments in exploring L2 speaking demotivation. It offers empirical evidence for developing and validating quantitative instruments to measure L2 speaking demotivation, and thus standardizes the procedures of quantifying this phenomenon in L2 speaking class.

Some strategies for lessening demotivation and promoting learners' mental health

The findings of the present study illuminate the sources of demotivation in learning English speaking. These results offer profound implications for diminishing demotivation and promoting learners' mental health not only in L2 speaking learning, but also in other domains of second language learning such as writing and reading. A number of strategies for lessening demotivation and promoting learners' mental health are proposed as follows:

Firstly, given that there is a paucity of research on L2 speaking demotivation and that speaking is one of the critical determinants of speaking performance, the ESDS developed and validated in the present study could be thus deployed by teachers as a diagnostic instrument to acquire insight into mental health state among the learners in terms of English speaking demotivation. In this regard, to explore English speaking demotivation could be the first but fundamental step towards the ultimate goal of developing learners' speaking proficiency and promoting their mental health.

Secondly, the findings regarding the external-internal sources of L2 speaking demotivation of the present study offer a number of pedagogical implications for lessening demotivation and promoting mental health in L2 class. Since demotivation is such an indelible obstacle to EFL learners' pursuit of speaking proficiency that a possible demotivator might offset the conducive effect of ten motivators [36], it is thus plausible to promote and maintain learner motivation through downsizing the jeopardizing effect of demotivation [9]. Specifically, given that external demotivators in relation to teachers, learning environment and peers are critical in seducing demotivation in L2 speaking classes, intervention measures such as adjusting teaching strategies, optimizing learning environment, providing interaction opportunities, and creating friendly teacher-learner rapport are suggested to deal with the undesirable effect of demotivation.

Meanwhile, the findings pertaining to internal factors such as lack of interest and self-efficacy in learning English speaking are informative in promoting mental health in L2 speaking classes and beyond. Actions to tackle learners' inadequate self-efficacy [2,63], enrich their strategic repertoire, and increase their confidence are advisable to diminish the detrimental influence of demotivation and maintain learners' motivation in English speaking [64]. Additionally, considering the negative influence of demotivation on L2 speaking learning, learners are encouraged to seek psychological and/or mental health services either from faculty members or peers on campus [2].

Thirdly, this study found that teaching materials and assessments for English speaking classes could exert negative influence upon learners' demotivation. Policy makers are therefore suggested to reconsider the selection and development of speaking learning materials and assessment criteria tailored to the need and expectations of non-English majors. For example, they might become more cognizant of demotivation and can measure the effectiveness of specific language programs such as EMI, ESP and EAP [65], with reference to the scale developed and validated in the present study.

Shortcomings and suggestions for future research

Although the results generated sound evidence for the reliability and validity of the ESDS, several limitations of this study should be acknowledged. First, the participants were mainly freshman students of non-English majors. The six-factor model may not be applicable to those learners who are at higher levels of education such as sophomores, juniors and seniors. A second shortcoming is that the sizes of the two independent samples for executing EFA and CFA were relatively not that large, which might subvert the reliability of the results [66]. Another limitation is related to the nature of this cross-sectional study with self-reported questionnaires which might fail to unpack the dynamicity of demotivation. In light of these shortcomings, future research is suggested to examine variations in sources of demotivation among learners across different educational stages. Longitudinal studies are also called for the further examination of the reasons behind the sources of English speaking demotivation in EFL contexts, together with multi-sourced data collected by both quantitative and qualitative techniques. Last but not least, given the complexity of emotional factors like demotivation and their possible dynamic and non-linear associations with learners' mental health and well-being in L2 learning [67], innovative approaches like Ecological Momentary Assessment (EMA), Latent growth curve modeling (LGCM) and idiodynamic approach underpinned by Complex Dynamic Systems Theory (CDST) are suggested as alternatives in future studies.

Acknowledgement: The authors are grateful for the Ministry of Education of China for the fund support. Heartfelt gratitude also goes to the editors for their editorial work and the valuable feedback from the anonymous reviewers.

Funding Statement: This work was funded by the Humanities and Social Sciences Project, China's Ministry of Education (Grant Number: 22YJA740016), the Key Project of Hubei Provincial Department of Education Philosophy and Social Science Research Fund (No. 21ZD051), and the Teaching and Research Fund of Hubei University of Technology (No. Xiao2022018).

Author Contributions: The authors confirm contribution to the paper as follows: C. L. Li: Conceptualization, Methodology, Data Curation, Data Analysis, Writing-Original Draft, Writing-Review & Editing; X. X. Zhao: Data Collection, Data Analysis, Writing-Original Draft; Z. W. Pan: Writing-Review & Revision; T. Yi: Data Analysis,

Writing-Review & Revision; L. Qian: Data Collection, Data Analysis, Writing-Review & Revision. All authors reviewed the results and approved the final version of the manuscript.

Availability of Data and Materials: The data will be provided upon request to the corresponding author.

Ethics Approval: The authors adhered to the ethical norms outlined in the Helsinki Declaration. The authors first obtained consent from the College English teachers of the participants to administer the questionnaire survey in their class.

Conflicts of Interest: The authors declare that they have no conflicts of interest to report regarding the present study.

References

1. Yang J, Zhang Y, Li P, Zhang H, Liu T. College students' academic stressors on mental health during the COVID-19 pandemic: a comparison between graduating students and non-graduating students. *Int J Ment Health Promot.* 2022;24(4): 603–18. doi:10.32604/ijmhp.2022.019406.
2. Zeng Y, Qiu S, Alizadeh A, Liu T. How challenge stress affects mental health among college students during the COVID-19 pandemic: the moderating role of self-efficacy. *Int J Ment Health Promot.* 2021;23(2):167–75. doi:10.32604/IJMHP.2021.015937.
3. Zada S, Wang Y, Zada M, Gul F. Effect of mental health problems on academic performance among university students in Pakistan. *Int J Ment Health Promot.* 2021;23(3):395–408. doi:10.32604/IJMHP.2021.015903.
4. Dörnyei Z. *Teaching and researching motivation.* London: Longman; 2001.
5. Kikuchi K. *Demotivation in second language acquisition: insights from Japan.* Bristol: Multilingual Matters; 2015.
6. Kim T, Kim Y, Kim J. Role of resilience in (de)motivation and second language proficiency cases of Korean elementary school students. *J Psycholinguist Res.* 2019;48(2):371–89. doi:10.1007/s10936-018-9609-0.
7. Li C, Dou R, Zhang S. A correlational study on psychological resilience and L2 demotivation among Chinese EFL learners. *Rev Argentina de Clin Psicol.* 2020;29(3):670–81. doi:10.24205/03276716.2020.770.
8. Wang Y, Guan H. Exploring demotivation factors of Chinese learners of English as a foreign language based on positive psychology. *Rev Argentina de Clin Psicol.* 2020;29:851–61. doi:10.24205/03276716.2020.116.
9. Karaca M, Inan S. A measure of possible sources of demotivation in L2 writing: a scale development and validation study. *Assess Writ.* 2020;43(2):63–77. doi:10.1016/j.asw.2019.100438.
10. OECD. *Teaching for global competence in a rapidly changing world.* New York: OECD Publishing; 2018. doi:10.1787/9789264289024-en.
11. Tang H, Mao L, Wang F, Zhang H. A validation study for a short-version scale to assess 21st century skills in flipped EFL classrooms. *Oxf Rev Educ.* 2022;48(2):148–65. doi:10.1080/03054985.2021.1935226.
12. Albogami A, Algethami G. Exploring the use of WhatsApp for teaching speaking to English language learners: a case study. *Arab World Engl J.* 2022;2(2):183–201. doi:10.24093/awej/covid2.12.

13. Dewaele JM, Albakistani A, Ahmed IK. Levels of foreign language enjoyment, anxiety and boredom in emergency remote teaching and in in-person classes. *Lang Learn J*. 2022;196(1):1–14. doi:10.1080/09571736.2022.2110607.
14. Thumvichit A. Unfolding the subjectivity of foreign language enjoyment in online classes: a Q methodology study. *J Multiling Multicult Dev*. 2022;22(1):1–18. doi:10.1080/01434632.2022.2050917.
15. Wang Y. Probing into the boredom of online instruction among Chinese English language teachers during the COVID-19 pandemic. *Curr Psychol*. 2023;43(6):1–15. doi:10.1007/s12144-022-04223-3.
16. Xing DY. Exploring oral English learning motivation in Chinese international students with low oral English proficiency. *J Int Stud*. 2019;9(3):834–55. doi:10.32674/jis.v9i3.749.
17. Derakhshan A. Review of internationalising learning in higher education: the challenges of English as a medium of instruction. *Int J Biling Educ Biling*. 2022;25(6):2313–5. doi:10.1080/13670050.2021.1882379.
18. Fang F. Review of English as a medium of instruction in Chinese universities today: current trends and future directions. *Engl Today*. 2018;34(1):32–7. doi:10.1017/S0266078417000360.
19. Kaur K. Crossing borders... shifting sands: an investigation of Chinese students' study experiences in the UK and China. *Stud Second Lang Learn Teach*. 2019;9(3):451–72. doi:10.14746/ssllt.2019.9.3.2.
20. Lin J. A structural relationship model for L2 oral proficiency, L2 interest, perceived importance of speaking, and out-of-class L2 contact. *Lang Teach Res*. 2022. doi:10.1177/136216882211074027.
21. Zhang X, Dai S, Ardasheva Y. Contributions of (de)motivation, engagement, and anxiety to English listening and speaking. *Learn Individ Differ*. 2020;79(4):101856. doi:10.1016/j.lindif.2020.101856.
22. Amoah S, Yeboah J. The speaking difficulties of Chinese EFL learners and their motivation towards speaking the English language. *J Lang Linguist Stud*. 2021;17(1):56–69. doi:10.52462/jlls.4.
23. Hernandez TA. The relationship among motivation, interaction, and the development of second language oral proficiency in a study-abroad context. *Mod Lang J*. 2010;94(4):600–17. doi:10.1111/j.1540-4781.2010.01053.x.
24. Cho YG. L2 learning motivation and its relationship to proficiency: a causal analysis of university students' EIL discourses. *Engl Teach*. 2013;68(1):37–68.
25. Salehpour G, Roohani A. Relationship between intrinsic/extrinsic motivation and L2 speaking skill among Iranian male and female EFL learners. *Bellaterra J Teach Learn Lang Lit*. 2020;13(1):43–59. doi:10.5565/rev/jtl3.803.
26. Kondo A. The effects of individual differences in speaking skills of Japanese EFL learners: aptitude (phonological working memory) and attitude (L2 motivation). *Stud Lang Sci*. 2021;19:1–18. doi:10.34609/sls.19.0_1.
27. Qiu X, Xu J. Defining oracy: second language listening and speaking motivation in higher education and the role of demographic factors. *Psychol Rep*. 2023;126(1):332–60. doi:10.1177/003329412111054775.
28. Li C. Understanding L2 demotivation among Chinese tertiary EFL learners from an activity theory perspective. *Front Psychol*. 2021;12:704430. doi:10.3389/fpsyg.2021.704430.
29. Kikuchi K. Motivation and demotivation over two years: a case study of English language learners in Japan. *Stud Second Lang Learn Teach*. 2019;9(1):157–75. doi:10.14746/ssllt.2019.9.1.7.
30. Alotumi M. EFL college junior and senior students' self-regulated motivation for improving English speaking: a survey study. *Heliyon*. 2021;7(4):e06664. doi:10.1016/j.heliyon.2021.e06664.
31. Chambers G. Taking the de out of demotivation. *Lang Learn J*. 1993;7(1):13–6. doi:10.1080/09571739385200051.
32. Kim TY, Kim Y, Kim JY. A qualitative inquiry on EFL learning demotivation and resilience: a study of primary and secondary EFL students in South Korea. *Asia-Pac Educ Res*. 2018;27(1):55–64. doi:10.1007/s40299-017-0365-y.
33. Trang TT, Baldauf Jr R. Demotivation: understanding resistance to English language learning: the case of Vietnamese students. *J Asia TEFL*. 2007;4(1):79–105.
34. Vakilifard A, Ebadi S, Zamani M, Sadeghi B. Investigating demotivating factors in foreign language learners: the case of non-Iranian Persian language learners. *Cogent Educ*. 2020;7(1):1–14. doi:10.1080/2331186X.2019.1690232.
35. Falout J, Maruyama M. A comparative study of proficiency and learner demotivation. *Lang Teach*. 2004;28(8):3–9.
36. Falout J, Elwood J, Hood M. Demotivation: affective states and learning outcomes. *System*. 2009;37(3):403–17. doi:10.1016/j.system.2009.03.004.
37. Akay C. Turkish high school students' English demotivation and their seeking for remotivation: a mixed method research. *Engl Lang Teach*. 2017;10(8):107–22. doi:10.5539/elt.v10n8p107.
38. Zhou CB, Wang WB. Demotivators analysis of Chinese university EFL learners. *Foreign Lang China*. 2012;45:48–55.
39. Yu ZY, Wei XB. On demotivating factors of learning English for non-English major postgraduates in China. *Foreign Lang World*. 2019;40(5):89–96.
40. Xu L. The construction of "SPOC + Flipped classroom" teaching mode based on demotivation. *Foreign Lang Educ*. 2018;39(5):81–4.
41. Li C. On the theoretical construction of negative impetus in foreign language learning based on the perspective of activity theory. *Engl Teach*. 2015;15:45–50.
42. Brown TA. *Confirmatory factor analysis for applied research*. New York, NY: Guilford Press; 2006.
43. Ghaith G. The interplay of selected demotivation determinants and achievement in EFL critical reading and writing. *TESL-EJ*. 2019;22(4):1–16.
44. Lei R, Levitan J. Motivating and demotivating factors of game-based learning approaches in Chinese college students' spoken English learning: a case study. *Asian EFL J*. 2020;6(24):32–72.
45. Wang SR. Analysis on the motivation deficiency in oral English production of non-English majors. *J Jiangxi Norm Univ Nat Soc Sci*. 2014;47(6):141–4.
46. Dörnyei Z. *Research methods in applied linguistics: quantitative, qualitative, and mixed methodologies*. New York: Oxford University Press; 2007.
47. Gan Z, He J, Mu K. Development and validation of the assessment for learning inventory in the Chinese context. *Asia-Pac Educ Res*. 2019;28(5):371–85. doi:10.1007/s40299-019-00435-7.
48. MacCallum RC, Roznowski M, Mar C, Reith JV. Alternative strategies for cross-validation of covariance structure models. *Multivar Behav Res*. 1994;29(1):1–32. doi:10.1207/s15327906mbr2901_1.

49. Kline RB. Principles and practice of structural equation modeling. 2nd ed. New York: Guilford publications; 2015.
50. Rong TS. AMOS and research methods. 2nd ed. Chongqing, China: Chongqing University Press; 2017.
51. Fan C, Wang J. Development and validation of a questionnaire to measure digital skills of Chinese undergraduates. *Sustainability*. 2022;14(6):3539. doi:10.3390/su14063539.
52. Thompson B. Exploratory and confirmatory factor analysis: understanding concepts and application. Washington DC: American Psychological Association; 2004.
53. Field A. Discovering statistics using IBM SPSS statistics. 3rd ed. Los Angeles: SAGE; 2013.
54. Phakiti A, de Costa P, Plonsky L, Starfield S. The palgrave handbook of applied linguistics research methodology. London, UK: Palgrave Macmillan; 2018.
55. George D, Mallery P. SPSS for windows step by step: a simple guide and reference 18.0 update. 11th ed. Boston: Allyn & Bacon; 2011.
56. Sun P, Zhang LJ, Gray SM. Development and validation of the speaking strategy inventory for learners of Chinese (SSILC) as a second/foreign language. *Asia-Pac Educ Res*. 2016;25(4):593–604. doi:10.1007/s40299-016-0287-0.
57. MacCallum RC, Roznowski M, Necowitz LB. Model modifications in covariance structure analysis: the problem of capitalization on chance. *Psychol Bull*. 1992;111(3):490–504. doi:10.1037/0033-2909.111.3.490.
58. Luo S, Gan Z. Validation of a measure of flipped English learning readiness and examination of its relationships with instructional practices, learning self-efficacy, and learning beliefs. *Front Psychol*. 2022;13:846781. doi:10.3389/fpsyg.2022.846781.
59. Hair JF, Black WC, Babin BJ, Anderson RE. Multivariate data analysis. Boston, MA, USA: Cengage; 2018.
60. Henseler J, Ringle CM, Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J Acad Mark Sci*. 2015;43(1):115–35. doi:10.1007/s11747-014-0403-8.
61. Lamb M. Your mum and dad can't teach you!: constraints on agency among rural learners of English in the developing world. *J Multiling Multicult Dev*. 2013;34(1):14–29. doi:10.1080/01434632.2012.697467.
62. Pack A, Kiss T, Barrett A, Chen C. Towards a non-dichotomous view of motivators and demotivators in language learning. *J Appl Linguist*. 2022;32(1):94–107. doi:10.1111/ijal.12397.
63. Fang F, Liu Y. Using all English is not always meaningful: stakeholders' perspectives on the use of and attitudes towards translanguaging at a Chinese university. *Lingua*. 2020;247(7):102959. doi:10.1016/j.lingua.2020.102959.
64. Tu H. Research on the generation path of heuristic teaching language based on positive psychology theory. *Int J Ment Health Promot*. 2023;25(4):485–504. doi:10.32604/ijmh.2023.026126.
65. Li C. Exploring L2 motivational dynamics among Chinese EAP learners in an EMI context from a socio-cultural perspective. *SAGE Open*. 2023;13(2):1–13. doi:10.1177/21582440231172704.
66. Button KS, Ioannidis JPA, Mokrysz C, Nosek BA, Flint J, Robinson ESJ, et al. Power failure: why small sample size undermines the reliability of neuroscience. *Nat Rev Neurosci*. 2013;14(5):365–76. doi:10.1038/nrn3475.
67. Derakhshan A, Wang YL, Wang YX, Ortega-Martín JL. Towards innovative research approaches to investigating the role of emotional variables in promoting language teachers' and learners' mental health. *Int J Ment Health Promot*. 2023;25(7):823–32. doi:10.32604/ijmh.2023.029877.