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A measure of Chinese language learning anxiety: Scale development and preliminary validation

Abstract: As the Foreign Language Classroom Anxiety Scale (FLCAS), the most widely used measure for foreign language anxiety, is a generic instrument that mainly addresses speaking anxiety and does not take into consideration of the characteristics of target languages, this study attempts to develop a Chinese[1] Language Learning Anxiety Scale reflective of anxieties associated with the four skills. The initial pool of items approved by five experts were administered to 447 Chinese language learners from two large public universities in the U.S. Exploratory factor analyses yielded a three-factor solution of the scale, i.e., Speaking Anxiety, Listening Anxiety, and Reading & Writing Anxiety, lending support to the construct validity of the scale. Results of reliability analysis and correlation analyses indicated that the Chinese Language Learning Anxiety Scale and its three sub-scales have good internal consistency reliability, convergent and discriminant validity, and criterion-related validity.

1 Research background

In the past three decades, the study of anxiety has attracted the attention of an increasing number of foreign language researchers and instructors. Horwitz,

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1 It should be noted that Chinese is an umbrella term for a wide range of varieties of languages spoken by Chinese people, including Mandarin, Cantonese, Shanghai dialect, etc.. However, Mandarin (the most widely spoken variety of Chinese) is the variety being taught in almost all the universities and K-12 schools in the U.S.

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Horwitz and Cope (1986) viewed foreign language anxiety as a situation-specific anxiety construct independent of other types of anxieties. They defined foreign language anxiety as "a distinct complex set of self-perceptions, beliefs, feelings and behaviors related to classroom language learning arising from the uniqueness of the language learning process" (Horwitz, Horwitz and Cope 1986: 128). They also identified three anxieties related to foreign language anxiety: communication apprehension (McCroskey 1970), fear of negative evaluation (Watson and Friend 1969), and test anxiety (Sarason 1978), to help language teachers and scholars understand the nature of foreign language anxiety. In addition, they offered an instrument, the Foreign Language Classroom Anxiety Scale (FLCAS), to measure foreign language anxiety.

After the introduction of the FLCAS and a number of other measures of foreign language anxiety (e.g. Gardner 1985, MacIntyre and Gardner 1994), researchers were able to measure foreign language anxiety relatively more precisely. Many studies have shown that foreign language anxiety is prevalent among foreign language learners (Horwitz, Horwitz, and Cope 1986, MacIntyre and Charos 1996, MacIntyre and Gardner 1989, 1991a, 1991b). Studies in a variety of language learning contexts have found that approximately one-third of students studying a foreign language experience at least a moderate level of foreign language anxiety (e.g. Aida 1994, Horwitz, Horwitz and Cope 1986, Horwitz 2001, Le 2004). The fact that approximately one out of every three students suffers from a certain degree of anxiety in foreign language classrooms should be taken seriously in all types of foreign language instruction.

In addition, a large number of studies have investigated the relationship between foreign language anxiety and second language achievement. These studies generally report a consistent moderate negative relationship between measures of language anxiety and language achievement (Horwitz 2001). For example, Gardner and MacIntyre (1993) found language anxiety to be the largest single correlate of foreign language achievement. Studies have also shown that foreign language anxiety is likely to have a negative impact on students' attitudes and motivation toward language study (e.g. Phillips 1990, 1992, Spitalli 2000).

As can be seen, foreign language anxiety is not only prevalent among language learners, but appears to interfere with language learning. Most language teachers are interested in the causes of foreign language anxiety so that they can create more comfortable language learning environments for the students. A large number of sources or causes of foreign language anxiety have been identified here and there in the literature. For example, Horwitz, Horwitz, and Cope (1986) considered foreign language anxiety as resulting from learners' difficulties presenting themselves authentically in the new language.

Sparks and Ganschow and their colleagues claimed poor language learning ability to be the only reason for foreign language anxiety (e.g. Sparks and Ganschow 1991, 1993a, 1993b). MacIntyre and Gardner (1993) proposed that language anxiety stem from repeated negative experiences associated with the foreign language.

Young (1991) proposed six potential sources of language anxiety: (1) personal and interpersonal anxieties, (2) learner beliefs about language learning, (3) instructor beliefs about language teaching, (4) instructor-learner interactions, (5) classroom procedures, and (6) language testing. Young (1991, 1994, 1999) categorized sources of foreign language anxiety into those stemming from the learner, the teacher, and the instructional practice. Based on a thorough literature review and the researcher's own insights, Luo (2012) proposed that four major sources contribute to foreign language anxiety, namely, the classroom environment, learner characteristics, the target language, and the foreign language learning process itself. Please refer to Luo (2012) for a detailed discussion on causes of foreign language anxiety.

Measures that are able to help language teachers identify anxious learners and diagnose the causes of anxiety are crucial. To date, the FLCAS, a generic foreign language anxiety scale, has been the most widely used instrument to measure foreign language learners' anxiety for all target languages. Thanks to Horwitz, Horwitz and Cope's (1986) seminal work on the FLCAS, studies on foreign language anxiety have prospered in the past three decades. Despite its tremendous contribution to the study of foreign language anxiety, the FLCAS has received some criticism and even caused some confusion among researchers in terms of the construct of foreign language anxiety.

For example, according to Aida (1994) and MacIntyre (1992), the FLCAS may be redundant and some items in the scale may be irrelevant. Many researchers have misinterpreted the FLCAS as having three distinct components, i.e., communication apprehension, test anxiety, and fear of negative feedback, which reflect the three sub-dimensions of foreign language anxiety. Rather, Horwitz, Horwitz and Cope (1986) held that foreign language anxiety is a unidimensional construct. According to Horwitz (1986), the three anxieties are only related to foreign language anxiety; they are not sub-dimensions of the construct.

The confusion among researchers may be due to lack of a clear explanation of the development procedures of the scale. Kim (2002) proposed several concerns about the FLCAS:

1. Little has been reported on the content-related validity of the scale.
2. No clear indication was given of the procedure to categorize the construct of foreign language anxiety into the three components.

3. The authors of the FLCAS did not include any items related to reading and writing skills.
4. It is doubtful that the items in the FLCAS are comprehensively representative of the construct of foreign language anxiety.
5. Such doubt on the FLCAS items for their representativeness of the construct leads to a debate on issues of construct underrepresentation. (Kim 2002: 38–41)

These criticisms of the FLCAS, to a certain degree, are based on the understanding that communication comprehension, fear of negative feedback, and test anxiety are components of foreign language anxiety, which Horwitz, Horwitz and Cope (1986) did not claim. However, Kim's suggestion that items in a scale should fully represent the domains of the construct is justified. Otherwise, the scale runs the risk of construct underrepresentation and construct irrelevancy. In other words, before developing a scale, a sound theoretical model of the construct and its sub-domains (if any) need to be constructed and this theoretical model or construct should be used as a guide to generate items for the scale (Dawis 1987, Devellis 2003).

Another concern with the FLCAS stems from its lack of comprehensiveness. Several researchers (e.g. Saito, Horwitz and Garza 1999, Kim 2000, Cheng, Horwitz and Schallert 1999, Cheng 2004) have found that foreign language reading, listening and writing anxieties are distinguishable from general foreign language anxiety as measured by the FLCAS (Horwitz, Horwitz and Cope 1986). Since the FLCAS primarily measures speaking anxiety, it may be advisable to develop a scale that includes items reflective of anxieties related to the other three skills.

In addition, studies seem to have indicated that the target language has an effect on foreign language anxiety. For example, compared to the anxiety levels of learners of other languages, CFL learners in Chinese study-abroad programs experienced substantially higher levels of anxiety (Le 2004), perhaps due to the difficulty level of Chinese (Samimy and Tabuse 1992, Norman 1996). Saito, Horwitz and Garza (1999) found that levels of foreign language reading anxiety were significantly different for the three target languages (Japanese, Russian and French) examined in their study ($p < .05$). When reading, learners of Japanese were the most anxious (M = 56.01), followed by the French participants (M = 53.14), with the Russian participants experiencing the lowest levels of reading anxiety (M = 46.64). Saito, Horwitz and Garza (1999) argued that "reading Japanese provoked higher anxiety levels than reading Russian or French was anticipated due to the unfamiliar and non-Roman writing system as well as the foreign cultural content" (1999: 212). Aida (1994) found that Japanese language

learners (M = 96.7) were slightly more anxious than Spanish language learners (M = 94.5) in Horwitz's (1986) study. Aida thought this result was understandable because "students may feel more anxious in learning a non-western, foreign language like Japanese than in learning commonly taught Western languages such as Spanish" (Aida 1994: 158). In short, these studies seem to suggest that students' foreign language anxiety may vary with the specific target language and for that reason, it may be advisable to include items addressing characteristics of the specific target language in the scale of foreign language anxiety.

In contrast, studies that have used the FLCAS as the measure of anxiety have suggested that there are no significant differences in foreign language anxiety levels among learners of different target languages (e.g. Saito, Horwitz and Garza 1999). This "against-common-sense" result may be due to the generic nature of the FLCAS, or due to the fact that the FLCAS mainly focuses on speaking anxiety.

Chinese is a relatively difficult foreign language for American students to learn (Walker 1989) and Chinese has a very high drop-out rate (MLA 2006). The survey conducted by Modern Language Association (MLA) shows that the differential in enrollments between lower-level and upper-level classes was dramatic. For every 9 students enrolled in first-year and second-year Chinese, there are only 2 students enrolled in an advanced Chinese course (MLA 2006).

Gardner, Moorcroft and MacIntyre's (1987) study regarding the second language performance of language dropouts revealed that dropouts had significantly higher levels of foreign language anxiety. In a study exclusively exploring the relationship between foreign language anxiety and student attrition, Bailey, Onwuegbuzie and Daley (2003) also found that learners with the highest levels of anxiety were more at risk for dropping out of their foreign language courses than their low-anxious counterparts. Therefore, anxiety might be a reason for the high drop-out rates of Chinese language classes and the difficulty level or the uniqueness of the Chinese language could possibly be a cause of anxiety. Due to its tonal nature and character-based writing system, the Chinese language is very different from English and other alphabetic languages, so learners may experience unique anxieties associated with speaking, comprehending, reading, and writing Chinese. Therefore, an anxiety measure that addresses the uniqueness of the Chinese language might be able to help Chinese language instructors to a greater degree.

As many existing studies (e.g. Saito, Horwitz and Garza 1999, Kim 2000, Cheng, Horwitz and Schallert 1999, Cheng 2004) have suggested that speaking, listening, reading, and writing anxieties in foreign language learning are
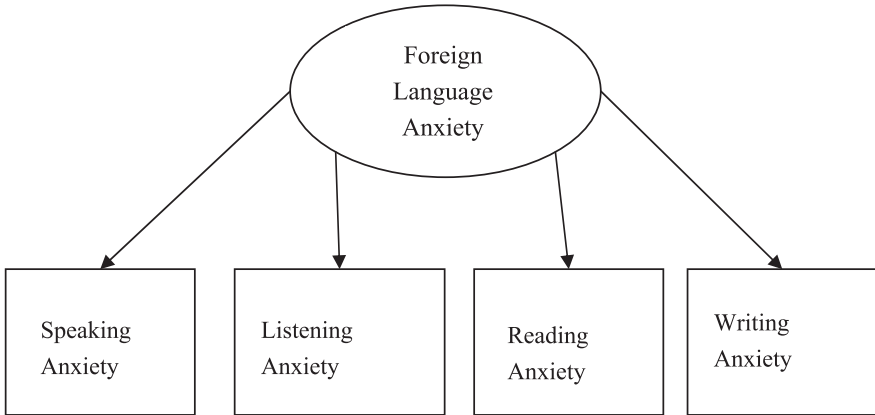
Fig. 1: The four-component construct of foreign language anxiety

distinguishable, the present study views the construct of foreign language anxiety as having four components: speaking anxiety, listening anxiety, reading anxiety, and writing anxiety (see Figure 1).

The goal of the present study is to construct a reliable and valid Chinese Language Learning Anxiety Scale, which reflects the four components of foreign language anxiety and addresses the unique characteristics of the Chinese language.

2 Scale development

The scale development process consisted of the following three phases: 1) generation of an initial pool of items; 2) consultation with experts for content validity of the items; 3) administration of the revised pool of items to Chinese language learners for item analysis and tests of the reliability and validity of the scale.

2.1 Phase 1: Generation of the initial pool of items

In order to generate an initial pool of items for the Chinese Language Anxiety Scale, the researcher interviewed eight Chinese language instructors and eleven Chinese language learners (including heritage and non-heritage learners, learners of three proficiency levels, and learners of different anxiety levels) from a

large public university in the Southwestern U.S. about their perceptions of Chinese language learning anxiety. The four-component construct of foreign language anxiety was used as a guide for selecting items from existing scales and generating new items based on the interviews.

Since the FLCAS has been the most frequently used scale for measuring foreign language anxiety, and its items mainly address anxiety associated with speaking, all the items reflective of speaking anxiety for the present scale were adapted from the FLCAS.

MacIntyre (1992) proposed a shorter form of the FLCAS, which included eight items (items 2, 9, 13, 16, 20, 27, 18, 23) with corrected item-total correlations higher than .70. The shorter form of the FLCAS was reported to have a high internal consistency of .93 (using Cronbach's alpha coefficient), a result consistent with the reliability found for the original 33-item scale. A series of validity tests showed that the shorter form of the FLCAS was a valid measure of foreign language anxiety and could be used interchangeably with the long version of the FLCAS (MacIntyre 1992). The eight items in the short form of the FLCAS are listed below:

2. ***I don't worry about making mistakes in language class.***
9. *I start to panic when I have to speak without preparation in language class.*
13. *It embarrasses me to volunteer answers in my language class.*
16. ***Even if I am well prepared for language class, I feel anxious about it.***
20. *I can feel my heart pounding when I'm going to be called on in language class.*
27. *I get nervous and confused when I am speaking in my language class.*
18. *I feel confident when I speak in foreign language class.*
23. *I always feel that the other students speak the foreign language better than I do.*

A close look at items 2 and 16 shows that these two items tap general anxiety in foreign language class rather than speaking anxiety. Therefore, for the specific purpose of this study, item 2 and item 16 were replaced by two other items addressing speaking anxiety from the FLCAS, i.e., item 24 *"I feel very self-conscious about speaking the foreign language in front of other students"* and item 31 *"I am afraid that the other students will laugh at me when I speak the foreign language"*. Both items 24 and 31 had high loadings (.78 and .75 respectively) in MacIntyre's (1992) item analysis of the FLCAS. In addition, statements similar to items 24 and 31 were frequently mentioned by the CFL instructors and learners in the preliminary interviews conducted by the researcher. Therefore, the eight items (items 24, 9, 13, 31, 20, 27, 18, 23) in the FLCAS were adopted to reflect speaking anxiety except that "language class" and "the foreign language" were rephrased into "the Chinese class" and "Chinese" respectively.

As for the component of listening anxiety, the following 6 items formed the initial pool:

1. *It frightens me when I don't understand what the teacher is saying in Chinese.*
2. *I have difficulty understanding oral instructions given to me in Chinese.*
3. *I get anxious when I don't understand what my classmates are saying in Chinese.*
4. *I get nervous when I feel all the Chinese tones sound the same to me.*
5. *I get frustrated when I cannot distinguish among the Chinese tones even after a lot of practice.*
6. *I would feel much more at ease when listening to non-tonal languages than listening to Chinese.*

The first item in the above list was taken from the FLCAS. It has been reported to be a good item with high loadings (Aida 1994, MacIntyre 1992). The second item was adapted from Kim's (2000) Foreign Language Listening Anxiety Scale. Items 3–6 were new items written by the researcher based on the preliminary interviews with CFL learners and instructors. Among these items, items 4–6 integrated the characteristics of the Chinese language, with items 4–5 addressing Chinese tones and item 6 comparing Chinese to non-tonal languages.

Similar to the component of listening anxiety, the initial pool for reading anxiety also had 6 items, which are listed below.

1. *I feel confident when I am reading in Chinese.*
2. *I feel intimidated whenever I see a whole page of Chinese in front of me.*
3. *When I'm reading Chinese, I get so confused I can't remember what I'm reading.*
4. *I get frustrated when I do not recognize the Chinese characters in a reading test.*
5. *I have difficulty distinguishing among the Chinese characters when reading Chinese.*
6. *I would feel much more at ease when reading alphabetic languages than in Chinese.*

The first three items addressing anxiety caused by reading Chinese were adapted from the Foreign Language Reading Anxiety Scale (Saito, Garza and Horwitz 1999). Items 4–6 were written by the researcher based on the preliminary interviews with CFL learners and instructors. Items 4–6 incorporated the characteristics of the Chinese language, with items 4–5 addressing Chinese Characters and item 6 comparing Chinese to alphabetic languages.

Among the 6 tentative items for writing anxiety (see the list below), the first item was adapted from Cheng's (2004) Second Language Writing Anxiety Scale. Items 2–6 were written by the researcher based on the preliminary interviews with CFL learners and teachers. As can be seen, items 1, 4 and 6 took

into consideration the uniqueness of Chinese characters and item 5 compared learners' feelings towards Chinese and alphabetic languages in terms of writing.

1. *I freeze up when unexpectedly asked to write Chinese characters.*
2. *I'm usually at ease when I'm writing in Chinese.*
3. *I feel unsure of myself when I'm writing in Chinese.*
4. *I get anxious when I forget how to write a Chinese character in a Chinese test.*
5. *I would feel much less anxious when writing in alphabetic languages than in Chinese.*
6. *I get confused with the stroke order when I write Chinese characters.*

Altogether, the initial pool of items for the Chinese Language Learning Anxiety Scale included 26 items. The component of speaking anxiety had 8 items, which were all adapted from the FLCAS, and the components of listening, reading, and writing anxiety each had 6 items, which were either adapted from existing anxiety scales or written by the researcher based on the preliminary interviews with CFL instructors and learners.

2.2 Phase 2: Consultation of experts for content validity

The initial pool of 26 items was then sent to 5 experts for content validity review. Four of the experts have published extensively on foreign language anxiety and one of the experts is a leading scholar in the field of teaching Chinese as a foreign language, whose research focuses on affective factors of CFL learning. When the items were sent to the experts, they were grouped into four subscales representative of speaking, listening, reading, and writing anxiety. The rationale behind these items and the four subscales was explained to the experts. The experts were requested to evaluate the appropriateness of all the 26 items as indicators of Chinese Language Learning Anxiety and the items within each subscale as indicators of the intended component. The experts were also invited to add, delete or revise the items if necessary.

Each of the five experts provided advice on rephrasing or rewording of some of the items. The researcher revised the wording of relevant items based on the experts' suggestions. One expert had doubts about an item concerning writing anxiety: *I get confused with the stroke order when I write Chinese characters*. One expert suggested adding an item for writing anxiety: *Writing Chinese characters makes me forget what I'm trying to convey*. Another expert advised adding an item addressing CFL learners' anxiety when speaking to native speakers: *I would not be nervous speaking Chinese with native speakers*.

The researcher then replaced the item: *I get confused with the stroke order when I write Chinese characters* with the item suggested by one of the experts: *Writing Chinese characters makes me forget what I'm trying to convey,* and added the item addressing anxiety when speaking to native speakers. It is worth mentioning that eight out of eleven Chinese language learners in the preliminary interviews expressed that they were anxious when speaking to native speakers.

As a result, 27 items approved by all the 5 experts remained in the scale, with 9 items addressing speaking anxiety and 6 items reflective of listening, reading and writing anxiety respectively. Following the experts' advice, the researcher organized the items in such a way that two items reflective of the same component were not listed one after the other. The 27 items with the new order can be found in Appendix A. Among the 27 items, 4 items (items 8, 16, 21, 27) were negatively phrased.

2.3 Phase 3: Item analysis and tests of reliability and validity

The 27-item Chinese Language Learning Anxiety Scale together with a background questionnaire was administered to 447 Chinese language learners at two large public universities in the United States. Responses from the participants were used to conduct item analysis, reliability analyses, validity analyses, and cross-validation analyses. For all the statistical analyses involved in this study, SPSS 18 was used.

Data collection. With the instructors' permission, the questionnaires were administered by the researcher during a regular class session. The students were told that all the information they would provide was for research purposes only and would be kept confidential. The survey was anonymous and their participation was voluntary. No incentives (monetary or extra course-credit) were offered. Answering the questionnaire took approximately 5 minutes. Altogether 447 questionnaires were distributed, among which 19 questionnaires were incomplete. Thus, 428 (95.7%) questionnaires were used for data analysis.

Participants. 428 (225 males, 202 females; 1 missing the gender indication) Chinese language learners at two large public U.S. universities participated in this study. One university is in southwestern U.S. and the other is in midwestern U.S. 245 participants were from the southwestern university, while 183 participants were from the midwestern university. These participants had an age range of 15 to 59 ($M = 20.9$, $SD = 3.9$). They were taking credit-bearing Chinese language courses at the two universities.

Among the 428 participants, 234 (54.7%) participants were taking first-year Chinese, 118 (27.6%) were taking second-year Chinese, and 76 (17.8%) were advanced learners taking third-year Chinese. 188 (43.9%) of the participants were white, 155 (36.2%) were Chinese American, 36 (8.6%) were Asian but not Chinese American, 23 (5.4%) were Asian international students, 16 (3.7%) were Hispanic, 1 (0.2%) was African American, and 8 (1.9%) were from other ethnic backgrounds. 211 (49.0%) participants were taking Chinese as an elective course and the rest 217 (51%) participants were taking it as a required course. There were 65 (15.2%) freshmen, 117 (27.3%) sophomores, 126 (29.4%) juniors, 105 (24.5%) seniors, 7 (1.6%) graduate students, and 8 (1.9%) participants who indicated other categories.

171 (40%) participants indicated that they had at least one parent whose native language was a variety of Chinese. Among the 171 participants, 32 participants had one parent whose native language was a variety of Chinese, and 139 participants had both parents whose native language was a variety of Chinese.

Instruments. Participants were asked to fill out a two-part survey. The survey was a combination of the 27-item Chinese Language Learning Anxiety Scale and a Background Questionnaire designed by the researcher. Similar to the FLCAS, the Chinese Language Learning Anxiety Scale was a self-report measure that consisted of items scored on a 5-point Likert scale, ranging from *strongly agree* to *strongly disagree*. Four items (item 8, 16, 21 & 27) were negatively phrased, which were reversely coded in data entry.

The background questionnaire elicited participants' background information such as gender, age, major, minor, ethnicity, year of study at college, years of studying Chinese, native language, parents' native languages, other foreign languages that had been studied, whether taking this course as an elective or requirement, whether or not they understood or spoke any variety of Chinese before taking any Chinese classes, whether or not they had studied Chinese before coming to the university, whether or not they expected to use Chinese in the next few years, etc.. The participants were also asked to give a grade they expected to get for the Chinese course and to rate their language learning ability, their expectation in terms of learning Chinese, perception of the importance of Chinese, perception of their general anxiety level in Chinese class, perception of the difficulty of the Chinese language, and their motivations towards learning to speak, understand, read, and write Chinese on a 1–5 scale.

Reliability analysis. The internal consistency reliability tests for the 27-item Chinese Language Learning Anxiety Scale and its four subscales, using Cronbach's

Alpha (including corrected item-total correlations and Cronbach's Alpha if item deleted) were performed on responses from all the 428 participants.

Results showed that the internal consistency reliability of the 27 items was .93. The item-total correlation and the Cronbach's Alpha if Item Deleted for item 27 was .37 and .932 respectively, indicating item 27 is a potentially poor item. The internal consistency reliability of the 9-item Speaking Anxiety subscale (Items 1, 5, 9, 13, 17, 21, 23, 25, 27) was .90. The Cronbach's Alpha if Item Deleted for item 27 in this subscale was .91, providing further evidence that item 27 may need to be deleted from the scale.

The internal consistency reliability of the 6-item Listening Anxiety subscale (items 2, 6, 10, 15, 18, 20) was .83. and the Cronbach's Alpha if Item Deleted for item 18 is as high as .83. The internal consistency reliability of the 6-item Reading Anxiety subscale (items 3, 7, 11, 14, 16, 22) was .81, but the Cronbach's Alpha if Item Deleted value for item 22 was also .81. The internal consistency reliability of the 6-item Writing Anxiety subscale (items 4, 8, 12, 19, 24, 26) was .80 and the Cronbach's Alpha if Item Deleted values for item 26 is also as high as .80. These results indicate that items 18, 22, and 26 are potentially poor items for the three subscales respectively.

Exploratory factor analysis (EFA). EFA was first performed on responses of the 183 participants from the midwestern university for item analysis and for the test of construct validity of the scale under development. Responses of the 245 participants from the southwestern university were saved for the purpose of cross-validation.

Before EFA was performed, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy[2] and Bartlett's Test of Sphericity were computed to determine whether EFA was an appropriate procedure with the current data. The results (KMO = .917 > .5, p = .0001 for Bartlett's test) showed that EFA was appropriate. According to the 5–10 participants per item criterion, the sample size (183 > 27 × 5 = 135) for this EFA study was considered adequate.

Specifically, the Principal Axis Factoring method of extraction was utilized to examine the factor structure of the 27 items in the scale. A variety of criteria were used to determine the number of common factors to retain, including the eigenvalue >1 criterion, the scree plot test (see Figure 2), and the conceptual interpret-

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2 The Kaiser-Meyer-Olkin measure of sampling adequacy tests whether the partial correlations among variables are small. Usually, the KMO should be greater than 0.5 for a satisfactory factor analysis to proceed. Bartlett's test of sphericity tests whether the correlation matrix is an identity matrix, which would indicate that the factor model is inappropriate.
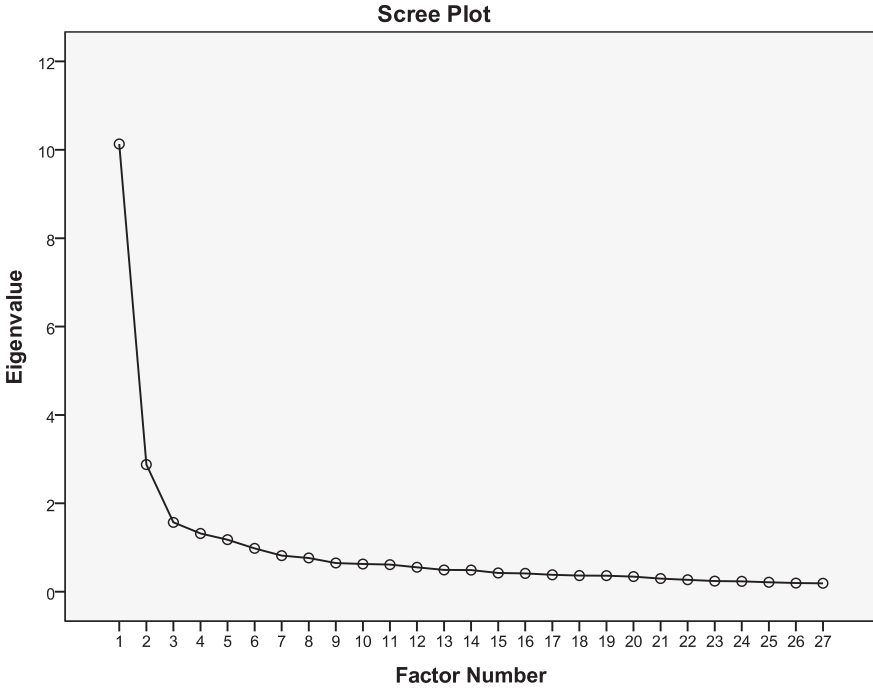
Fig. 2: Scree Plot

ability of the factor structure. These criteria suggested the adequacy of extracting 4 factors. The four-factor solution accounted for 52.11% of the common variance.

Since Speaking Anxiety, Listening Anxiety, Reading Anxiety, and Writing Anxiety are generally expected to covary, an oblique rotation (Oblimin) was employed to increase the interpretability of the factors. Table 1 presents the communalities of the 27 items and the pattern matrix with item loadings to the extracted factors. The loadings from the rotated pattern matrix are conceptually similar to standardized regression coefficients and indicate the importance of a variable to a factor with the influence of other variables partialled out (Stevens 1996: 370, Cheng 2004: 325).

In this study, a factor loading of .40 was used as a cut-off for inclusion. When an item cross-loaded to more than one factor, the item was deleted if the difference between the loadings was less than .15. Otherwise, the item was kept and assigned to the factor with the highest loading. Items with extracted communality less than .4 were deleted.

As shown in Table 1, the extracted communalities for item 26 and item 27 were .289 and .251 (<.40), which indicated that the two items should be deleted.

Table 1: Results of Factor Analysis

	Communalities		Pattern Matrix			
	Initial	Extraction	Factor 1	Factor 2	Factor 3	Factor 4
item1	.634	.617	.229	.043	.076	−.599
item2	.557	.479	.483	.143	.032	−.201
item3	.545	.543	−.126	.710	−.049	−.186
item4	.518	.505	−.154	.701	.019	−.107
item5	.636	.685	−.179	.073	.082	−.853
item6	.491	.342	.502	−.032	.148	−.059
item7	.479	.417	.381	.407	.080	.089
item8	.446	.407	−.028	.485	.299	.089
item9	.590	.610	−.018	.086	−.146	−.777
item10	.547	.456	.614	−.100	.055	−.133
item11	.534	.486	.095	.655	.020	.013
item12	.616	.700	−.069	.244	.731	.040
item13	.712	.719	.203	.026	.141	−.665
item14	.455	.460	.134	.643	.045	.119
item15	.591	.507	.584	.279	−.089	−.029
item16	.582	.482	.088	.551	.166	−.027
item17	.474	.463	.029	−.007	−.061	−.679
item18	.506	.500	.221	−.101	.589	−.147
item19	.607	.567	.034	.643	−.041	−.217
item20	.563	.506	.460	.197	−.146	−.287
item21	.677	.606	.149	−.048	.222	−.628
item22	.639	.710	−.102	.186	.770	−.013
item23	.630	.594	.371	.207	.137	−.313
item24	.619	.559	.056	.615	.146	−.067
item25	.622	.612	.124	.021	.023	−.697
item26	.459	.289	.187	.398	.054	−.026
item27	.312	.251	.197	.044	.227	−.212

Extraction Method: Principal Axis Factoring.

Moreover, the highest loadings for items 26 and 27 were .398 and .227 (<.40), providing further evidence that the two items were poor items. The highest loading for item 23 was .371, suggesting that it should also be removed from the scale.

Table 2 shows the factor loadings from the rotated pattern matrix. In order to focus on the salient loadings, loadings less than .40 in absolute value were blanked out and items with cross-loadings were assigned to the factor with the highest loading if the loading difference was more than .15.

Table 2: Oblimin Rotated Factor Pattern

Items	Factor 1	Factor 2	Factor 3	Factor 4
2. *I have difficulty understanding oral instructions given to me in Chinese.*	.483			
6. *I get frustrated when I cannot distinguish among the Chinese tones even after I have worked hard to learn them.*	.502			
10. *I get nervous when all the Chinese tones sound the same to me.*	.614			
15. *I get anxious when I don't understand what my classmates are saying in Chinese.*	.584			
20. *It frightens me when I don't understand what the teacher is saying in Chinese.*	.460			
3. *When I'm reading Chinese, I get so confused I can't remember what I'm reading.*		.710		
4. *Writing Chinese characters makes me forget what I'm trying to convey.*		.701		
7. *I get frustrated when I do not recognize the Chinese characters on a reading test.*		.407		
8. *I'm usually at ease when I'm writing in Chinese.*		.485		
11. *I feel intimidated whenever I see a whole page of Chinese in front of me.*		.655		
14. *I have difficulty distinguishing among Chinese characters when reading Chinese.*		.643		
16. *I feel confident when I am reading in Chinese.*		.551		
19. *I freeze up when I am unexpectedly asked to write Chinese characters during my Chinese class.*		.643		
24. *I feel unsure of myself when I'm writing in Chinese.*		.615		
12. *I would feel much less anxious when writing in an alphabetic language (e.g. Spanish, French, German) than when writing in Chinese.*			.731	

Table 2 (cont.)

Items	Factor 1	Factor 2	Factor 3	Factor 4
18. *I would feel much more at ease when trying to comprehend a non-tonal language (e.g. Spanish, French, German) than Chinese.*			.589	
22. *I would feel much more at ease when reading an alphabetic language (e.g. Spanish, French, German) than when reading Chinese.*			.770	
1. *I start to panic when I have to speak without preparation in my Chinese class.*				.599
5. *It embarrasses me to volunteer answers in my Chinese class.*				.853
9. *I can feel my heart pounding when I'm going to be called on in my Chinese class.*				.777
13. *I get nervous and confused when I am speaking in my Chinese class.*				.665
17. *I am afraid that the other students will laugh at me when I speak Chinese.*				.679
21. *I feel confident when I speak in my Chinese class.*				.628
25. *I feel very self-conscious about speaking Chinese in front of other students.*				.697

As can be seen from Table 2, items 2, 6, 10, 15, and 20 loaded on Factor 1; Items 3, 4, 7, 8, 11, 14, 16, 19, and 24 loaded on Factor 2; Items 12, 18 and 22 loaded on Factor 3, and items 1, 5, 9, 13, 17, 21, and 25 loaded on Factor 4.

A close examination of the items under each factor showed, all the five items loaded on Factor 1 were associated with anxiety while listening to Chinese; the nine items for Factor 2 all reflected anxious feelings towards reading or writing Chinese; the three items for Factor 3 tapped learners' anxiety specifically associated with learning Chinese in comparison with alphabetic or non-tonal languages; the 7 items loaded on Factor 4 all addressed emotional reactions towards speaking Chinese. Therefore, the four factors were referred to as "Listening Anxiety", "Reading & Writing Anxiety", "Chinese-specific Anxiety", and "Speaking Anxiety" respectively.

Considering "Chinese-specific Anxiety" does not fit into the four-component construct of foreign language anxiety proposed in this study, and, as discussed

previously, items 18 and 22 were potentially poor items for the subscales of listening and reading anxiety respectively, the researcher decided to remove Factor 3 (items 12, 18 and 22) from the final Chinese Language Learning Anxiety Scale.

In addition, the researcher decided to keep 4 items for each skill so that the final Chinese Language Learning Anxiety Scale was evenly distributed among the four skills. Items with the highest loadings remained in the final scale with some exceptions. For the Listening Anxiety subscale, item 2 (*I have difficulty understanding oral instructions given to me in Chinese*) instead of item 20 (*It frightens me when I don't understand what the teacher is saying in Chinese*) was deleted because many participants commented that the statement of item 2 did not apply to their class as their Chinese teachers spoke English when giving instructions. For the Speaking Anxiety subscale, item 21 (*I feel confident when I speak in my Chinese class*) instead of item 17 (*I am afraid that the other students will laugh at me when I speak Chinese*) was retained because the researcher wanted to keep several negatively phrased items in the final scale.

Therefore, 16 items (items 3, 4, 5, 6, 8, 9, 10, 11, 14, 15, 16, 19, 20, 21, 24, 25) were retained in the final Chinese Language Learning Anxiety Scale (see Appendix B), with items 5, 9, 21, 25 reflective of Speaking Anxiety, items 6, 10, 15, 20 representing Listening Anxiety, and items 3, 11, 14, 16, 4, 8, 19, 24 addressing Reading & Writing Anxiety.

Cross-validation. For the purpose of cross-validation, EFA was performed the second time, but on responses to the final 16 items from the 245 participants at the southwestern university. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (.887) and Bartlett's Test of Sphericity ($p < .0001$) indicated that EFA was an appropriate analysis with the current data. According to the 5–10 participants per item rule, the sample size (n = 245 > 16 × 10 = 160) for the EFA analysis was considered adequate.

Similar to the first EFA, the Principal Axis Factoring method of extraction was employed to examine the factor structure of the 16-item scale. A variety of criteria were used to determine the number of common factors to retain, including the eigenvalue >1 criterion, the scree plot test (see Figure 3), and the conceptual interpretability of the factor structure. Since anxieties associated with speaking, listening, reading, and writing tend to covary, an oblique rotation (Oblimin) was utilized to increase interpretability of the factors. For the present analysis, these criteria suggested the adequacy of extracting 3 factors, which accounted for 52.8% of the common variance.

For easy reading, items 5, 9, 21, 25 for the Speaking Anxiety subscale were recoded as Y1, Y2, Y3, Y4 respectively; items 6, 10, 15, 20 reflective of Listening Anxiety were recoded as Y5, Y6, Y7, Y8; items 3, 11, 14, 16 representing Reading
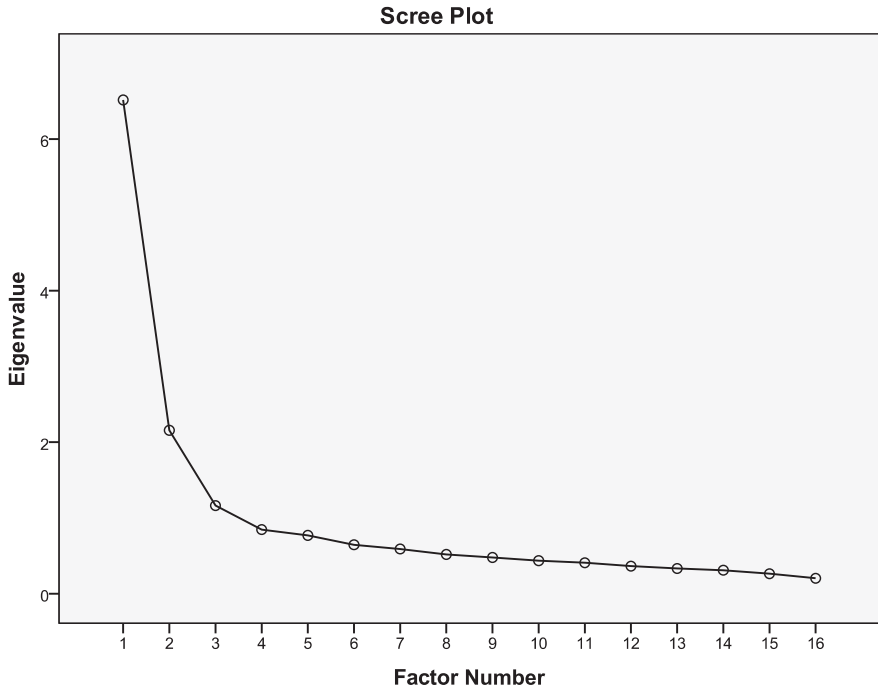
Scree Plot

Fig. 3: Scree plot for cross-validation

Anxiety were recoded as Y9, Y10, Y11, Y12; and items 4, 8, 19, 24 for Writing Anxiety were recoded as Y13, Y14, Y15, Y16. Table 3 presents the communalities of the 16 items and the pattern matrix with loadings of each item to the extracted factors. As can be seen from Table 3, the extracted communalities for all 16 items were greater than .40, the highest loadings to the three factors for all the 16 items were greater than .50, and no items had a cross-loading difference lower than .15.

In order to focus on the salient loadings, the researcher sorted out the factor loadings from the above rotated pattern matrix by assigning items with cross-loadings to the factor with the highest loading. The results are shown in Table 4. The cross-validation analysis with the 16 items yielded three factors. A close examination of the items for each factor showed that exactly the same items loaded on these factors as the previous EFA test did.

Y1, Y2, Y3, and Y4 (previously labeled as items 5, 9, 21, 25) loaded on Factor 2, Speaking Anxiety; Y5, Y6, Y7, and Y8 (previously labeled as Items 6, 10, 15, 20) loaded on Factor 3, Listening Anxiety; Y9, Y10, Y11, Y12, Y13, Y14, Y15, and Y16 (previously labeled as items 3, 11, 14, 16, 4, 8, 19 and 24) loaded on Factor 1, Reading & Writing Anxiety. The results of the cross-validation analysis were consistent

Table 3: Results of EFA for cross-validation

	Communalities		Pattern matrix		
	Initial	Extraction	Factor 1	Factor 2	Factor 3
Y1	.541	.596	.188	−.641	−.076
Y2	.447	.499	.138	−.654	.010
Y3	.540	.509	.009	−.573	−.219
Y4	.557	.691	−.158	−.775	−.178
Y5	.561	.519	.111	−.016	−.658
Y6	.642	.613	.141	−.103	−.653
Y7	.591	.596	.018	−.090	−.714
Y8	.541	.560	−.065	−.227	−.634
Y9	.418	.449	.608	.161	−.215
Y10	.519	.548	.645	.086	−.236
Y11	.521	.511	.663	.036	−.131
Y12	.551	.445	.611	−.133	.000
Y13	.429	.418	.641	.001	−.015
Y14	.395	.452	.716	.001	.125
Y15	.556	.588	.528	−.272	−.157
Y16	.437	.457	.629	−.229	.143

with those of the first EFA analysis. The factor-extraction results of both EFA tests provided support for the construct validity of the Chinese Language Learning Anxiety Scale under development. However, as items for Reading Anxiety and Writing Anxiety loaded on to the same factor, the EFA results seem to suggest that Chinese Language Learning Anxiety has three rather than four subcomponents.

The internal consistency reliability tests were performed on responses to the final 16 items from the 245 participants from the southwestern university. The internal consistency reliabilities for the final Chinese Language Learning Anxiety Scale and the three subscales were .90, .83, .84 and .87 respectively. The correlations among the three subscales were .61 (Speaking & Listening), .45 (Speaking & RW), and .51 (Listening & RW), with all the correlations significant at $p = .0001$. These correlation results suggest that anxieties associated with the four skills, though related, are distinguishable from one another, which were consistent with the findings of earlier studies (e.g. Kim 2000, Saito, Horwitz and Garza 1999, Cheng 2004).

Validity analysis. As mentioned above, the results of the EFA analysis performed on responses from the 183 participants at the midwestern university and the cross-validation analysis performed on responses from the 245 participants at the

Table 4: Oblimin rotated factor pattern for cross-validation

Items	Factor 1	Factor 2	Factor 3
Y1. *It embarrasses me to volunteer answers in my Chinese class.*		.641	
Y2. *I can feel my heart pounding when I'm going to be called on in my Chinese class.*		.654	
Y3. *I feel confident when I speak in my Chinese class.*		.573	
Y4. *I feel very self-conscious about speaking Chinese in front of other students.*		.775	
Y5. *I get frustrated when I cannot distinguish among the Chinese tones even after I have worked hard to learn them.*			.658
Y6. *I get nervous when all the Chinese tones sound the same to me.*			.653
Y7. *I get anxious when I don't understand what my classmates are saying in Chinese.*			.714
Y8. *It frightens me when I don't understand what the teacher is saying in Chinese.*			.634
Y9. *When I'm reading Chinese, I get so confused I can't remember what I'm reading.*	.608		
Y10. *I feel intimidated whenever I see a whole page of Chinese in front of me.*	.645		
Y11. *I have difficulty distinguishing among Chinese characters when reading Chinese.*	.663		
Y12. *I feel confident when I am reading in Chinese.*	.611		
Y13. *Writing Chinese characters makes me forget what I'm trying to convey.*	.641		
Y14. *I'm usually at ease when I'm writing in Chinese.*	.716		
Y15. *I freeze up when I am unexpectedly asked to write Chinese characters during my Chinese class.*	.528		
Y16. *I feel unsure of myself when I'm writing in Chinese.*	.629		

southwestern university both provided evidence for the construct validity of the final 16-item Chinese Language Learning Anxiety Scale.

Correlation analyses between the Chinese Language Learning Anxiety Scale (including its three subscales) and other anxiety-related measures were conducted to examine the convergent and discriminant validity of the Chinese Language Learning Anxiety Scale (and its subscales). These correlation analyses were performed on responses from all the participants (i.e. the 428 participants

from the two universities). The other anxiety-related measures included the 8-item short form of the FLCAS (i.e., the CFL Classroom Anxiety Scale), the one-item General CFL Anxiety measure in the Background Questionnaire created by the researcher, and the three-item Chinese-specific Anxiety measure (items 12, 18, 22) specifically addressing anxiety associated with the Chinese language created by the researcher.

The correlations between Chinese Language Learning Anxiety and General CFL Anxiety, CFL Classroom Anxiety, and Chinese-specific Anxiety were .70, .80 and .53 respectively, and these correlations were all significant (p = .0001). These correlations mean that 49%, 64.5%, and 27.9% of the variance in Chinese Language Learning Anxiety could be explained by the above-mentioned three anxieties respectively, which provided support for the convergent validity of the Chinese Language Learning Anxiety Scale. At the same time, 51%, 35.5%, and 72.1% of the variance in Chinese Language Learning Anxiety could not be accounted for by the three anxiety measures, supporting the discriminant validity of the Chinese Language Learning Anxiety Scale.

It should be noted that Chinese Language Learning Anxiety as measured by the Chinese Language Learning Anxiety Scale under development was strongly correlated to CFL Classroom Anxiety as measured by the short form of the FLCAS (r = .80), indicating that the short form of the FLCAS may be used to roughly estimate Chinese language learners' anxiety in Chinese classes.

Speaking Anxiety, Listening Anxiety, and Reading & Writing Anxiety as measured by the three subscales were all significantly correlated with General CFL anxiety, CFL Classroom Anxiety, and Chinese-specific Anxiety (p = .0001). The correlations between Speaking Anxiety and the three anxieties were .61, .96, .28 respectively; the correlations between Listening Anxiety and the three anxieties were .53, .65, .41 respectively; the correlations between Reading & Writing Anxiety and the three anxieties were .58, .47, .53 respectively. Understandably, the correlation between Speaking Anxiety and CFL Classroom Anxiety was very strong (r = .964), as the items in the Speaking Anxiety subscale were adapted from the FLCAS.

The above-mentioned significant correlations between the three subcomponents of Chinese Language Learning Anxiety and the other three anxiety-related measures showed that some portion of variance in CFL Speaking, Listening, and Reading & Writing Anxiety could be explained by the three anxieties, lending support for the convergent validity of the three subscales. At the same time, some portion of variance in CFL Speaking, Listening, and Reading & Writing Anxiety could not be accounted for by the three anxieties, showing that the three subcomponents of Chinese Language Learning Anxiety were distinguishable from the three anxieties and the three subscales have good discriminant validity.

Correlation analysis was also conducted with a criterion-related variable, i.e., the grades learners expected to receive in the Chinese class[3], to help establish criterion-related validity of the newly developed Chinese Language Learning Anxiety Scale and its subscales. Results showed that Chinese Language Learning Anxiety and its three subcomponents all had significant negative correlations with the grades learners expected to get in the Chinese class. The correlations between the grades and Chinese Language Learning Anxiety, Speaking Anxiety, Listening Anxiety, Reading & Writing Anxiety were −.41, −.30, −.25, and −.40 respectively ($p = .0001$), which provided support for the criterion-related validity for the Chinese Language Learning Anxiety Scale and its three subscales.

3 Conclusions, limitations and future studies

The goal of the present study is to develop a reliable and valid measure of Chinese Language Learning Anxiety. The present study adopts a four-component construct of foreign language anxiety, viewing foreign language anxiety as having four sub-dimensions associated with the four skills of foreign language learning. Compared to the FLCAS (Horwitz, Horwitz and Cope 1986), the most widely used scale for measuring foreign language anxiety, the Chinese Language Learning Anxiety Scale developed in this study is more concise, addresses anxieties associated with the four skills, and takes into account the unique characteristics of the Chinese language.

The scale development went through three major phases. The initial pool of scale items were based on existing anxiety scales and Chinese language instructors and learners' perceptions. Experts were consulted for the content validity of the initial pool. Items approved by all the experts were then administered to CFL learners for item analysis and tests of reliability and validity. EFA and cross-validation analyses showed that Chinese Language Learning Anxiety has three components: Speaking Anxiety, Listening Anxiety, and Reading & Writing Anxiety, a finding that provides evidence for the construct validity of the Chinese Language Learning Anxiety Scale. Results of reliability analyses and correlation analyses indicated that the final 16-item Chinese Language Learning Anxiety Scale and its three sub-scales have good internal consistency reliability, convergent and discriminant validity, and criterion-related validity.

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3 A large number of studies (e.g. Horwitz 1986, Aida 1994) have suggested that foreign language anxiety has a moderate negative correlation with grades learners expected to receive or actual grades in a foreign language class.

The high internal consistency reliability of the 16-item Chinese Language Learning Anxiety Scale indicates that this scale can be used to measure a unidimensional construct of Chinese Language Learning Anxiety when necessary. The three subscales can be used to measure CFL learners' anxieties specifically associated with speaking, listening, reading and writing in Chinese classes. In addition to measuring anxiety levels, the Chinese Language Learning Anxiety Scale can also be used for diagnostic purposes, such as identifying the most anxiety-provoking skill among CFL learners, finding out causes of anxious reactions in Chinese classes, etc.. With more specific knowledge on anxieties related to the four skills, researchers are more likely to clarify the relationships between anxiety and other learning variables such as motivation, language achievement which might be otherwise masked, and teachers are more likely to find ways to help learners reduce anxiety in learning Chinese. It is also hoped that the Chinese Language Learning Anxiety Scale developed in this study could work as a model for constructing anxiety scales specific to other foreign languages.

Although this study provides preliminary validation for the use of the Chinese Language Learning Anxiety Scale to measure anxiety in learning Chinese as a foreign language, caution should be taken.

First of all, the two universities are different from each other in many aspects such as textbooks, curriculum, the proportion of heritage learners with Chinese language background, and whether the Chinese program separates students with different amount of previous Chinese exposure, etc.. Anxiety experiences of CFL students in the U.S. may vary from university to university, or from state to state. Thus, more studies on participants from different universities or even from high schools need to be done to cross-validate the results of the present study.

Second, it should be noted that this study uses the one-item General CFL Anxiety measure, the three-item Chinese-specific Anxiety measure, and the eight-item shorter form of the FLCAS to establish the convergent and discriminant validity. Ideally, well-established measures of constructs other than anxiety are more desirable to provide discriminant validity evidence. It is recommended that more established measures of anxiety and other different constructs should be adopted to establish convergent and discriminant validity evidence for the Chinese Language Learning Anxiety Scale in the future.

Third, the number of Chinese heritage learners has been increasing in Chinese classes (Wen 2011). Due to their unique linguistic profiles and social identity, Chinese heritage learners have different psychological needs from traditional foreign language learners (e.g. He and Xiao 2008, Comanaru and Noels 2009), which could potentially affect their emotional reactions in Chinese language learning. For example, pressure from parents could be a source of anxiety for heritage learners. Heritage learners may feel pressed to learn Chinese well due to high

expectation of the instructor and classmates. However, the Chinese Language Learning Anxiety Scale developed in this study is mainly tailored to traditional foreign language learners' experiences. Future efforts may focus on a separate anxiety scale specifically designed for Chinese heritage language learners.

In addition, the present study only tests the internal consistency reliability of the Chinese Language Learning Anxiety Scale and its three subscales. It is advisable to test the test-retest reliability of these scales in future studies.

Furthermore, future studies could develop anxiety scales specific to other target languages and investigate whether anxiety in learning other languages has the same three components as the Chinese language.

Finally, it is also important for future studies to use Confirmatory Factor Analysis (CFA) or SEM techniques to cross-validate the findings of this study, to check group differences, and to compare different models of foreign language anxiety.

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Appendix A

The 27 items administered to participants

Directions: For each item, indicate whether you (1) strongly disagree (2) disagree (3) neither agree nor disagree (4) agree or (5) strongly agree.

1. I start to panic when I have to speak without preparation in my Chinese class.
2. I have difficulty understanding oral instructions given to me in Chinese.
3. When I'm reading Chinese, I get so confused I can't remember what I'm reading.
4. Writing Chinese characters makes me forget what I'm trying to convey.
5. It embarrasses me to volunteer answers in my Chinese class.

6. I get frustrated when I cannot distinguish among the Chinese tones even after I have worked hard to learn them.
7. I get frustrated when I do not recognize the Chinese characters on a reading test.
8. I'm usually at ease when I'm writing in Chinese.
9. I can feel my heart pounding when I'm going to be called on in my Chinese class.
10. I get nervous when all the Chinese tones sound the same to me.
11. I feel intimidated whenever I see a whole page of Chinese in front of me.
12. I would feel much less anxious when writing in an alphabetic language (e.g. Spanish, French, German) than when writing in Chinese.
13. I get nervous and confused when I am speaking in my Chinese class.
14. I have difficulty distinguishing among the Chinese characters when reading Chinese.
15. I get anxious when I don't understand what my classmates are saying in Chinese.
16. I feel confident when I am reading in Chinese.
17. I am afraid that the other students will laugh at me when I speak Chinese.
18. I would feel much more at ease when trying to comprehend a non-tonal language (e.g. Spanish, French, German) than when trying to comprehend Chinese.
19. I freeze up when I am unexpectedly asked to write Chinese characters during my Chinese class.
20. It frightens me when I don't understand what the teacher is saying in Chinese.
21. I feel confident when I speak in my Chinese class.
22. I would feel much more at ease when reading an alphabetic language (e.g. Spanish, French, German) than when reading Chinese.
23. I always feel that the other students speak Chinese better than I do.
24. I feel unsure of myself when I'm writing in Chinese.
25. I feel very self-conscious about speaking Chinese in front of other students.
26. I get anxious when I forget how to write a Chinese character on a Chinese test.
27. I would not be nervous speaking Chinese with native speakers.

Appendix B

The 16 Items in the final Scale

1. When I'm reading Chinese, I get so confused I can't remember what I'm reading.

2. Writing Chinese characters makes me forget what I'm trying to convey.
3. It embarrasses me to volunteer answers in my Chinese class.
4. I get frustrated when I cannot distinguish among the Chinese tones even after I have worked hard to learn them.
5. I'm usually at ease when I'm writing in Chinese.
6. I can feel my heart pounding when I'm going to be called on in my Chinese class.
7. I get nervous when all the Chinese tones sound the same to me.
8. I feel intimidated whenever I see a whole page of Chinese in front of me.
9. I have difficulty distinguishing among the Chinese characters when reading Chinese.
10. I get anxious when I don't understand what my classmates are saying in Chinese.
11. I feel confident when I am reading in Chinese.
12. I freeze up when I am unexpectedly asked to write Chinese characters during my Chinese class.
13. It frightens me when I don't understand what the teacher is saying in Chinese.
14. I feel confident when I speak in my Chinese class.
15. I feel unsure of myself when I'm writing in Chinese.
16. I feel very self-conscious about speaking Chinese in front of other students.

Note: Items 3, 6, 14, 16 reflective of Speaking Anxiety; items 4, 7, 10, 13 indicative of Listening Anxiety; Items 1, 8, 9, 11 reflective of Reading Anxiety; items 2, 5, 12, 15 indicative of Writing Anxiety.

Bionote

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