外語焦慮與英語線上學習者滿意度量表的驗證
及兩者之間關係的探討

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摘要

　　本研究目的有三：1. 驗證外語焦慮量表及英語線上學習者滿意度量表的效度與信度；2.了解英語線上學習者的外語焦慮；3.探討外語焦慮與英語線上學習者滿意度的關係。有 178 位選修線上英語的大學生（男生 54 位，女生 124 位）有效地填完外語焦慮量表及英語線上學習者滿意度量表。因素分析及信度分析結果顯示：外語焦慮量表包含兩個因素（聽力和閱讀焦慮，及口說和寫作焦慮），並解釋量表的 70.01%.之變異量，其信度為 .96；英語線上學習者滿意度量表包含兩個因素（對媒體的滿意及對課程的滿意），並解釋量表的 66.84%之變異量，其信度為 .93。敘述統計分析顯示：英語線上學習者的口說和寫作焦慮高於聽力和閱讀焦慮;英語線上學習者特別對發音、字彙和文法的使用深感焦慮。相關分析顯示：英語線上學習者的聽力和閱讀焦慮、口說和寫作焦慮均與英語線上學習者滿意度有顯著的正相關。本研究結果可提供外語線上教學的參考。

關鍵字：線上英語，外語焦慮，英語線上學習者滿意度

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Psychometric Analysis and Empirical Study of the Relationship between Foreign Language Anxiety and EFL Online Learner Satisfaction

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Abstract

This study validated the Chinese versions of the Foreign Language Anxiety Scale (FLAS) and Online Learner Satisfaction Scale (OLSS), investigated the profile of foreign language anxiety faced by the college EFL online learners, and explored the relationship between foreign language anxiety and EFL online learner satisfaction. We collected data from a questionnaire administered to 178 college EFL students (54 males, 124 females) taking online English at a Taiwanese university. The Cronbach's alpha reliability coefficient for FLAS was .96 and for OLSS was .93. For FLAS, principal component analysis (PCA) resulted in a two-factor (listening & reading anxiety, and speaking & writing anxiety) solution that accounted for 70.01% of the variance. Regarding OLSS, PCA resulted in a two-factor (satisfaction with the medium and satisfaction with the course) solution that accounted for 66.84% of the variance. Descriptive statistics analysis showed that the participants reported higher scores on speaking & writing anxiety than on listening & reading anxiety. More specifically, the EFL online learners were particularly anxious about the active use of pronunciation, vocabulary, and grammar. Correlational analysis revealed that both listening & reading anxiety and speaking & writing anxiety were positively correlated with EFL online learner satisfaction. The paper concludes with implications of these results.

Introduction

Online English learning has drawn special attention from adult learners who are unable to attend traditional classes in Taiwan, for its geographical and temporal convenience, course-on-demand designing, and individualized and self-paced learning. To meet the adult learners' needs for lifelong learning, many universities in Taiwan have offered online English learning as one of their modes of study. However, not all English learners who learned successfully in the traditional classrooms are satisfied with online learning environments and continue to take other new web-based English courses. Many frustrated language teachers and students alike share the same idea that online English is a good answer to their language teaching and learning problems, but indeed, online English is not for everyone to solve his/her English learning problems. For example, Jaggars, Edgecombe, and Stacey (2013) found that USA students taking online developmental English online had higher failure and withdraw rates (47%) than those for face-to-face developmental English (23%). Given these high student failure and withdraw rates in online English, a more detailed exploration of the factors contributing to online learner success is becoming an important issue. Two of these factors deserving consideration are online learner satisfaction and foreign language anxiety (FLA). Satisfaction-related studies have shown that online learner satisfaction seems to be a very important component for the successful completion of an online course (Chang & Fisher, 2003); and students' satisfaction with online learning is a powerful predictor of course dropout rates, as well as students' intentions to enroll in future online courses (Arbaugh, 2000; Dabbagh & Bannan-Ritland, 2005). FLA-related research has also indicated that FLA is one of the best predictors of foreign language achievement in the traditional classrooms (Gardner, 1985). Moreover, FLA appears to be related to performance in oral examinations (Phillips, 1992), to the production of vocabulary (Gardner, Moorcroft, & MacIntyre, 1987), and to teachers' ratings of achievement (Trylong, 1987). Despite the similarities in anxiety shared by distance language learners and their conventional counterparts, the distance factor had a major impact on language anxiety, both facilitating and debilitating (Hurd, 2007). However, FLA has not been fully explored in

Taiwanese EFL online learning context. This study addressed this gap in order to help researchers better understand whether FLA is related to EFL online learner satisfaction.

Literature Review

Definition of Online Learner Satisfaction

Online learner satisfaction is defined as a summary affective response of varying intensity that follows asynchronous online learning activities and is stimulated by the quality of the medium and the quality of the course (Wang, 2003). Based on this definition, EFL students in the present study having high levels of online learner satisfaction would be very satisfied with the quality of the medium and the quality of the online English course.

Nature of Foreign Language Anxiety (FLA)

FLA is fear or apprehension occurring when a learner is expected to perform in the foreign language (MacIntyre & Gardner, 1994). FLA sometimes arises in response to a particular situation or event (referred to as situational or state anxiety), but it can be a major character trait (Oxford, 1999). FLA can start as transitory episodes of fear in a situation in which the student has to perform in the language; at this time, anxiety is simply a passing state (Oxford, 1999). Ideally, FLA diminishes over time, as shown in studies of students learning French (e.g., Desrochers & Gardner, 1981). However, FLA does not decrease over time for all students. If repeated occurrences cause students to associate anxiety with language performance, FLA becomes a trait rather than a state (Gardner & MacIntyre, 1993). Once FLA has evolved into a lasting trait, it can have pervasive effects on language learning and language performance (Oxford, 1999).**Debilitating Anxiety versus Facilitating Anxiety**

The negative kind of anxiety is sometimes called "debilitating anxiety" because it harms learners' performance in many ways, both indirectly through worry and self-doubt and directly by reducing participation and creating overt avoidance of the language (Oxford, 1999). In the literature, the concept of

debilitating anxiety has been strongly supported by many researchers because their studies all showed the negative correlation of FLA with grades in language courses (Aida, 1994), with proficiency test performance (Ganschow et al., 1994), and with performance in speaking and writing tasks (Young, 1986).

Contrary to the concept of "debilitating anxiety," some researchers have suggested that FLA is actually "helpful" or "facilitating" in some ways, such as keeping students alert (Scovel, 1978). Nonetheless, Horwitz (1990) argued that anxiety is only helpful for very simple learning tasks, but not with more complicated learning such as language learning. Moreover, from the perspective of cognitive interference, Eysenck (as cited in MacIntyre & Gardner, 1994) postulated that anxiety may facilitate performance in cases where the increased effort more than compensates for the reduced efficiency of the cognitive processing. However, it has been reported that anxious language students study more than relaxed students but their achievement does not reflect that effort (Horwitz , Horwitz, & Cop, 1986; Price, 1991).

The Construct of FLA

There are two theoretical FLA models available in the literature deserving our attention. One is Horwitz et al.'s (1986) three-component model, and the other is Luo's (2011) four-component construct of FLA .Horwitz et al. divided the FLA into three categories: communication apprehension, test anxiety, and fear of negative evaluation. Communication apprehension is defined as a person's level of fear or anxiety associated with either real or anticipated communication with another person or persons (Aida, 1994). Test anxiety refers to a student's worry over the frequent testing and examinations in a language classroom (Horwitz et al.). Fear of negative evaluation, on the other hand, is defined as "apprehension about others' evaluation, distress over their negative evaluations, and expectation that others would evaluate oneself negatively" (Watson & Friend, 1969, p. 450).

Luo (2011) proposed that FLA has four components, that is, speaking anxiety, listening anxiety, reading anxiety, and writing anxiety. She argued that the anxieties associated with the four skills should be viewed as the four sub-anxieties of foreign language anxiety. Since Horwitz et al.'s (1986) model

mainly addresses speaking anxiety, does not reflect the anxieties associated with the four skills (Luo), and has not enough relevance to an online setting because of its emphasis on classroom-based learning and the anxiety associated with language classes (Hurd, 2007), the present study employed Luo's construct to define FLA. In other words, to fit the specific aspects of the EFL online learning context in Taiwan, four related performance anxieties were included in the present study: speaking anxiety, listening anxiety, reading anxiety, and writing anxiety.

FLA in the Classroom

Existing research on FLA shows 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 et al., 1986). For example, Bhatti, Memon, and Pathan (2016) investigated the perceptions of English language learners on language learning anxiety in EFL classroom. Participants of the study were 145 intermediate level students of different public colleges of Hyderabad, Sindh who were learning English as a foreign language. Findings revealed the causes of foreign language anxiety from the learners' perceptions such as communication apprehension was identified as the main cause of anxiety followed by the learners' self-perceived proficiency, fear of being negatively evaluated and nervousness as other sources of anxiety. Similarly, Wei (2013, 2014) continuously researched foreign language anxiety among Chinese students. He used the foreign language classroom anxiety scale to investigate anxiety level of Chinese Bouyei college English foreign language learners. His research indicated a medium level of anxiety. Learners equally experienced communication anxiety, fear of negative evaluation and test anxiety in the foreign language classroom.

FLA is not only prevalent among language learners, but appears to interfere with language learning (Luo, 2011). To offer a more complete analysis of the subtle effects of FLA on language learning, Tobias (1979, 1986, as cited in MacIntyre & Gardner, 1994) provided a three-stage model. Tobias' model

describes the effects of anxiety on learning as seen in three stages: Input, Processing, and Output. During input, anxiety may cause attention deficits and poor initial processing of information. At the processing stage, if the task is relatively simple, anxiety may have little effect. However, as the task becomes more difficult, anxiety shows greater impact on processing. At the output stage, anxiety may interfere with the retrieval of previously learned information. To extend this model, MacIntyre and Gardner (1994) examined some of the more specific cognitive processes that may be involved in language acquisition in terms of three-stage model of learning: Input, Processing and Output. They found that anxiety interfered with all three stages of cognitive processing, and that anxiety had the strongest impact on processing and output.

Studies concerning FLA in the classroom have demonstrated the potential deleterious effect of second language class anxiety on second language learning (e.g., Aida, 1994; Horwitz et al., 1986). To be specific, these studies have generally supported a negative and moderate correlation (mostly around -.30) between second language anxiety and second language performance (Cheng, 1998; Kao, Craigie, Kao, & Hu, 2015). Issues pertaining to FLA and four traditional language skills have also been the focus of foreign language research in the last two decades. For example, Sellers (2000) found that highly anxious readers were more distracted by interfering thoughts and were less able to focus on the task at hand, which in turn affected their comprehension of the reading passage. Dixson (1991) reported that students who did not experience anxiety scored significantly higher on the listening comprehension test than the ones that did experience anxiety. With regard to writing, Hassan (2001) investigated the impact of writing apprehension on quantity and quality writing of 132 Egyptian university students and found a possible correlation between apprehension, poor skill, and lack of proper writing processes. Concerning speaking, MacIntyre and Charos's (1996) study indicated that anxious learners seemed to be less willing to communicate, and that they tended to talk less frequently when given the opportunity to do so in a natural setting. Similarly, Liu and Jackson (2008) investigated the relationship between Chinese university EFL students'

unwillingness to communicate in English and their FLA, and found the two variables to be closely related. However, Young (1986) presented different results indicating that ability is the major factor influencing the oral proficiency interview scores and that, after controlling for ability, anxiety has little effect.

Several researchers have also mentioned that FLA is related to proficiency levels and task difficulty. For example, Liu (2006) reported that more proficient EFL Chinese students tended to be less anxious. Similarly, Gardner, Smythe, and Brunet (1977) examined 62 English-speaking students learning French in an intensive summer school environment and found that the beginners experienced the most anxiety and advanced students the least. However, Marcos-Llinas and Garau (2009) found different results showing that advanced Spanish learners showed higher levels of anxiety than beginning and intermediate learners. As for FLA and task difficulty, Spielberger (1975) found that the performance of high anxiety subjects was inferior to that of low anxiety subjects on a difficult task but superior on an easier task. For low ability students, the performance of the high anxiety group was debilitated while for the high ability students, the performance of the high anxiety group was facilitated relative to the low anxiety subjects. Spielberger's findings suggest that the difficulty of the task and learner ability can be the mediating variables in the anxiety/ achievement relationship.

FLA in the Online Environment

While there have been many studies investigating FLA in the traditional classrooms, FLA in the online learning context has received relatively scant attention. Although one could expect that some students resort to online language learning for seeking security in anonymity and reducing FLA arising from interacting with their peers, there is no significant difference in anxiety profiles between classroom and distance learners (Pichette, 2009). To examine the profile of FLA faced by Chinese EFL students in the distance context, Hurd and Xiao (2010) conducted a study in China. The findings showed that Chinese students felt more anxious about productive skills than receptive skills while learning English in distance context; speaking activities made the Chinese

students more anxious than writing activities; listening activities made the Chinese students more anxious than reading activities; and some anxiety-provoking factors were associated with an inability to apply even basic knowledge of grammar and acquired vocabulary to actual language use. Hurd and Xiao's findings suggest that speaking the target language is the most anxiety-producing activity for EFL learners. This might be due to the fact that speaking tasks require high risk of exposure and speaking the target language makes EFL learners fear "being laughed at," "making a fool of themselves," and "being ridiculed" (Price,1991).

Regarding the association between FLA and online language learning, Bosmans and Hurd (2016) explored the link between foreign language anxiety (FLA) and phonological attainment when learning in a distance setting. Quantitative methods included a questionnaire which explored FLA and learning pronunciation of English- speaking students learning French in a distance setting ($n = 590$). Pronunciation competence and FLA were measured using two instruments: an adapted version of the Foreign Language Classroom Anxiety Scale. A significant correlation was found between good pronunciation skills and low levels of FLA. Moreover, Hurd (2007) pointed out that some distance factors were associated with additional specific anxiety-provoking elements, including (a) lack of instant feedback; (b) difficulty assessing personal progress in comparison with other students; (c) isolation; (d) lack of opportunities for speaking practice; (e) the complexity of all the technologies; and (f) lack of confidence when working on your own. While leaning at a distance provoked more anxiety for some students than learning face-to-face, about 27% of students claimed that the distance factor actually made them less anxious (Hurd). Their reasons covered: (a) opportunity to work at your own pace and be more in control; (b) absence of exposure to public criticism; (c) lack of competition and peer pressure; (d) chance to practice and make mistakes in private, to reflect and to try things out; and (e) better option for those with low self-confidence. Hurd concluded that about 21% of students felt that learning at a distance made them

more anxious than learning in a classroom, 27% found that the distance factor made them less anxious, and 52% did not consider that the learning mode made any difference.

The fact that the distance factors make learners less anxious has also been evidenced by other studies. For example Grant, Huang, and Pasfield-Neofitou (2013) found that students taking Chinese in the virtual environment showed lower levels of FLA about making mistakes and using Chinese in the online 3D environment compared with students studying in face-to-face context, suggesting that learning language in virtual world can reduce FLA. Similarly, Hung and Hwang (2013) examined the relationship between multimedia environments and FLA in college students studying English as a Foreign Language (EFL) in Taiwan. The results suggest that a multimedia environment can reduce student anxiety and provide a less stressful classroom environment.

In summary, there are only a few studies on the link between FLA and online language learning and the results so far have been mixed. It thus remains unclear whether FLA affects online language learning or online language learning affects FLA. In light of this, the relationship between FLA and EFL online learning merits examination. Given that no studies in the literature have addressed the relationship between FLA and online learner satisfaction in Taiwanese EFL online learning context, and the psychometric information (validity and reliability) has not been provided for the Chinese versions of Foreign Language Anxiety Scale (FLAS) and Online Learning Satisfaction Scale (OLSS), the present study attempted to answer the following three research questions:

1. How reliable and valid are the Chinese versions of the FLAS and OLSS?
2. What is the profile of FLA experienced by EFL online learners?
3. What is the relationship between FLA and EFL online learner satisfaction?

Method

Description of the Online Learning Environment and the Online English

One online instructor and several assistant teachers are responsible for the online English course offered by the University. The online instructor is responsible for providing concise online lecture notes, various learning activities, and visual aids to EFL online learners. The assistant teachers deal with the interaction with students online, help the students review all the materials they have learned, solve the problems they have encountered, conduct midterm and final examinations during the face-to-face sessions, and give students the grades. To gain the online English credit, students are required to log in to the course regularly, submit their homework on time, join the discussion form, interact with the teacher twice a semester, attend the face-to-face classroom activities three times, and take the midterm and final examinations. Several tools are offered for the learners and the assistant teachers to use: (a) web pages for the presentation of the course description and learning materials; (b) a shared file space, for the learners and the teacher to share and download files; (c) a discussion forum for teachers to post questions and learners to post responses; (d) an e-mail list for the cases in which it was necessary to send announcements to the learners' own e-mail addresses; (e) a bulletin board on which the teacher could post important announcements; and (f) a homework area, where the learners could submit their homework to the teachers and read their teacher's feedback to their assignments.

The online English is mainly based on asynchronous communication method over the internet. It is designed for low-intermediate EFL students with an aim to develop their school survival vocabulary, listening skills, speaking skills, reading skills, and writing skills through interesting topics and variety of activities offered by the course. Topics covered are related to students' daily lives, including music, jobs, the weather, personality, vacation, physical appearance, health, buying gifts, and invitations. All online English materials are presented in lecture or text format which demands students' English listening and reading

abilities.

Participants

According to Stevens (2002), the sample size used for factor analysis should be 2-20 times greater than the number of variables to be analyzed, and at least five observations for each variable are indispensable for the development of a reliable factor framework. The number of variables (items) to be analyzed was 16 for FLAS and 12 for OLSS. Therefore, the present researcher decided to invite 178 college EFL students (54 males, 124 females), over 11 times the higher number, 16, of variables, to participate in the present study. All of the participants were the evening undergraduate program students or weekend program students enrolled in the online English at one of the southern universities in Taiwan. They were from a variety of majors, including nursing (108, 60.7%), environmental science (37, 20.8%), information management (20, 11.2%), and hospitality management (13, 7.3%). Thirty-eight (21.3%) participants were 18-20 years old, fifty-two (29.2%) were 21-30 years old, fifty-eight (32.6%) were 31-40 years old, and thirty (16.9%) were 41-50 years old.

Instruments

Two instruments were used in the present study, including Foreign Language Anxiety Scale (FLAS, see Appendix A), and Online Learner Satisfaction Scale (OLSS, see Appendix B).

FLAS was adapted from Hurd and Xiao's (2010) 15-item scale. These items focus on students' anxiety with listening (4 items), speaking (4 items), writing (4 items), and reading (3 items). For the purpose of the present study, the new item "I am not confident that I can understand what I read in English" was added to reading anxiety scale. The new developed FLAS with 16 items used a 5-point Likert-type scale ranging from "*strongly disagree*" (1 point) to "*strongly agree*" (5 points). The total score for each subscale ranged from 4 to 20, with high scores indicating high levels of listening, speaking, reading, and writing anxiety. The psychometric information (validity and reliability) for FLAS has not

been provided yet. Therefore, FLAS would be validated in the present study. Hurd and Xiao's (2010) FLAS has four components, that is, speaking anxiety, listening anxiety, reading anxiety, and writing anxiety, while Horwitz et al.'s (1986) anxiety scale mainly addresses speaking anxiety, and does not reflect the anxieties associated with the four skills (Luo). Thus, the present researcher decided to employ Hurd and Xiao's (2010) FLAS in the present study.

OLSS was adapted from Arbaugh's (2000) 12-item scale. These items focus on students' satisfaction with the course by taking it via the Internet, their perception of its quality, and their likelihood of taking future courses via the Internet. A factor analysis revealed that these items loaded onto two factors: (a) satisfaction with the medium (seven items loading at .58 or higher; coefficient α = .91); and (b) satisfaction with the course (five items loading at .53 or higher; coefficient α = .91) (Arbaugh, 2002). For the purpose of the present study, the words "English course" replaced the original word "course" in each statement. The modified OLSS used 5-point Likert-type scale ranging from "*strongly disagree*" (1 point) to "*strongly agree*" (5 points). The total score ranged from 12 to 60, with high scores indicating high levels of online learner satisfaction. Since Arbaugh's (2000) OLSS has been widely used in online learning context and has high reliability and validity, the present researcher decided to employ it in the present study.

Procedures

To determine the accuracy and comprehensibility of the translation, both instruments were translated into Chinese using a back-translation method, which is regarded as the preferred method of obtaining a culturally equivalent instrument (Berberoglu & Sireci, 1996). Before the instruments were administered to the participants, the first translated versions of the two instruments were checked. Two experienced English teachers were invited to complete the two instruments and translate them back to English. They were also invited to judge the comprehensibility and ambiguity of the translation and to suggest changes to improve the items where needed.

A 28-item survey covering the FLAS and OLSS was administered in four different classes by the present researcher during the ninth week of the fall semester of 2015. It took about 15 minutes to complete the survey. Students' participation was voluntary and students were informed that their responses would not influence their final grades and confidentiality would be maintained.

Data Analysis

The data were computed by using the *SPSS* (Statistical Package for the Social Science) 18.0 software for *Windows*. Factor analysis, reliability analysis, descriptive statistics, and Pearson's product-moment correlation were employed to answer the research questions.

Results and Discussion
Results and Discussion of Research Question 1

Research question 1 examined the validity and reliability of the Chinese versions of FLAS and OLSS. Construct validity has traditionally been defined as the experimental demonstration that a test is measuring the construct it claims to be measuring (Brown, 2000). In the present study exploratory factor analysis was implemented to determine construct validity. To clarify the structure of FLAS, the principle component analysis (PCA) was utilized as the extraction method, with the rotation method of Equamax and Kasier (1974) normalization. An item would be retained if the factor loading of the item was larger than.4 in the relevant scale. The KMO measure of sampling adequacy was .91 and Bartlett's Test of Sphericity was significant, $\chi^2 (120) = 2589.67$, $p < .001$, indicating that the FLAS data are appropriate for factor analysis. The eigenvalue >1 criterion was used to determine the number of common factors to retain. Two factors accounting for 70.01% of the variance were extracted. Additionally, a factor loading of .40 was used as a cut-off for inclusion. No items were eliminated from the initial 16 items, and there were respectively 8 items in the two scales of FLAS. The factor loadings for retained items are presented in Table 1. A close examination of the items under each factor showed that all the eight items loaded on Factor 1 were associated with anxiety while listening to or reading English;

the eight items for Factor 2 all reflected anxious feelings towards speaking or writing

English. Therefore, the two factors were referred to as "listening & reading anxiety",

and "speaking & writing anxiety" respectively. Originally, Hurd and Xiao (2010) viewed the construct of FLAS as having four components: speaking anxiety, listening anxiety, reading anxiety, and writing anxiety, but the resulting factor structure suggests that FLAS has two rather than four components. One component refers to receptive skill anxiety, namely listening & reading anxiety; and the other component refers to productive skill anxiety, namely speaking & writing anxiety. The result that items for listening and reading anxiety loaded on the same factor seems to be reasonable because listening and reading are similar in that they both involve the receptive skills of learning the target language. Similarly, the finding that items for speaking and writing anxiety loaded on the same factor seems to be reasonable because speaking and writing are similar in that they both involve the productive skills of learning the target language. These results appear to lend support to the construct validity of FLAS. The reliability (alpha) coefficients for the two subscales respectively were .94 and .93, and the overall alpha was .96. The results of factor analysis and reliability analysis suggest that FLAS is valid and reliable for assessing students' FLA.

Similarly, PCA was adopted to clarify the structure of the OLSS. The KMO measure of sampling adequacy was .90 and Bartlett's Test of Sphericity was significant, $\chi^2 (66) = 1459$, $p < .001$, indicating that the OLSS data are appropriate for

Table 1

Factor Loadings and Reliability for FLAS Two-Factor Solution

Item	Factor 1	Factor 2
Factor 1: Listening & Reading Anxiety, α = .94		
Item 1	.71	
Item 2	.78	
Item 3	.76	
Item 4	.73	
Item 5	.68	
Item 6	.87	
Item 7	.83	
Item 8	.70	
Factor2: Speaking & Writing Anxiety α = .93		
Item 9		.68
Item 10		.78
Item 11		.73
Item 12		.72
Item 13		.70
Item 14		.71
Item 15		.81
Item 16		.80

Note. N = 178, Eigenvalues: Factor 1 = 9.79, Factor 2 = 1.41
 Cronbach's α = .96 for entire measure. Total variance explained is 70.01%.

factor analysis. The eigenvalue >1 criterion was used to determine the number of common factors to retain. Two factors accounting for 66.84 % of the variance were extracted. Additionally, a factor loading of .40 was used as a cut-off for inclusion. No items were eliminated from the initial 12 items, and there were, respectively, 7 and 5 items in the two scales of OLSS. The factor loadings for retained items are presented in Table 2. A close examination of the items under each factor showed that all the seven items loaded on Factor 1 tapped learners' satisfaction with the medium; the five items for Factor 2 all addressed learners'

satisfaction with the course. Therefore, the two factors were referred to as "satisfaction with the medium", and "satisfaction with the course" respectively. The resulting factor structure supports the factor structure proposed by Arbaugh (2002). The alpha coefficients for these two scales were .90 and .88, respectively, and the overall alpha was .93. The results of factor analysis and reliability analysis indicate that OLSS is considered as adequately valid and reliable for surveying students' online learner satisfaction.

Table 2

Factor Loadings and Reliability for OLSS Two-Factor Solution

Item	Factor 1	Factor 2
Factor 1: Satisfaction with the Medium, α = .90		
Item 6	.50	
Item 7	.64	
Item 8	.75	
Item 9	.73	
Item 10	.75	
Item 11	.78	
Item 12	.75	
Factor 2: Satisfaction with the Course, α = .88		
Item 1		.81
Item 2		.84
Item 3		.76
Item 4		.69
Item 5		.67

Note. N = 178, Eigenvalues: Factor 1 = 6.94, Factor 2 = 1.08. Cronbach's α = .93 for entire measure. Total variance explained is 66.84%.

Results and Discussion of Research Question 2

Research question 2 investigated the profile of FLA experienced by EFL online learners. To answer this question, the data were analyzed using descriptive statistics. Table 3 displays the means, standard deviations, and ranges for the participants' scores on the subscales of FLAS. The results indicated that the participants reported higher

score on speaking & writing anxiety (*M* = 3.68) than on listening & reading anxiety (*M* = 3.55), demonstrating that the participants in the present study seem to experience more anxiety on productive skills (speaking & writing) than on receptive skills (listening & reading). This lends support to Hurd and Xiao's (2010) findings that Chinese students felt more anxious about productive skills than receptive skills

while learning English in distance context. The finding that speaking activities were the major cause of anxiety for EFL online learners might be due to the fact that speaking the target language involves fear of self-exposure or fear of being spotlighted in front of others (Price, 1991). The finding that writing activities were also the major cause of anxiety for EFL online learners might be due to the fact that writing is another form of self-exposure. When faced with a writing task, EFL online learners might have a feeling of frustration that leads to their fear of having their writing read publicly and evaluated (Scott & Timmerman, 2005).

Table 3

Descriptive Statistics for Participants' Responses on FLAS (N=178)

Anxiety	Possible Range	Mean	SD
Listening & Reading	1-5	3.55	0.91
Speaking & Writing	1-5	3.68	0.84

To gain a clearer picture of the participants' FLA, a further examination of FLAS items was conducted using descriptive statistics. The results, found in Table 4,

revealed that the seven items within the highest level of anxiety were: (1) I worry about my English pronunciation (*M* = 3.76); (2) I am not sure that I can speak English Table 4

Descriptive Statistics for Participants' Responses on FLAS Items (N = 178)

Item	Mean	SD
Receptive skills of listening and reading		
1. I am not confident that I can understand what I hear in English.	3.44	0.93
2. I worry when I hear new or unfamiliar English words.	3.39	1.02
3. I worry when I hear complicated English structures.	3.43	1.04
4. I get flustered unless English is spoken very slowly and deliberately.	3.49	0.95
5. I am not confident that I can understand what I read in English.	3.48	0.88
6. I get upset when I come across new or unfamiliar English words in my reading.	3.42	0.97
7. I get upset when I come across complicated English structures in my reading.	3.42	0.99
8. I get upset when I am reading English because I have to read things again and again.	3.41	0.98
Productive skills of speaking and writing		
9. I worry about my English pronunciation.	3.76	0.91
10. I am not sure that I can speak English appropriately.	3.72	0.90
11. I feel troubled when I cannot easily use the English vocabulary that I know in conversation.	3.62	0.96
12. I am always worried about making mistakes in grammar when I am speaking English.	3.66	0.94
13. I feel nervous when I am writing in English.	3.47	

		0.99
14. I feel troubled when I cannot easily use the English vocabulary that I know in writing in English.	3.56	
		1.00
15. I am always worried about making mistakes in grammar when I am writing in English.	3.69	
		0.91
16. I am not sure that I can write correct sentences in English.	3.71	
		0.88

appropriately (M = 3.72); (3) I am not sure that I can write correct sentences in English (M = 3.71); (4) I am always worried about making mistakes in grammar when I am writing in English (M = 3.69); (5) I am always worried about making mistakes in grammar when I am speaking English (M = 3.66); (6) I feel troubled when I cannot easily use the English vocabulary that I know in conversation (M = 3.62); and (7) I feel troubled when I cannot easily use the English vocabulary that I know in writing in English (M = 3.56). All of the top seven anxiety items were related to productive skills with regard to the active use of pronunciation, vocabulary, and grammar. Pronunciation seems to be the most anxiety-provoking language skill for the EFL online learners in the present study. This might be the result of fear of self-exposure, being spotlighted in front of others, and negative evaluation from their classmates. Using vocabulary also appears to be another anxiety-provoking language skill for EFL online learners. Chinese and English having different language roots might explain this finding (Hurd & Xiao, 2010). Different language roots might also explain why the learning of grammar is considered as anxiety-arousing for EFL online learners in the present study (Hurd & Xiao).

Results and Discussion of Research Question 3

Research question 3 explored the relationship between FLA and EFL online learner satisfaction. There was a significant positive correlation between EFL online learner satisfaction scores and the scores on listening & reading anxiety, and speaking & writing anxiety (see Table 5), suggesting that as FLA increases, so does the level of EFL online learner satisfaction. This appears to contradict the earlier findings that

Table 5

Correlations between Language Anxiety and EFL Online Learner Satisfaction

Variable	Satisfaction
Listening & Reading	.29***
Speaking & Writing	.38***

Note. *** $p < .001$

there was a negative and moderate correlation (mostly around -.30) between second language anxiety and second language performance in the traditional classrooms (Cheng, 1998; Kao, Craigie, Kao, & Hu, 2015). However, the positive association between FLA and EFL online leaner satisfaction can be explained by the previous finding that a multimedia environment can reduce student anxiety and provide a less

stressful classroom environment (Hung & Hwang, 2013). Most of the EFL online learners in the present study were low-intermediate EFL students. Given the fact that

less proficient EFL students tend to be more anxious (Liu, 2006), we can assume thatour anxious participants might feel more comfortable learning English online while perceiving online English learning context as less stressful. Thus, if their language anxiety can be reduced by the online English learning environment, their higher online learner satisfaction can be expected. Another plausible explanation might be related to online language context having unique characteristics different from those of traditional language classrooms. For example, Hurd (2007) reported that the absence of exposure to public criticism, the lack of competition and peer pressure, the opportunity to work at your own pace and be more in control, and the chance to make mistakes and try things out in private might be helpful in reducing anxiety for some self-conscious students while learning language online. Accordingly, higher anxious learners in the present study would have been more likely to avoid the negative evaluation from their classmates and instructors, learn English on their own paces, and make mistakes without feeling embarrassed. All of these factors might lead to an increased chance of developing higher online learner satisfaction.

Conclusions

To validate the Chinese versions of FLAS and OLSS, this study provides empirical evidence to indicate that the Chinese versions of these scales are valid and reliable, suggesting that these instruments can be used in other regions where people speak Chinese while conducting similar studies. To gain a complete picture of EFL online learners' FLA profile, this study gives empirical evidence to reveal that the participants reported higher scores on speaking & writing anxiety than on listening & reading anxiety, demonstrating that the participants seem to experience more anxiety on productive skills (speaking & writing) than on receptive skills (listening & reading). More specifically, the EFL online learners are particularly anxious about the active use of pronunciation, vocabulary, and grammar. To examine the relationship between FLA and EFL online learner satisfaction, the present study offers empirical evidence to show positive correlations between each type of FLA and EFL online learner satisfaction, suggesting that as the levels of EFL online learners' FLA increase, so do their levels of online learner satisfaction.

Based on the results of the present study, it is recommended that EFL web teachers first address online learners' pronunciation by: (a) providing learning activities online to facilitate their pronunciation skills; (b) ensuring that the online pronunciation learning task is situated at the learners' proficiency level; and (c) offering opportunities for students to experience the feeling of achievement with the completions of online pronunciation learning tasks. Furthermore, EFL web teachers should create a less stressful learning environment that can build up learners' vocabulary size and enhance their grammar knowledge. Finally, since anxious EFL online learners seem to enjoy online English more, EFL web teachers must acknowledge that online English learning context might create a non-threatening and　more relaxing English learning environment for self-conscious students, which in turn might help reduce their language anxiety and increase their motivation for learning. EFL web teachers can then encourage high anxious learners to take more online

English courses to overcome their anxiety and improve their English proficiency.

The present study has some important limitations. Only low-intermediate students from one Taiwanese university participated in the present study. Therefore, the participants are not representative of the whole EFL Taiwanese population. Future research should include a more diverse sample with different levels of English proficiency to determine whether the results of this study are robust across different samples and, hence, enhance the generalizability of the findings. Since this quantitative study might not be able to probe more deeply into students' perceptions and feelings regarding FLA, a follow-up interview should be recommended in the future study to minimize possible misinterpretations.

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Appendix A

Foreign Language Anxiety Scale (FLAS, Hurd & Xiao, 2010)

Listening and reading anxiety

1. I am not confident that I can understand what I hear in English.
2. I worry when I hear new or unfamiliar English words .
3. I worry when I hear complicated English structures.
4. I get flustered unless English is spoken very slowly and deliberately.
5. I am not confident that I can understand what I read in English.
6. I get upset when I come across new or unfamiliar English words in my reading.
7. I get upset when I come across complicated English structures in my reading.
8. I get upset when I am reading English because I have to read things again and again.

Speaking and writing anxiety

9. I worry about my English pronunciation.
10. I am not sure that I can speak English appropriately.
11. I feel troubled when I cannot easily use the English vocabulary that I know in conversation.
12. I am always worried about making mistakes in grammar when I am speaking English.
13. I feel nervous when I am writing in English.
14. I feel troubled when I cannot easily use the English vocabulary that I know in writing in English.
15. I am always worried about making mistakes in grammar when I am writing in English.
16. I am not sure that I can write correct sentences in English.

Appendix B

Online Learner Satisfaction Scale (OLSS, Arbaugh, 2000)

1. I am satisfied with my decision to take English course via the Internet.
2. If I had an opportunity to take another English course via the Internet, I would gladly do so.
3. My choice to take English course via the Internet was a wise one.
4. I was very satisfied with this English course.

5. I feel that this English course served my needs well.
6. Conducting the English course via the Internet improved the quality of the course

 compared to other courses.
7. I will take as many English courses via the Internet as I can.
8. The quality of the English course compared favorably to my other courses.
9. I feel the quality of the English course I took was largely unaffected by conducting

 it via the Internet.
10. I was disappointed with the way this English course worked out.
11. If I had to do it over, I would not take this English course via the Internet.
12. Conducting this English course via the Internet made it more difficult than other

  courses I have taken.