Foreign language anxiety in a new English program in Thailand

Adam R. Tanielian
Disney English

Thailand boasts a robust English as second language ESL/EFL system in both public and private schools, where students learn various subjects from native speakers in the English language. Foreign language classroom anxiety (FLCA) is a subject that is relevant to ESL instruction and learning. This study assesses associations between FLCA and academic performance in English and maths subjects at a Thai government school that is in its second year of employing native English speaking teachers. Four-hundred-and-twenty-four students were administered FLCA surveys, which were compared to English and maths exams. Moderate-high FLCA levels were found in the sample, with no difference between an immersion group and non-immersion groups. A weak, negative correlation (r = -.163) was found between FLCA and English performance). Thai language maths exam scores were significantly better than English language maths exam scores. No correlation between FLCA and maths performance was found.

Keywords: Foreign Language Classroom Anxiety (FLCA), English as a Second Language (ESL), language and math, English immersion

INTRODUCTION

English is the preferred second language (L2) of the world's businesspeople. Consequently, English as a second language (ESL) or as a foreign language (EFL) has broad importance in curricula at primary, secondary, and tertiary levels of education. Critics may consider "linguistic imperialism" threatening or intrinsically unfair (Philipson, 1992, quoted by Narkunas, 2005), but in an age of globalization and world trade, English provides real opportunities for growth and development. Historically, only the wealthiest non-native speakers were privileged to have formal English language education, but there are now more than two billion English speakers worldwide (British Council, 2013).

Both public and private institutions have come to accept English as a core component of curricula. Children often begin learning to read, write, listen to and speak English during their first year in school. Due to high and rising demand for quality English language instruction, foreign teachers have become ubiquitous in much of the Eastern developing world. Many of these expatriate or foreign expert workers have little or no formal training on pedagogical methodology. Lack of teacher expertise coupled with language barriers and institutional weaknesses makes assessment and improvement of ESL systems a difficult process. Information on Internet forums and industry blogs, and informal discussions with foreign teacher colleagues, reveal that common problems

foreign teachers experience generally relate to the culture and psychology of their students.

Student anxiety has been considered a key factor influencing English language learning (ELL). However, further research is required to understand the dynamics of anxiety in the foreign language learning environment, including how anxiety factors into learning other content delivered in the English language.

RESEARCH OBJECTIVES

The present study examines levels of foreign language classroom anxiety (FLCA) among students in basic, supplementary, and multilingual program (MLP) groups at a Thai school in its second year of offering instruction provided by foreign teachers. The primary aim of the study is to discover what, if any, relationships exist between foreign language anxiety and performance in English and maths.

Findings of this study are important to Thai and foreign educators. Anxiety poses potential obstacles to student success. Consistent engagement of issues related to student psychology serves to improve overall function and appeal of the domestic Thai education system. Through a better understanding of students' internal states, educators can modify their approaches to suit the specific needs of students. Comparison of results from FLCA studies internationally will also increase understanding of broader issues that transcend nationality and the native tongue. The Association of Southeast Asian Nations (ASEAN) members plan to harmonize various institutions, including education. Studies such as this one can provide further guidance on important topics within the region.

RESEARCH QUESTIONS AND HYPOTHESES

Ouestions

- Q1: To what level is FLCA present in 7th through 12th grade students in the sample?
- Q2: Is there any correlation between FLCA and English language performance?
- Q3: Is there any difference in FLCA levels between immersion program students and other students who are not in the immersion program?
- Q4: Is there a difference between English and Thai language maths performance?
- Q5: Is there a correlation between FLCA and performance in maths courses where English is the language of instruction?

Hypotheses

- H1: Levels of FLCA among students in the sample are not low.
- *H2:* There is a negative correlation between FLCA and English language performance.
- *H3:* There is no difference in FLCA levels between immersion program students and other students who are not in an immersion program.
- *H4:* Within the immersion group, performance in maths in the English language is lower than performance in maths in the Thai language.

H5: There is a negative correlation between FLCA and performance in maths among English immersion program students in the sample.

ESL IN THAILAND

Foreign relations are of significant importance to Thailand's economy. Foreign direct investment inflow between 2008 and 2011 was more than 30.3 billion USD (World Bank, 2013). Over 22.3 million foreign tourists visited the Thai Kingdom in 2012 (Thai Department of Tourism, 2013). English is a common language among many participants across various industries. Thus, English skills translate directly to economic and social opportunity within the country.

Externally, the ASEAN is planning to launch its ASEAN Economic Community (AEC) by the end of 2015. English is the official language of ASEAN, meaning English will facilitate free international movement of goods and people within the region. Preparation for the AEC includes a heavy focus on English-language communication.

Recent reforms by the Thai national government guarantee nine years of compulsory and twelve years of free education for all citizens. In 2005, enrolment rates for grades 10-12 were estimated at only 63.7% (Varavarn, 2005). However, since the 1997 *Constitution* was adopted, all Thais have had the right to benefit from government-funded schooling through to 12th grade. English is a core curriculum subject, and students are tested on English skills in the Ordinary National Education Tests (ONET) in grades 6, 9, and 12. English instruction from native English speakers is still an out-of-pocket expense, but parents are in a better position to afford such tuition due to the larger burden of secondary education being lifted.

Millions of Thai students learn English throughout their primary and secondary education. Recent changes in funding make English language and broader education accessible to the general population, which necessitates more Thai and foreign teachers. As part of larger developments ongoing throughout the country, schools and districts that did not previously participate in foreign teacher programs have recently developed semi-autonomous, parent-funded programs within foreign language departments.

TYPES OF ENGLISH PROGRAMS WITH FOREIGN TEACHERS

In primary and secondary schools, a variety of English programs are offered in which foreign teachers are involved. The basic and supplementary programs are the most common in Thai schools. In these programs, English language lessons and sometimes other subjects are taught by foreign teachers for between one and three hours per week per class. These lessons supplement or are supplemented by instruction in content areas in the Thai language.

Students spend more time with native speakers in immersion programs where they see a foreign teacher at least once every day. There are two types of immersion programs: English Programs (EP) and MLP. EP students receive English-language only instruction in courses such as science and maths, and other subjects not related to Thai language and identity. Thai teachers may assist with translation or tutoring in EPs. MLP students receive a similar offering of courses but meet with English native speakers less

frequently than EP students. MLP students learn subjects like maths and science in English, but also learn other foreign languages like Chinese and Khmer.

BACKGROUND

A new set of challenges has arisen for the Thai population as a result of the expansion of the geographic and socioeconomic scope of native speaker interactions. Students who are not accustomed to interacting with persons of other cultures and ethnicities are now learning from foreigners. Fears and apprehensions are abundant among ESL students, and easily recognised by teachers who can decode nonverbal cues (Gregersen, 2009; Cubukcu, 2007; Abdullah & Rahman, 2010). Although we can infer that some association between FLCA and performance exists, valid research is required to understand the extent to which internal student psychology is related to learning and performance. It is useful to, first, define anxiety.

Types of anxiety

Anxiety is a commonly occurring phenomenon with wide-ranging manifestations. Physiological symptoms of anxiety include rapid heartbeat, high blood pressure, sweating, body temperature changes, shortness of breath, and changes in body chemistry. Psychological effects include difficulty thinking, confusion, unwanted thoughts, fear, worry, panic, nervous laughter, or speech (Morrow & Labrum, 1978; Craske et al., 2009).

Typically, anxiety comes in three forms: state, trait, and situation-specific (Pappamihiel, 2002; Wilson, 2006). Trait anxiety is a personality trait. People who are likely to become anxious in any situation, with or without specific arousal, have trait anxiety. State anxiety occurs under certain social conditions. Public speaking is a common example of state anxiety, where people who are not generally anxious may feel afraid or anxious about a task. Situation-specific anxiety is a type of state anxiety that is present in a more specific context. For example, going to a foreign language lesson or speaking in a foreign language may arouse this type of anxiety.

Anxiety can be facilitative or debilitative to learning. Facilitative anxiety, although rarely found, helps learners by motivating them to fight to learn a new task, increasing drive, alertness, and thus improving performance. Most anxiety is debilitative, harming learners by motivating them to flee the new task, forming a "mental block", threatening their self-concept and world view, acting as an affective filter, preventing reception of input, and thereby decreasing performances (Andrade & Williams, 2009; Atef-Vahid & Kashani, 2011).

FOREIGN LANGUAGE CLASSROOM ANXIETY SCALE (FLCAS)

Horwitz, Horwitz and Cope (1986) described foreign language anxiety (FLA, used interchangeably with FLCA) as "a distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning process" (p.128). They developed the most frequently used FLCAS. Their theory is that FLA is a situation-specific anxiety rather than an aspect of general classroom anxiety. Later research validated this theory by

showing that FLA is separable from general anxiety, and academic history is not predictive of FLA (Tran, 2012).

The instrument that Horwitz et al. (1986) designed is a questionnaire consisting of thirty-three statements. A 5-point Likert scale allows respondents to rate each statement from "strongly agree" to "strongly disagree", with a midpoint of "neither agree nor disagree". Twenty-four statements are positively worded, and nine are negatively worded. Three aspects of FLCA are measured in the survey: communication apprehension, test anxiety, and fear of negative evaluation.

Communication apprehension is a type of shyness, fear or anxiety about communicating with people; tension or discomfort with public speaking included. Test anxiety is worry or alarm about consequences of poor performance on a test or other evaluation. Fear of negative evaluations is apprehension about evaluations, avoidance of evaluations, and expectations that others will make negative evaluations.

Religious, spiritual, cultural, historical, economic and other differences among the world's people limit the universality of any instrument. Prior to the FLCAS, researchers experimented with a variety of instruments. Some researchers, such as Andrade and Williams (2009), prefer to design their own instrument. However, the FLCAS of Horwitz et al. (1986) is the most widely supported instrument, as evidenced by the number of studies in which it has been featured, and the number of languages into which it has been translated.

ANXIETY AND LANGUAGE LEARNING

Disagreements among experts have been found on the issue of causality. Some researchers, such as Horwitz et al., (1989) found FLA has detrimental effects on language learning. Willingham and Cole (1997, p. 213) argue that anxiety is a consequence, rather than a cause of poor performance. Still others (Atef-Vahid & Kashani, 2011) find that correlation is not indicative of causation, that a chicken and egg phenomenon exists, or that a bidirectional relationship exists between FLCA and performance. A cyclical unknown relationship of origins may exist, where anxiety leads to poor performance, which leads back to anxiety, which restarts the cycle.

Wilson (2006) reviewed studies that used the Horwitz et al. (1986) FLCA and found results consistently show FLCA and ESL performance are negatively correlated. Wilson found a strong, statistically significant negative Pearson correlation between preuniversity English grades and FLCA among students in Grenada (r = -.607, n = 40, p = .001), and strong negative Pearson correlation between FLCA and exam average at university (r = -.506, p = .001). Chakrabarti and Sengupta (2012) found a moderate, statistically significant negative Pearson correlation among Indian students (r = -.361, n = 146, p < .0005). Atef-Vahid and Kashani (2011) found a strong, statistically significant negative Pearson correlation between English exam scores and FLCA among Iranian students (r = -.636, n = 38, p < .0005). The presence of similar findings across cultures, language and countries validates the Horwitz et al. scale as a reliable instrument.

By contrast, a minority of studies show moot or facilitative effects of FLCA. Zhang (1996, cited in Atef-Vahid & Kashani, 2011) found no relationship between anxiety and English performance in Taiwanese students. Prior to the Horwitz et al. (1986) scale,

Bailey's (1983) study of competitiveness showed that facilitative anxiety was a key to success in L2 learning. Chastain (1975) found inconsistent relationships between FLCA and performance in French, Spanish, and German languages. English learners whose native language have similar grammatical structures tended to benefit more from facilitative anxiety in a study by Kleinmann (1977).

Other studies, such as Scovel's (1978) study, discussed inconclusive results in anxiety research, and speculated that the results may be partially attributable to cultural perceptions of anxiety. Andrade and Williams (2009) reviewed studies that showed that Japanese and American students perceived the characteristics of anxiety differently, leading to variance in self-reporting.

ANXIETY AND MATHEMATICS LEARNING

Studies reviewed by Iossi (2009) suggested that approximately nine in ten students experience some maths anxiety in their lifetime, most frequently when at university level of study. For many students, word problems contributed most to maths anxiety. Bursal and Paznokas (2006) found teachers with lower maths anxiety were more confident than those with higher maths anxiety in their ability to teach maths (r = -.638). Bessant's (1995) study showed that maths enjoyment and general evaluation anxiety shared a statistically significant strong negative correlation (r = -.52, p < .05). Weak to moderate negative correlations were found between maths anxiety and achievement in mathematics (r = -.31, -.27) in studies by Ma (1999) and Hembree (1990).

We can infer that students will have a greater chance at success in a content area like maths if they are instructed in their native language. Numerous studies suggest that learning maths in a second language results in maths difficulties which are greater than those experienced while learning maths in a first language (Abedi, 2003; Moschkovich, 2007; Yushau & Bokhari, 2005). Word problems have been shown to pose significantly greater difficulties for L2 learners who do not inherently understand the mathematics content or the vocabulary (Bernardo & Calleja, 2005).

Bernardo (2002) discovered, as most studies on the subject do, that maths students perform better in their first language than in their second. However, Bernardo's (2005) revised study of Filipino bilinguals found no relationship between language and modelling of maths problems. Riordain and O'Donoghue's (2009) study of bilingual Gaeilge-English speakers in Ireland found a moderate, statistically significant positive Pearson correlation between English language proficiency and performance on Englishmaths word problems among primary students (r = .41, p < .05). Pearson's correlations grew to strong levels in the secondary group (r = .65, p < .01).

Constructing multiple meanings for words and developing multiple language registers for various content areas are thought to be core obstacles to L2 maths learning (Moschkovich, 2007). Some studies suggest improved L2 comprehension can help bridge the language gap, which improves content-area performance, but still questions remain regarding the precise relationship between language and maths performance, and potential to overcome maths learning issues by improving L2 skills. Lack of research on possible correlations between FLCA and L2 maths learning leaves further questions open.

STUDY

Sample

Four-hundred and twenty-four students comprised the stratified sample of secondary students at a Thai government school in its second year of offering native-speaker ESL instruction, and its first year of providing an (MLP). Females in the sample (n = 268) outnumbered males (n = 156) at a higher ratio than in the larger student population (females = 458, males = 425). Students from each grade level (Matayom (M) 1 to M6) were included in the sample, each separated into one of twelve independent groups based upon grade and class order. Table 1 contains data describing sample size and class distribution.

Table 1: Sample statistics

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	N	% of Total	
M1/5	37	8.7	
M2/4	40	9.4	
M2/5	36	8.5	
M3/4	36	8.5	
M4/1	26	6.1	
M4/2	38	9.0	
M4/3	38	9.0	
M5/1	33	7.8	
M5/2	35	8.3	
M5/3	46	10.8	
M6/1	21	5.0	
M6/3	38	9.0	
Total	424	100	

Instruments

The FLCAS of Horwitz et al. (1986) was used to measure foreign language anxiety. The questionnaire contains thirty-three statements which participants respond to in accordance with their level of agreement or disagreement using a 5-point Likert scale where 5 indicates the highest level of FLCA and 1 indicates the lowest level. The FLCAS was translated into Thai by a single Thai faculty member and back-translated into English by two other Thai faculty members with assistance from a foreign English teacher who also understands the Thai language (see Appendix). Midterm examinations from native-speaker ESL classrooms were used to measure performance in English content among all groups.

In addition to the English exam, the immersion group was administered other tests. Students in the immersion group completed a bilingual maths exam, which contained two sections of equally difficult word problems—15 problems in the Thai language and 15 problems in the English language—and a supplementary maths exam consisting of only numerical computational problems. A grade 6 (P6) pre-ONET test was also administered to students in the immersion group. Finally, every immersion student was required to give a prepared speech in English, and later engaged in a question-and-answer session, each of which was graded with a pass or fail mark.

Procedure

Speaking tests for the immersion group were conducted by one Thai administrator, one Thai assistant teacher, and one foreign teacher. Both Thais were moderately fluent in English, and the foreign teacher was likewise moderately fluent in Thai. English was the language used in the testing procedure. Students were given ample notice and required to prepare a speech, which they recited from memory during the test. All students introduced themselves and gave a brief explanation of their family structure, hobbies, something they enjoy, or personal ambitions. Following completion of the prepared speech portion, each student was asked questions and evaluated upon their answers. Questions generally pertained to information contained in their prepared speech. The Thai assistant and foreign teacher graded students with a pass or fail, as did the administrator. In the event that there was disagreement between evaluations, the final decision was left to the administrator's discretion.

The pre-ONET exam was administered about a month prior to administration of other instruments. Several students were absent for the ONET exam. All other data was collected during the week of midterm exams, when instruments were administered to the groups. English and maths midterm exams were administered as part of regular evaluation.

The FLCAS was administered to each group prior to midterm exams in various subjects. Students took approximately twenty minutes to complete responses to the 33 items.

Analysis

Scores for each of the 33 items for each questionnaire were initially recorded in Microsoft Excel, where tables and data were first organized in tabs corresponding to independent groups. The Likert scale on the FLCAS was reversed for negatively-worded questions. Raw data was then copied and pasted into SPSS for final analyses. Various tests were run to examine linearity, normality, and homoscedasticity of variables. Initial comparisons between means were analyzed using one-way ANOVA and independent t-tests. However, ANOVA was considered to be a more robust test of the data.

ANOVA tests were run to examine differences between means in FLCAS scores between all groups, and for differences between means in the immersion group. Pearson product-moment correlations were calculated to assess relationships between FLCAS and English exam scores for all groups together. An additional Pearson correlation test was run to examine relationships between variables in the immersion group.

RESULTS

Cronbach's alpha was calculated to determine reliability of the FLCAS ($\alpha = .900$).

Descriptive statistics

Mean FLCAS scores were calculated for all groups together and separately. FLCAS scores ranged from 45 to 157. A histogram (Figure 1) shows a slight negative skew (-.221) to the normal curve. Both mode (110) and median (107) were higher than mean (105.71), indicating mild to high average levels of FLCA. Hypothesis 1 was supported.

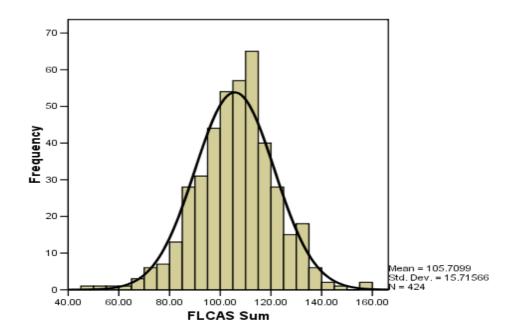


Figure 1: FLCAS Scores histogram with normal curve

Test anxiety ranked the highest among the three components of FLCA, with average for the whole group of 45.84. Communication apprehension followed at an average of 36.40. Fears of negative evaluation were lowest, with a mean score of 23.47 (n = 424).

Table 2 shows that mean FLCAS scores for all groups were within one standard deviation of the lowest mean score, M2/5 (98.19 \pm 17.57), and that of the highest mean score, M4/3 (110.16 \pm 14.49).

Table 2: Means and standard deviations

Group	Mean	N	Std. Deviation
M1/5	103.03	37	17.33
M2/4	106.15	40	18.29
M2/5	98.19	36	17.57
M3/4	107.44	36	14.02
M4/1	104.69	26	13.17
M4/2	110.03	38	12.65
M4/3	110.16	38	14.49
M5/1	109.45	33	13.35
M5/2	107.80	35	11.69
M5/3	103.57	46	16.37
M6/1	103.62	21	14.84
M6/3	103.84	38	18.84
Total	105.71	424	15.72

Pearson Correlation (FLCA & English Midterm)

A Pearson product-moment correlation was run to determine the relationship between FLCAS scores and English exam scores in all groups together. There was a very weak, negative correlation between FLCAS and English exam performance (r = -.163, n = 423, p = .001). Hypothesis 2 was supported in part.

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		FLCAS	English Mid
		Sum	Term
FLCAS Sum	Pearson Correlation	1	163(**)
	Sig. (2-tailed)		.001
	N	424	423
English Mid Term	Pearson Correlation	163(**)	1
	Sig. (2-tailed)	.001	
	N	423	423

^{**} Correlation is significant at the 0.01 level (2-tailed).

ANOVA (all groups)

FLCAS and English exam data were approximately normally distributed, as assessed by normal Q-Q plots. There was homogeneity of variances among FLCAS scores for all groups, as assessed by a Levene's test (p > .05). A statistically significant difference in mean FLCA score was found between males and females, as assessed by a one-way ANOVA. Males in the sample (103.41 ± 16.34) reported lower FLCA levels than females (107.05 ± 15.21).

ANOVA: FLCAS Score Male/Female

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1305.205	1	1305.205	5.339	.021
Within Groups	103168.113	422	244.474		
Total	104473.318	423			

A one-way ANOVA showed significant differences in FLCAS scores between class groups. A Tukey post-hoc test revealed that only scores from M2/5 and M4/3 were significantly different (p = .047). There were no other statistically significant differences in means. There was no statistically significant difference in FLCA levels between immersion program students and other students. Hypothesis 3 was supported in part.

ANOVA: FLCAS Scores by Class Group

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4954.062	11	450.369	1.864	.042
Within Groups	99519.257	412	241.552		
Total	104473.318	423			

ANOVA (immersion group)

There was homogeneity of variances among Thai and English written exam scores, and among oral exams for M1/5, as assessed by Levene's tests (p > .05). There was no violation of the normality assumption, as assessed by a Shapiro-Wilk test (p > .05) and Q-Q plots. Students in M1/5 performed better on the Thai portion of the maths exam

 (8.43 ± 2.61) than they did on the English portion (6.32 ± 2.53) . There was a statistically significant difference between languages as determined by one-way ANOVA. Hypothesis 4 was supported.

ANOVA: Immersion Group Math Exam by Language (TH/EN)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	82.216	1	82.216	12.457	.001
Within Groups	475.189	72	6.600		
Total	557.405	73			

Students who failed the prepared speech showed higher mean FLCAS scores (111.50 \pm 22.04, n = 27) than students who passed the first portion of the oral exams (99.89 \pm 14.49, n = 10). Those differences were not found by ANOVA to have been statistically significant (p = .070). ANOVA was used to determine that a statistically significant difference between groups was present for the question-and-answer portion of the oral exams. Students who passed the question-and-answer portion had lower FLCAS scores (97.17 \pm 14.74, n = 18) than students who failed the question-and-answer portion (108.58 \pm 18.13, n = 19).

ANOVA: Sum FLCAS Immersion Group v. Impromptu Q&A Performance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1203.841	1	1203.841	4.386	.044
Within Groups	9607.132	35	274.489		
Total	10810.973	36			

Pearson correlations (immersion group)

A Pearson product-moment correlation was run to determine relationships among all instruments administered to the immersion group. Most tests were positively correlated with other tests. English midterm and pre-ONET exam scores shared a very strong, positive, statistically significant correlation (r = .702, n = 29, p < .0005). English midterm and English maths exam scores shared a moderate, positive correlation (r = .334, n = 37, p = .044). A moderate, positive correlation was found between the English maths test, which contained word problems, and the supplementary maths test, which contained only numerical computational problems (r = .331, n = 37, p = .045). A strong, positive correlation was found between the Thai and English portions of the maths exam (r = .563, n = 37, p < .0005). Thai maths exam and English midterm scores shared a strong, positive correlation (r = .511, n = 37, p = .001). These correlations between test results suggest that performance in one subject can be used to predict performance in another subject.

A strong, negative correlation was found between FLCAS levels and English midterm scores, which was significant (r = -.524, n = 37, p = .001). A statistically significant moderate, negative correlation was found between FLCAS scores and pre-ONET scores (r = -.425, n = 29, p = .022). This relationship was evident through tests of all groups together. No statistically significant correlation was found between FLCAS and any maths exam score, which supports theories that maths is a language that transcends other linguistic boundaries. Hypothesis 5 was not supported.

Correlations: Immersion Group	Instruments
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		Sum	English Mid	English	Thai Math	Supplemental	Pre
		FLCAS	Term	Math Test	Test	Math Test	ONET
Sum FLCAS	Pearson Correlation	1	524(**)	237	246	130	425(*)
	Sig. (2-tailed)		.001	.158	.142	.445	.022
	N	37	37	37	37	37	29
English Mid Term	Pearson Correlation	524(**)	1	.334(*)	.511(**)	.337(*)	.702(**)
	Sig. (2-tailed)	.001		.044	.001	.042	.000
	N	37	37	37	37	37	29
English Math Test	Pearson Correlation	237	.334(*)	1	.563(**)	.331(*)	.387(*)
	Sig. (2-tailed)	.158	.044		.000	.045	.038
	N	37	37	37	37	37	29
Thai Math Test	Pearson Correlation	246	.511(**)	.563(**)	1	.199	.538(**)
	Sig. (2-tailed)	.142	.001	.000		.238	.003
	N	37	37	37	37	37	29
Supp Math Test	Pearson Correlation	130	.337(*)	.331(*)	.199	1	.338
	Sig. (2-tailed)	.445	.042	.045	.238		.073
	N	37	37	37	37	37	29
Pre ONET	Pearson Correlation	425(*)	.702(**)	.387(*)	.538(**)	.338	1
	Sig. (2-tailed)	.022	.000	.038	.003	.073	
	N	29	29	29	29	29	29

^{**} Correlation is significant at the 0.01 level (2-tailed).

Linear regression analysis

A linear regression established that FLCA accounted for only 2% of explained variability in English testing within the entire sample (F(1,421) = 11.429, p = 0.001). The regression equation for English midterm scores, out of 20 possible points, was: 16.328 - 0.036 x (FLCAS sum). Since the effect of FLCAS on English performance is very low, Hypothesis 2 was rejected in part.

Linear regression analysis performed with the data from the immersion group showed FLCA was a statistically significant predictor of English exam performance, F(1,35) = 13.273, p = 0.001 and FLCAS scores accounted for 25.4% of variability on the midterm. The regression equation was: English midterm exam score out of 20 possible points = $26.669 - 0.124 \times (FLCAS \text{ sum})$. Hypothesis 3 was rejected in part due to the difference between the immersion group and entire sample with regard to the extent that FLCA can predict English performance.

According to the linear regression analysis, FLCAS scores were not found to have any statistically significant predictive value upon any of the three maths exams within the immersion group. Hypothesis 5 was rejected.

Regression analyses within the immersion group further showed that performance on each test instrument was a statistically significant predictor of performance on each of the other test instruments.

^{*} Correlation is significant at the 0.05 level (2-tailed).

DISCUSSION

The FLCAS instrument may have been less reliable than Cronbach's alpha suggested. Many students appeared to choose one side or the other on the entire questionnaire and, as a result, appeared to misinterpret negatively worded questions. Among the 424 participants, mean response values for the negatively worded questions ($\bar{x} = 2.85$) were about half a point lower than responses on the positively worded questions ($\bar{x} = 3.33$). Considering the generally lower response on negatively-worded questions, it is conceivable that the real FLCA was higher than the instrument indicated. If FLCA scores were higher, which qualitative evidence also suggested, then the correlation could be stronger.

ANOVA tests within the immersion group relating to maths exam performance show not only enhanced difficulty with English language exams, but also some increased difficulty in solving word problems in any language. When means were compared between the three maths exams, students performed best on the one which contained no words, second best on Thai word problems and worst on English word problems. This reflects the increasing complexity of the tasks, from working with numbers only, to interpreting numbers from the first, and then second language. Increased complexity increases chances of error.

Correlations between FLCAS and performance do not indicate any direction of causality. In addition, low negative correlations in the whole sample in combination with positive inter-instrument correlations in the immersion group imply that English performance may simply relate to overall academic performance. We may have also found a relationship between reading and maths skills, which was also identified by Vilenius-Tuohimaa, Aunola, and Nurmi (2008).

Psychosocial Factors

Lack of significant differences between FLCA in the immersion and non-immersion group suggested broader causes for anxiety. Psychosocial phenomenon, like xenophobia and racism, may contribute to adverse disposition toward interacting with foreigners and persons of other ethnicities. Whether conscious or not, cultural and ethnic dispositions may affect mood, emotion and behaviour, leading to higher levels of anxiety, which could impair learning. If racism or xenophobia are robust in a community, then increased exposure to a person of a different ethnicity or nationality would be less likely to decrease levels of anxiety in individuals until a larger-order social movement occurs. In Thailand, immigration and investment law reform could spur such a larger-order change in the long term. At the local level, in the short term, children need to learn about diversity, inclusion and equality from a young age, including examples of what is not generally accepted speech.

Differences in mean FLCAS scores between pass/fail groups on oral exams in the immersion group support the idea that FLCAS and language performance are negatively associated. We can infer from negative correlations that if performance were improved, anxiety would likely decrease, or vice versa. Educators in Thailand and the majority of the world, unlike those in the US, do not have influence over psychiatric treatment and medication of their students. In Thailand, school professionals must approach the

problem of FLCA from the perspective of educators, and not as psychologists or politicians.

Considering the intra-instrument correlations between Thai and English language exams, results suggested that FLCA within the sample resembled state anxiety rather than situation-specific anxiety. Thai students may experience anxiety in the school setting, perhaps due in part to the rigid structure of daily activities and consistent use of corporal punishment by Thai faculty and administrators. Although both the Ministry of Education and National Committee on Child Protection banned the practice from 2005, more recent reports show strong resistance to change in pedagogy, with at least 60 percent of teachers supporting the practice and a majority of students experiencing abuse at some time during their schooling (Newell, 2011; UNICEF, 2012). With the threat of corporal punishment in mind, one could easily argue that students feel threatened in general, which could increase anxiety and thus decrease performance. A safe, non-threatening atmosphere is essential to proper contemporary education (Finch, 2001).

Pedagogical factors

Whereas traditional teaching methods also emphasize vocabulary and reading in maths, Moschkovich (2007) found a student-inclusive, sociocultural approach was more appropriate for teaching English maths to speakers of other languages. Kealing (2009) discussed the benefits of a communicative approach to ESL instruction, which Chinese students have been shown to expect (Li, 2011). Studies show that interactive lessons where students are engaged in the material have a greater effect on learning (Evans, 2009). If students feel a sense of control over their education, they take greater initiative inside and outside of the classroom (Patra & Behera, 2012). Thailand was said to have moved toward more student-centred learning under the 2002 National Curriculum, but consistent problems related to discipline, class size, and copying have stalled progress (Rogers, 2002). More rigid assessments of teachers and linking students' standardized test performance to teacher pay should help implementation of newer programs.

More personalized education needed

Bala and Bamba (2012) found that lack of tailored curricula and defective evaluation systems reduced quality of educational systems. These same issues could also influence FLCA if students' specific learning needs are not met by curriculum objectives. Student may experience increased anxiety if placed in a course which is far above his or her learning ability, that could increase anxiety. Likewise, if a student passes an invalid assessment and is permitted to enter a classroom with a native English speaker whose curriculum guides him or her to teach content far above the level of the student, the knowledge gap could increase FLCA.

Ideally, courses should speed up for the fastest learners and slow down for the slowest learners, but when all levels of students are mixed together in one group, no students are likely to receive personalized services. Mass marketing of education services was a popular approach in the US until the individualized education plan (IEP) revolution of the 1970s changed how educational institutions functions. Today, students receive more individual-centric education from their earliest stages of intellectual development through their exit from lower schools. In addition to special education, districts develop at least three levels of instruction, referred to as remedial, mode, and advanced

placement. Students learn among their peers at a pace and level of difficulty that is appropriate for them. The system has shown its advantages for all levels of learning, and is something every country should implement. A student placed in a classroom more consistent with his or her learning abilities will likely experience less FLCA, thus potentially amplifying his or her performance.

In the end, however, nothing may induce anxiety in students more than a bad teacher. ESL teachers in a study by Batt (2008) said that great challenges were posed by inadequately trained colleagues who lacked knowledge and skill in both teaching English language learners and understanding diversity or multicultural education. Educators should be certified and licensed in every case, so that others know that they have special training or skill in relevant subjects. Governments should require passing grades on content exams before teachers are authorized to instruct students without supervision. Native speaking teachers, especially those in some locations where demand far exceeds supply, may have market power to bargain on this issue but, at very least, foreign teachers should have a bachelor's degree and some form of TEFL/TESOL certificate. In Thailand, a more stable and professional brand of foreign teacher is needed in many districts. More gender diversity and professional qualifications among foreign teachers in Thailand could help even out male and female average FLCA levels.

CONCLUSION

A low, negative correlation between FLCA and English performance was found, which supported prior studies suggesting that anxiety has a primarily debilitating effect on language learning. The extent to which FLCA can be quantified as a predictive factor of English performance across groups was inconclusive. No significant relationship was found between FLCA and maths performance, which supports multiple intelligences theory. No significant difference was found between FLCA levels in the immersion group as compared to non-immersion groups, suggesting that increased exposure to foreign teachers did not decrease FLCA, which was found to be a predictive factor of English performance in the immersion group.

Results from this study carry a range of implications. Reducing student anxiety is a general objective of any credible educational institution, and, as such, regardless of any active or null effects, stakeholders should make attempts to reduce stressors and causes of such anxiety. Legal policy changes relating to inclusion and naturalization of long-term resident foreigners in Thailand, enhanced public service announcements and community engagement programs could help Thais feel more comfortable with persons of other colours, nationalities, and races. As adults change their ideals, and if immigration policy changes, Thai children will inherently understand that foreigners are a permanent and natural part of the Thai system, thereby probably reducing anxieties.

The education institution needs to be repaired and updated. In order to support educational improvements, local government budgets need to be expanded, which requires a more comprehensive tax system in the longer term. In the short term, this study, along with discussion among colleagues, suggests that more open and transparent communication is needed between primary and secondary schools. Teachers need to meet national curriculum guidelines or campaign to amend them. All teachers need to understand and implement national policies relating to their profession, including the

prohibition of corporal punishment, which this researcher found a likely primary cause of anxiety while at school.

Primary teachers need to send students to secondary levels with required skills to succeed and feel comfortable doing so. Placement assessments are needed to appropriately group students by ability level, not necessarily by age level. Teachers also need the option to fail a student so the 12th grade is not half-full with learners demonstrating a 4th grade comprehension of the language. A nationwide executive mandate is likely required to implement use of the fail mark.

Ideally, all parents should work with their children at home to improve their studies. Teachers and administrators should be open-minded and available, and districts should offer more tailored services to suit specific needs of individuals. Doing well in school is a complex combination of internal and external strengths and advantages. It takes hard work, natural intelligence, plenty of help from others, and a little luck to be number one in education. Both reducing FLCA and improving performances will take the unified efforts of multiple persons. Sharing of information and continued research will be important aspects of developing a more functional system.

FURTHER RESEARCH NEEDED

Multiple language research is needed to understand differences in anxiety levels, and associations between FLA and performance in foreign languages in the ASEAN region. One can infer that general student anxiety is probably lower when learning a regional language than with learning English, but more scientific study is required to positively endorse such a hypothesis.

The relationship between language and subjects other than maths and English in immersion programs needs to be inspected more. In future studies, the full spectrum of content areas should be assessed for their associations with language performance and FLCA.

Wilson (2006) found moderate, statistically significant negative Pearson correlation between time spent learning English in schools and FLCA (r = -.329, n = 40, p = .038). For various reasons, such as to assess the long-term potential benefits of starting an ESL program at a particular school, or to estimate the number of years of English instruction required to mitigate anxiety levels—further research is needed in various school districts to understand the relationship between FLCA and time spent learning English. Longitudinal studies should be developed so that teachers, administrators, and officials can better understand their students.

Results from our study showed that students in the immersion program did not have significantly lower levels of FLCA than students in non-immersion programs. Further research is needed to determine whether or not FLCA levels may decrease over years enrolled in an immersion program, or over years of learning with a native speaker. In future studies, a revised version of FLCAS which features only positively worded questions may be more appropriate for Thai secondary school samples.

Finally, studies relating to effectiveness of corporal punishment and disciplinary systems may help researchers understand student anxiety more broadly.

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APPENDIX 1: FOREIGN LANGUAGE CLASSROOM ANXIETY SCALE (ENGLISH AND THAI)

The first question on each scale in this appendix contains the Likert scale which was included on each question in the original survey.

English translation

1.	I never feel class.	quite sure	of myse	elf when	I am	speaking	in my	foreig	n 1	language
	trongly Agree Disagree	☐ Agre	ee 🗆 N	leither Agi	ree nor	Disagree	□ Disa	gree [Strongly

- 2. I don't worry about making mistakes in language class.
- 3. I tremble when I know that I'm going to be called on in language class.
- 4. It frightens me when I don't understand what the teacher is saying in the foreign language.
- 5. It wouldn't bother me at all to take more foreign language classes.
- 6. During language class, I find myself thinking about things that have nothing to do with the course.
- 7. I keep thinking that the other students are better at languages than I am.
- 8. I am usually at ease during tests in my language class.
- 9. I start to panic when I have to speak without preparation in language class.
- 10. I worry about the consequences of failing my foreign language class.
- 11. I don't understand why some people get so upset over foreign language classes.
- 12. In language class, I can get so nervous I forget things I know.
- 13. It embarrasses me to volunteer answers in my language class.
- 14. I would not be nervous speaking the foreign language with native speakers.
- 15. I get upset when I don't understand what the teacher is correcting.
- 16. Even if I am well prepared for language class, I feel anxious about it.
- 17. I often feel like not going to my language class.
- 18. I feel confident when I speak in foreign language class.
- 19. I am afraid that my language teacher is ready to correct every mistake I make.
- 20. I can feel my heart pounding when I'm going to be called on in language class.

- 21. The more I study for a language test, the more confused I get.
- 22. I don't feel pressure to prepare very well for language class.
- 23. I always feel that the other students speak the foreign language better than I do.
- 24. I feel very self-conscious about speaking the foreign language in front of other students.
- 25. Language class moves so quickly I worry about getting left behind.
- 26. I feel more tense and nervous in my language class than in my other classes.
- 27. I get nervous and confused when I am speaking in my language class.
- 28. When I'm on my way to language class, I feel very sure and relaxed.
- 29. I get nervous when I don't understand every word the language teacher says.
- 30. I feel overwhelmed by the number of rules you have to learn to speak a foreign language.
- 31. I am afraid that the other students will laugh at me when I speak the foreign language.
- 32. I would probably feel comfortable around native speakers of the foreign language.
- 33. I get nervous when the language teacher asks questions which I haven't prepared in advance.

Thai translation

1.	ฉันรู้สึกไม่มันใจในตนเองเวลาที่พูดในวิชาภาษาอังกฤษ						
	ในด้วยอย่างยิ่ง □ เห็นด้วย □ ไม่ใช่ทั้งสองอย่าง □ ไม่เห็นด้วย □ นด้วยอย่างยิ่ง						
2.	ฉันไม่กังวลเรื่องการทำสิ่งผิดพลาดในวิชาภาษาอังกฤษ						
3.	ฉันตัวสั่นเมื่อรู้ว่าจะถูกเรียกในวิชาภาษาอังกฤษ						
4.	ฉันรู้สึกกลัวเมื่อไม่เข้าใจว่าคุณครูกำลังพูดอะไรในวิชาภาษาอังกฤษ						
5.	ไม่เป็นปัญหาสำหรับฉันเลยที่จะเรียนวิชาภาษาอังกฤษเพิ่มมากขึ้น						
6.	ในระหว่างเรียนวิชาภาษาอังกฤษฉันครุ่นคิดถึงงานต่างๆ วิชานี้ไม่เห็นมีอะไรให้ทำ						
7.	ฉันมักคิดว่านักเรียนคนอื่นๆเก่งภาษาอังกฤษมากกว่าตัวเอง						
8.	ฉันรู้สึกสบายๆในระหว่างทำข้อสอบวิชาภาษาอังกฤษ						
9.	ฉันเริ่มหวั่นวิตกเมื่อต้องพูดโดยปราศจากการเตรียมตัวในวิชาภาษาอังกฤษ						
10.	ฉันกังวลเกี่ยวกับผลการสอบตกในวิชาภาษาอังกฤษ						
11.	ฉันไม่เข้าใจว่าทำไมนักเรียนบางคนถึงกระสับกระสายเป็นอย่างมากในชั่วโมงวิชาภาษาอ						
กฤษ							
12.	ในวิชาภาษาอังกฤษฉันตื่นเต้นมาก จนลืมสิ่งที่ฉันรู้						
13.	ฉันรู้สึกอายที่จะรับอาสาเป็นผู้ตอบคำถามในวิชาภาษาอังกฤษ						
14.	ฉันไม่ประหม่าในการพูดภาษาอังกฤษกับเจ้าของภาษา						
15.	ฉันสับสนเมื่อไม่เข้าใจว่าครูให้แก้อะไร						
16.	ถึงแม้ว่าฉันเตรียมตัวมาอย่างดีในวิชาภาษาอังกฤษ ฉันก็ยังรู้สึกกังวลกับวิชาภาษาอังกฤษ						
17.	ในหลายๆ ครั้ง ฉันรู้สึกเข้าไม่ถึงในวิชาภาษาอังกฤษ						
18.	ฉันรู้สึกมั่นอกมั่นใจเวลาที่พูดในวิชาภาษาอังกฤษ						
19.	ฉันกลัวว่าครูจะตรวจ แก้สิ่งผิดพลาดทุกอย่างที่ฉันทำ						
20.	ฉันรู้สึกว่าหัวใจเต้นรัวเมื่อจะถูกเรียกในวิชาภาษาอังกฤษ						

Adam R. Tanielian

- 21. ฉันศึกษาข้อสอบภาษาอังกฤษมากเท่าไหร่ ยิ่งสับสนมากเท่านั้น
- 22. ฉันไม่รู้สึกกดดันเมื่อเตรียมตัวมาเป็นอย่างดีในวิชาภาษาอังกฤษ
- 23. ฉันรู้สึกเสมอว่านักเรียนคนอื่นๆพูดภาษาอังกฤษได้ดีกว่า
- 24. ฉันระมัดระวังเป็นอย่างมากเรื่องการพูดภาษาอังกฤษต่อหน้านักเรียนคนอื่น
- 25. วิชาภาษาอังกฤษผ่านไปอย่างรวดเร็วและฉันกังวลเกี่ยวกับสิ่งที่เรียนที่ผ่านมา
- 26. ฉันรู้สึกตึงเครียดและกังวลในวิชาภาษาอังกฤษมากกว่าในวิชาอื่นๆของฉัน
- 27. ฉันกังวลและสับสนเวลาที่พูดในวิชาภาษาอังกฤษ
- 28. เมื่อฉันเรียนภาษาอังกฤษในแบบวิถีทางของตัวเองฉันรู้สึกมั่นใจและรู้สึกสบายใจ
- 29. ฉันรู้สึกกังวลเวลาที่ฉันไม่เข้าใจในทุกๆคำพูดของคุณครู
- 30. ฉันรู้สึกพ่ายแพ้ต่อหลักเกณฑ์ที่ต้องเรียนรู้ในการพูดภาษาอังกฤษ
- 31. ฉันเกรงว่านักเรียนคนอื่น จะหัวเราะ เวลาที่ฉันพูดภาษาอังกฤษ
- 32. ฉันรู้สึกสบายใจเวลาอยู่ใกล้ๆเจ้าของภาษา
- 33. ฉันรู้สึกตื่นเต้นเวลาที่คุณครูถามคำถามที่ไม่ได้เตรียมตัวมาก่อนล่วงหน้า