# A Comparative Study on the Effect of Teaching Mode on English Majors' Learning Anxiety: Flipped Classroom vs. Traditional Classroom

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## Abstract

With the rapid development of information technology, multimedia and network play an important role in education. It not only triggers the innovation of education, but also puts forward higher requirements for the English majors. Based on the flipped classroom teaching mode and the Foreign Language Classroom Anxiety Scale (FLCAS) proposed by Horwitz et al. (1986), a questionnaire survey and semi-structured interviews are conducted among senior English Majors from a local college in order to explore the differences of learners' anxiety level under traditional classroom teaching mode and flipped classroom teaching mode. In addition, the relationship between students' English learning proficiency and their anxiety levels in flipped classroom mode is analyzed.

By using SPSS 26.0, a quantitative and qualitative analysis is conducted on the collected data from questionnaires and interviews and yield the following results. Firstly, there is no significant difference in learners' anxiety level between traditional classroom and flipped classroom mode. In both teaching modes, among the four categories of factors, the category of communication apprehension factors has the greatest impact on students' anxiety level. But compared with the traditional classroom mode, flipped classroom mode is more conducive to alleviate English majors' foreign language learning anxiety. Secondly, in the flipped classroom mode, English majors' learning proficiency level has low negative correlation with students' anxiety level.

**Key words:** Flipped classroom; Traditional classroom; Foreign language anxiety; Learning proficiency; English majors

## 1. INTRODUCTION

With the rapid development of information technology, multimedia and network play an important role in education. It not only triggers the innovation of education, but also puts forward higher requirements for the English majors. In recent years, flipped classroom mode has been widely used in college foreign language teaching.

Bergmann & Sams (2012) proposed that flipping the classroom establishes a framework that ensures students receive a personalized education tailored to their individual needs. Milman (2012) stated, "The idea is that rather than taking up limited class time for an instructor to introduce a concept (often via lecture), the instructor can create a video lecture, screencast, or videocast that teaches students the concept, freeing up valuable class time for more engaging (and often collaborative) activities typically facilitated by the instructor." Through comparison between traditional mode and flipped classroom, Wang Honglin and Zhong Shouman (2017) harbored the attitude that flipped teaching is more than reversion of modes, in essence, it's the reconstruction of the concept of teaching and learning, from Teachers' teaching to students' learning. In other words, in a flipped classroom the information-transmission session dominating a traditional classroom is transferred to the outside class time, which are replaced by interactive and collaborative tasks instead.

There are numerous affective factors responsible for the actual effectiveness in the process of second language acquisition. Among them, foreign language anxiety has occupied essential position in acquiring second language.

Krashen (1980) believed that in the process of foreign language learning, anxiety is one of the most important affective variables affecting the outcome of language learning. The higher the degree of anxiety of learners, the more obvious the effect of affective filtering, which hinders learners from receiving language input and makes it difficult to acquire progress in language learning. In addition, Horwitz (2001) demonstrated that foreign language anxiety occurs in the process of foreign language learning and it causes a series of worries and fears during the language learning process. With the rapid spreading of flipped classroom mode in the reforming of College English classes, many scholars (Gao and Li, 2016; Huang, 2021) in China have tried to investigate the effect of this new teaching mode on college students' learning anxiety. Though they have found multiple factors responsible for Students' English learning anxiety, including learners' English proficiency, motivations, interests, design of tasks, interpersonal cooperation, the teachers, and evaluation modes, some concluded that Flipped classrooms could decrease learners' learning anxiety, while others achieved contradictory results.

In order to verify the internal relations between anxiety levels and the teaching modes, i. e. flipped and traditional classrooms, a questionnaire survey and semi-structured interviews are conducted among senior English Majors from a local college. Through quantitative analysis of the data collected, it is hoped to find the most influential factors that contributes to foreign language learning anxiety and make some suggestions for teachers on how to tailor the flipped classroom mode to meet the learning needs of English learners in China

## 2. FLIPPED CLASSROOM AND FOREIGN LANGUAGE ANXIETY

### 2.1 The Development of Flipped Classroom Mode

The prototype of flipped classroom comes from the United States. Salman Khan, a Bangladeshi American, to remotely answer his cousin's math problems in 2004, he answered his cousins' math problems in the form of videos. In 2007, Khan established the famous Khan college, a non-profit website dedicated to explaining the contents of different subjects and answering questions by videos The website also provides learning tools such as online exercises, self-assessment and progress tracking. This teaching mode gain great popularity among teenagers and people from all works. Khan (2012) explained that the flipped classroom is to let students learn at their own pace at home and solve problems with teachers and students in the classroom.

Flipped classroom, as the name suggests, is to reverse traditional classroom. The concept of the flipped classroom is the combination of reversed inside and outside classroom activities. Different scholars have various definitions about this new teaching mode. As Bergmann & Sams (2012) stated flipped classroom in their book: "flipping the classroom means what is traditionally done in the classroom now done at home, and homework in the traditional sense is now done in the classroom." According to Milman (2012) , this kind of teaching mode can be defined as "The idea is that rather than taking up limited class time for an instructor to introduce a concept (often via lecture), the instructor can create a video lecture, screencast, or videocast that teaches students the concept, freeing up valuable class time for more engaging (and often collaborative) activities typically facilitated by the instructor."

Bergmann & Sams (2012) summarized the basic features of flipped classroom as follows: a)it increases personal communication between teachers and students and interactions between students; b)teachers are not dominators of the classroom but instructors to guide the students; c) direct teaching and constructive learning are integrated; d) Students take responsibility for their own learning at their own pace; e) the content of the course is preserved permanently with easy access; f) all students can participate and receive personalized education.

Clearly, we can draw from above researches that flipped classroom is a teaching mode that can be defined as an educational technique consisting of two parts: interactive group learning activities inside the classroom and direct computer-based individual instructions outside the classroom. Moreover, its teaching is more than inversion of traditional teaching mode. In essence, it's the reconstruction of teaching and learning, from teacher-centered lectures to students-centered learning.

### 2.2 English Teaching and Flipped Classroom in China

In China, we found that the research on flipped classroom started later than the America, but since 2012 relevant researches have attracted increasing attention from Chinese scholars and teachers. The flipped classroom mode has been applied to all subjects from primary education to higher education. Some scholars in China have discussed the related concepts and theories of flipped classroom. Other scholars have discussed such topics as the construction of foreign language teaching mode based on flipped classroom, the integration of MOOCs and flipped classroom and tried to find the merits and demerits in order to solve the problems and make it suitable for Chinese learners.

Cui Yan and Wang Yi (2014) discussed the problems of "Exam-oriented" teaching mode in most English classrooms from China, which would undermine students' learning enthusiasm and concluded that flipped classroom which adopted the new teaching mode of "learning before teaching", was helpful to cultivate students' active learning ability, and would help students

to expand the space of learning from the passive in-class leaning to active outside class time. Wang Honglin and Zhong Shouman (2017) attempted to combine flipped classroom with micro courses and MOOCs in order to find possible ways for reforming China's foreign language classroom. Micro courses, MOOCs (massive open online courses) and flipped class are the embodiment of modern educational technologies. Micro courses include micro video lectures made by the teachers for the students of their own courses while MOOCs (massive open online courses) is a large-scale online open course, which is accessible freely for all students in China. They also proposed flipped classroom teaching procedure as follows: "Before class, teachers make micro videos for students to learn by themselves. In class, teachers answer questions that students propose, conduct teacher-student discussion, or ask students to display what they have learned when students are supposed to apply and internalize the newly-learnt knowledge. Zeng Wenjie et al (2020) explored the characteristics of flipped classroom and proposed some strategies on how to design a student-centered flipped classroom for college students. Firstly, teachers should consider the cultural differences between China and the West when implementing this teaching mode. Secondly, teachers and researchers should continue to explore how to combine flipped classroom with modern technology. Thirdly, flipped classroom should cater for the distinct features of different courses and learning needs of the students.

## 2.3 Foreign Language Anxiety

While different scholars have different definitions of anxiety, which are relevant to the definition of "foreign language anxiety". In the *Dictionary of Psychology* (1996), anxiety is defined as an unpleasant emotion generated when an individual expects some adverse consequences or vague threats to appear, characterized by tension, worry or fear. Since the 1980s, progress has been made in researches on foreign language anxiety.

### 2.3.1 Definition of Foreign Language Anxiety

Horwitz et al. (1986) first isolated foreign language anxiety from other social anxieties, he believed that anxiety is a subjective feeling of tension, apprehension, nervousness, and worry associated with an autonomic nerve system. He thought of Language anxiety as a complex of self-cognition, belief, emotion and behavior, which happens because of the uniqueness of classroom learning process s, and composed of Foreign Language Classroom Anxiety Scale (FLCAS). The general symptoms of foreign language learning anxiety are "sweating in the palm of the learner's hand; abdominal pain; rapid heartbeat and pulse" and so on. At the same time, the further reaction of foreign language learning anxiety may be manifested in the following behaviors, such as "voice tone change; unable to send out voice and

rhythm normally; feeling 'frozen' when standing up to answer questions; even unable to speak at all, just keeping silent", etc. (Young, 1992). Macintyre & Gardner (1994) put its definition as a feeling of tension and fear that has a special relationship with the foreign language context.

Foreign scholars' studies on the foreign language anxiety developed on the basis of education psychology, which began in 1940 and developed a systematic theoretical framework of language learning anxiety.

### 2.3.2 The Effect of Anxiety on Language Learning Scholars held opinions that foreign language anxiety is associated with learners' performance and achievement

Krashen (1980) believed that in the process of foreign language learning, anxiety is one of the most important affective variables affecting the effect of language learning. The higher the degree of anxiety of learners, the more obvious the effect of affective filtering, which hinders learners from receiving language input and makes it difficult to make progress in language learning. Gardner & Macintyre (1994) claimed that language anxiety was correlated with foreign language achievement. Philips (2012) studied the impact of foreign language learning anxiety on the French test scores of 100 college students in French class by using interview and foreign language classroom anxiety scale as tools. The results showed that there is a significant negative correlation between students' foreign language learning anxiety level and oral test scores.

### 2.3.3 Factors of Foreign Language Anxiety

Ganschow et al. (1994) tested the students' proficiency level in their mother tongue, spoken language, written language and foreign language and found that the real cause of foreign language learning anxiety is the native language deficiency. Horwitz(2001) pointed out that English grades and teachers were two main causes of language learning anxiety. Macintyre & Gardner (1991) suggested that students' anxiety were correlated to language capability and had individual differences. Language anxiety was mainly manifested in listening and speaking activities. Furthermore, it may lead to negative results, such as reduced vocabulary output, blocked vocabulary learning, low scores in language exams and standardized tests, which impinges on language learning. Moreover, anxiety is also closely related to the environment. Alrabai (2014) conducted a research to investigate the levels and sources of foreign language anxiety (FLA) among 1389 Saudi EFL learners. Learners were asked to report the amount of anxiety they typically experienced in English language classes and the potential causes that aroused their feelings of language anxiety. The Foreign Language Classroom Anxiety Scale (FLCAS) was used to evaluate learners' anxiety. Participating learners in the three studies reported moderate to high levels of anxiety, with communication being the key

cause of learners' language anxiety. Through distributing questionnaires to 149 management major students, Toyama & Tamazaki (2018) conducted an exploratory factor analysis to extract factors from all 33 items of FLCAS and then carried out the confirmation factor analysis to prove the factors among 237 English language learners from two different universities. The study identified two factors: 1) communication apprehension; 2) fear of failing. After confirming analysis, they found that the two-factor mode may be applicable to the examination of anxiety of students who took English as second language. On the other hand, it was found that students' foreign language anxiety fluctuated at different stages. Kurk (2018) conducted an interview survey among 52 Polish senior high school students aged 17 to19, who were all learners of English. The analysis of the interview data revealed that during the three interview sessions the interviewees reported more anxiety when it came to their abilities in solving various language tasks, particularly when it came to grammar, vocabulary and pronunciation. The study also showed that the highest level of anxiety was displayed by the subjects at the beginning of the class and it was the lowest at the end of it.

## 2.4 Flipped Classroom and Foreign Language Anxiety

In the 1990s, many Chinese scholars began to conduct researches on foreign language anxiety and made some preliminary findings. In the early stage, the researches mainly focused on explaining and summarizing the existing theories on anxiety developed abroad. Then, the number of papers about foreign language anxiety is increasing dynamically with empirical researches as the main researching method, most of which focused on English learning anxiety rather than on learning anxiety of Russian, Japanese or Chinese as a second language. In recent years, a lot of Chinese researchers conducted empirical studies on college students' English learning anxiety in flipped classroom mode by comparing it with that in traditional classrooms.

### 2.4.1 The Effect of Flipped Classroom on Students' Anxiety

Chen Wei (2019) conducted a contrastive study among 72 freshmen majoring in English, who were divided into a control group under traditional teaching mode and an experiment group under the flipped classroom mode. The results showed that Students' learning anxiety of the experiment group is significantly higher than that of the control group. Most of the students' language anxiety in flipped classroom has increased to a higher level, but the students' anxiety in traditional classroom is of medium level and shows a downward trend at the end of the experiment. However, the factors of serious anxiety caused between the two groups are similar, that is, communication fear, teacher-student interaction fear and negative evaluation fear. Combined with a semi-structured

interview, Gao Zhao and Li Jingnan (2016) made a questionnaire investigation among English teachers and students. The results proved that students' degree of anxiety in flipped classrooms was obviously higher than that in traditional classrooms. Anxiety mainly derived from more frequent presentations and in- class tests in flipped classrooms. Learners with instrumental motivation displayed higher anxiety than those with integrative motivation, and poor learners reported higher anxiety than good learners. In other words, there was a significant negative correlation between English level and classroom anxiety. Though the above-mentioned scholars confirmed the effect of flipped classroom mode on increasing students' anxiety, another scholar (Huang Dongmei, 2021) came up with a different conclusion. She conducted a qualitative and quantitative research in two classes and their teachers and found that flipped classrooms can significantly reduce learners' overall classroom anxiety, expression anxiety and classroom teaching anxiety, and improve their self-confidence.

### 2.4.2 Dynamism of Foreign Language Anxiety

A number of empirical researches in China have found that students' foreign language learning anxiety tend to change at different stages of learning in English classes. Guan Jin & Shi Yunzhang (2015) did a qualitative research among 4 students and came to the following findings: a) Classroom anxiety will change at any time, and the later state will be transformed from the previous stage; b) There is an internal positive correlation between classroom anxiety and task difficulty, that is, the more difficult the classroom task is, the higher the level of anxiety; c) At the beginning of each task, the anxiety degree increases, while at the end of the task, the anxiety decreases; d) When students are dealing with simple tasks, anxiety increase can be attributed to difficult words and new words. Huang Dongmei (2021) also found that learners' classroom anxiety level was in a fluctuating state, the anxiety in the early stage is obvious, but it decreased in the later stage, which showed an overall downward trend. The change of anxiety level was mainly related to learners' interest in the topic, the completion of pre class tasks, the type and difficulty of classroom tasks, the degree of group interpersonal relationship and cooperation, the way of teacher-student interaction and teacher feedback.

With more and more attention paid to foreign language learning anxiety, scholars in China have also put forward some strategies to reduce students' anxiety and the causes of anxiety. Lei Xiao (2004) investigated 67 College English students' classroom anxiety in foreign language learning by means of questionnaires and interviews. The results showed that anxiety is common among these students, and the anxiety of poor students is more serious than that of good students. He also put forward some strategies to reduce students' anxiety, such as improving students' understanding of language learning

and cultivating their self-confidence, improving teachers' understanding of language teaching, improving students' learning autonomy and reducing test anxiety. Wu Long and Su Rui (2014) put forward some suggestions on how to reduce learners' anxiety. Firstly, learners themselves are the most vital factor of alleviating the anxiety levels. Before class, it is necessary for learners to make a positive evaluation of themselves and establish a certain degree of self-confidence. In class, if learners have a certain fear of difficulties arising from the tasks to be completed, they should cultivate their learning strategies. Next, learners are suggested to interact more with peers and teachers in learning process.

## 3. RESEARCH DESIGN

### 3.1 Research Questions
The present study aims to investigate the internal relations between learners' anxiety levels and the teaching modes, i. e. flipped and traditional classroom. Three research questions are addressed as follows:

• Is there any significant difference in English majors' anxiety levels between the traditional classroom and the flipped classroom?

• Which factors tend to affect English majors' anxiety levels most in flipped and traditional classroom respectively?

3) • How does students' English proficiency influence English majors' anxiety level in flipped classroom?

### 3.2 Participants
The participants were Senior English majors at Zhijiang College of Zhejiang University of Technology, all of whom have taken the compulsory course of *Advanced English* which is taught in a traditional mode. Among them, 48 students chose the course of *Cross-cultural Communication* which was taught in the mode of flipped classroom. All the participants were seniors majoring in English in this college, aging between 20 and 22 years old.

### 3.3 Instruments

#### 3.3.1 Questionnaire
In this study, Foreign Language Classroom Anxiety Scale (FLCAS) was utilized as an instrument to design the questionnaires concerning learners' anxiety. Horwitz et al. (1986) designed a self-report anxiety measurement through the clinical experience, interviews with language experts, and former literature sources. In China Wang Caikang (2003) has already tested the validity of FLCAS among 418 sophomores studying English.

A Chinese version of Foreign Language Classroom Scale (Horwitz et al., 1986) was translated with the word "foreign language" changed into "English".

The questionnaire consisted of 33 5-point Likert type questions about language learning anxiety. It highlighted a general description of affection in language learning context. The goal of FLCAS was to identify anxious English learners and to measure their anxiety level. FLCAS questionnaires in this research aimed to measure students' levels of anxiety in traditional teaching mode and flipped classroom mode respectively. The participants were required to choose one of the alternatives: 1) Strongly disagree; 2) disagree; 3) Not either agree or disagree; 4) agree; 5) strongly agree. The theoretical score of FLCAS ranges from 33 to 165.

On the basis of the classification of Horwitz et al.'s (1986), the questions are divided into four categories. The first category is communication apprehension (CA ), including items 1, 4, 9, 14, 15, 18, 24, 27, 29, 32, and 33. The second category is fear of negative evaluation (NEF), consisting of items 2, 3, 7, 13, 19, 20, 23, 31. The third category is test anxiety (TA), including items 8, 10, 21. The remaining items (5, 6, 11, 12, 16, 17, 22, 25, 26, 28, and 30) makes up the last component, labeled as the category of general anxiety (GA) about English class. The reverse scoring questions are 2, 5, 8, 11, 14, 18, 22, 28 and 32, for which the choices of students must be recoded. The choice (1) *strongly disagree* which means low anxiety must equate with 5. Therefore, in this way high score stands for high foreign language classroom anxiety and the lower the score for less anxiety.

#### 3.3.2 Semi-structured Interview
In order to elicit more detailed information about the factors that contribute to English learning anxiety, an interview is conducted in which four students are selected as interviewees. The interview outline is mainly composed of questions concerning participants' views on their work burden at pre-class, while-class, and post-class stages in flipped classrooms. In order to ensure the accuracy and the validity of the questions, several researchers asked to help revise the questions together, and determine the outline of the interview.

### 3.4 Research Procedures

#### 3.4.1 Data Collection
The questions in the questionnaire were written in Chinese so that the subjects could understand the questions well and provide accurate answers. The researcher distributed anonymous questionnaires through an app called "questionnaire star". The subjects were told that the survey was for research purposes only and that the information given by them would in no way affect their grades honestly. They are reminded not to discuss the questions with others.

The collected questionnaires were checked for missing data or the same answers for every item in the questionnaire. A total of 88 questionnaires were distributed and 68 valid questionnaires were recovered, leaving a sample size of 68. The data was analyzed with the help of SPSS 26.0.

An analysis of item reliability was computed using SPSS (scale analysis). The results showed that the questionnaire demonstrated internal reliability, achieving an alpha coefficient of 0.89, which meant that internal reliability was good.

This researcher conducted a semi-structured interview with four students who have taken *cross-culture communication* course in order to find out the factors influencing the foreign language anxiety of English majors under the flipped classroom teaching mode. The interviewees were selected according to their TEM4 scores, which are 83(S1), 76(S2), 62(S3) and 58(S4) respectively.

In order to find the relations between students' English proficiency and anxiety level, the participants are divided into 2 groups: the group of high score (within the top 25% of all) and the group of low score (within the bottom 25% of all) on the basis of their TEM-4 scores. The group of low score ranges from the score of 58 to 65 consisting of 17 subjects; the group of high score ranges from the score of 73 to 83 with 17 subjects.

### 3.4.2 Data Analysis

All the data collected by questionnaire were analyzed with SPSS26.0. The collected data from the questionnaires and their scores in the FLCAS were input into SPSS26.0 manually. Firstly, descriptive statistics, such as the means, std. deviation, etc. was used in this study to present a general picture of the participants' anxiety level in English classrooms. Secondly, independent sample tests were used to make a comparison of the anxiety levels in flipped classroom and in traditional classroom in order to give some implications about the effect of the flipped classroom teaching. Thirdly, Pearson correlation analysis was employed to detect the relationship between English majors' language proficiency and their anxiety levels in flipped classroom.

The data of semi-structured interview was to figure out the factors influencing the foreign language anxiety of English majors under the flipped classroom teaching mode, covering the various learning stages of a flipped classroom, namely, before class, in class, and after class, especially during class. For example, the question "What activities do you do in class that make you feel stressed or anxious?" is aimed to figure out the inducement of students' learning anxiety in flipped classroom. Four students were invited to participate in the interviews one by one on March 8, 2022, with each interview lasting ten-minute in a classroom. The researcher transcribed the recordings and marked the keywords and sentences, mainly including students' descriptions of FLA experience in different learning stages of the course, and then analyzed the causes of students' foreign language anxiety.

## 4. RESULTS AND DISCUSSION

To find the difference in the subjects' anxiety levels in English classrooms of different modes, a comparison of the FLCAS scores the in flipped classroom and traditional classroom is made through different scales.

### 4.1 Comparison of Learners' FLA in Flipped Classroom (FC) and Traditional Classroom (TC)

#### 4.1.1 Differences in Students' Anxiety Level under FC and TC

According to the categorization of the anxiety level proposed by Alrabai (2014), classroom anxiety can be divided into five levels from "very low anxiety" to "higher anxiety", that is, very low anxiety (33-82), moderately low anxiety (83-89), moderate anxiety (90-98), moderately high anxiety (99-108), high anxiety (109-165). The learners' FLCAS scores at each level are calculated separately for each teaching mode, as indicated in Table 1.

**Table 1**
**Distribution of FLCAS levels under FC and TC**

| | Anxiety level | FLCAS scores | Flipped classroom （MD=99.9767） | | Traditional classroo （MD=107.1600） | |
|---|---|---|---|---|---|---|
| | | | Number | Percentage | Number | Percentage |
| 1 | Very low anxiety | 33 ~ 82 | 5 | 11.6% | 2 | 8% |
| 2 | Moderately low anxiety | 83 ~ 89 | 9 | 20.9% | 2 | 8% |
| 3 | Moderate anxiety | 90 ~ 98 | 7 | 16.27% | 4 | 16% |
| 4 | Moderately high anxiety | 99 ~ 108 | 9 | 20.9% | 6 | 24% |
| 5 | High anxiety | 109 ~ 165 | 13 | 30.2% | 11 | 44% |
| Total | | | 43 | 100% | 25 | 100% |

According to Table 1, only 51.1% of the learners in the flipped classroom experience anxiety above the moderately high level, but 68% of the learners in the traditional classroom feel a moderately high anxiety level or above, which fully shows that the traditional English classroom makes more students feel greater anxiety.

From Table 2, it can be found that the mean of students' FLCAS scores in traditional classroom (M=107.1600) is higher than that in flipped classroom (M= 99.9767), which verifies the conclusion drawn from table 1. In other words, students tend to feel greater anxiety in traditional classroom than in flipped classroom. The possible reasons can be analyzed as follows: Firstly, under the traditional teaching mode, most students do not preview before class. In class, they mostly listen to the teacher's lecturing and follow the teacher passively

where there are few opportunities for interactions between the teacher and the students. Therefore, students rarely actively answer questions when they are called. When they answer questions, they are afraid to speak due to the fear of making mistakes. In addition, in order to complete the teaching contents in the limited classroom time, teachers often can't give students enough time to digest knowledge and prepare for the answers. In addition, because teachers often correct students' mistakes immediately in class, students are easy to feel anxious in this tense classroom atmosphere. Secondly, in the flipped classroom mode, teachers often require students to discuss and solve problems in groups where they can talk with peers and teachers. This cooperative learning activity can not only enhance the team spirit, but also create a safe and positive classroom atmosphere, thus alleviating students' communication anxiety and fear of negative evaluation anxiety.

**Table 2**
**Overall FLCAS scores under FC and TC**

|  | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| FLCAS scores in FC | 99.9767 | 43 | 19.3962 | 2.9579 |
| FLCAS scores in TC | 107.1600 | 25 | 16.6500 | 3.3300 |

In order to confirm whether there is a significant difference in learners' anxiety level between the two teaching modes, an independent Sample T-Test is conducted, as indicated in Table 3.

**Table 3**
**Independent Sample T-Test of FC and TC  (Independent Sample T-Test)**

| Flcas scores | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | | |
|  |  |  |  |  |  |  | Std. Error ifference | Lower | Upper |
| Equal variances assumed | 0.122 | 0.728 | -1.548 | 66 | .126 | -7.183 | 4.639 | -16.445 | 2.07889 |
| Equal variances not assumed |  |  | -1.613 | 56.658 | .112 | -7.183 | 4.454 | -16.103 | 1.73689 |

From the above table, we can find no significant difference between learners' anxiety levels in the mode of FC and TC (Sig. = .126). This result replicates the findings of previous research made by Huang Dongmei (2021), who concluded that flipped classroom mode was conducive to reduce learners' anxiety and there is no significant difference from flipped classroom and traditional classroom. However, this result is completely opposite to the research made by Chen Wei (2019), which showed that Students' English classroom anxiety under flipped classroom is significantly higher than that of traditional classroom mode.

## 4.2 Anxiety Factors in Flipped Classroom and Traditional Classroom

To specify the factors that cause anxiety in English classroom under different teaching mode, subjects' responses on the 33 questions (Q1-Q33) in the questionnaires are analyzed respectively.

### 4.2.1 Anxiety Factors in Flipped Classroom
Through the descriptive statistics (Table 1) we can find the mean score of Q. 1, 2, 4, 6, 7, 9, 10, 11, 13, 14, 15, 16, 18, 23, 24, 32, 33 is above 3.00, which shows some specific factors in flipped classrooms do create a certain degree of anxiety on students.

The mean of Q33 "I get nervous when the English teacher asks questions which I haven't prepared in advance" is 3.72, which is the highest mean among all the 33 questions, telling us that if teachers proposed questions that students' haven't prepared for, students' anxiety degree will increase, that is to say, students prefer the tasks with sufficient preparation time. The mean of Q7 "I keep thinking that the other students are better at languages than I am" is 3.63, the second highest mean among all the items, indicating that comparison among peers is one of the essential factors causing anxiety in flipped classroom. The mean of Q6 "In class, I find myself thinking about things that have nothing to do with the course." is 3.58. The mean of Q9, Q11, Q15 is 3.37, which are equally high.

**Table 4**
**Descriptive statistics of FLA in flipped classroom**

|  | N | Mean | Std. Deviation |  | N | Mean | Std. Deviation |
|---|---|---|---|---|---|---|---|
| Q1 | 43 | 3.30 | 0.989 | Q18 | 43 | 3.07 | 0.910 |
| Q2 | 43 | 3.07 | 1.009 | Q19 | 43 | 2.56 | 0.881 |
| Q3 | 43 | 2.49 | 0.910 | Q20 | 43 | 3.02 | 1.035 |
| Q4 | 43 | 3.02 | 1.058 | Q21 | 43 | 2.86 | 0.990 |
| Q5 | 43 | 2.63 | 0.926 | Q22 | 43 | 2.51 | 0.827 |
| Q6 | 43 | 3.58 | 0.906 | Q23 | 43 | 3.19 | 0.880 |
| Q7 | 43 | 3.63 | 0.900 | Q24 | 43 | 3.23 | 0.895 |
| Q8 | 43 | 2.81 | 0.764 | Q25 | 43 | 2.93 | 1.009 |
| Q9 | 43 | 3.37 | 0.952 | Q26 | 43 | 2.58 | 1.096 |
| Q10 | 43 | 3.09 | 1.192 | Q27 | 43 | 2.81 | 1.075 |
| Q11 | 43 | 3.37 | 0.926 | Q28 | 43 | 2.88 | 0.793 |
| Q12 | 43 | 2.79 | 0.965 | Q29 | 43 | 3.00 | 1.000 |
| Q13 | 43 | 3.05 | 0.999 | Q30 | 43 | 3.00 | 0.926 |
| Q14 | 43 | 3.35 | 0.870 | Q31 | 43 | 2.77 | 0.922 |
| Q15 | 43 | 3.37 | 0.952 | Q32 | 43 | 3.26 | 0.928 |
| Q16 | 43 | 3.02 | 0.988 | Q33 | 43 | 3.72 | 0.882 |
| Q17 | 43 | 2.63 | 1.001 |  |  |  |  |

There are 20 questions with a mean higher than 3.00. In the category of communication apprehension), there are 10 questions with mean higher than 3.00, accounting for 50% of the total 20 questions. The results indicate that communication anxiety affects English majors most in flipped classroom.

The mean of Q3 " I tremble when I know that I'm going to be called in English class" is 2.49; Q22 " I don't feel pressure to prepare very well for English class." is 2.51; Q19 " I am afraid that my English teacher is ready to correct every mistake I make" is 2.56; Q26 "I feel more tense and nervous in my English class than in my other class" is 2.58 and Q17 "I often feel like not going to my language class" is 2.63, which indicate that these five factors have little influence on the students and are not influential inducement of English majors' learning anxiety in flipped classroom.

After analyzing the descriptive statistics of each factor within the frame of four categories, i. e. communication apprehension, fear of negative evaluation, test anxiety, general anxiety, as indicated in Table 5, we can find two main inducement for English majors' learning anxiety in flipped classroom, that is, communication apprehension(M=3.2283) and fear of negative evaluation(M=2.9709).

**Table 5**
**Descriptive statistics of FLA of four categories factors in flipped classroom**

|  | CA | NEF | TA | GA |
|---|---|---|---|---|
| Mean | 3.2283 | 2.9709 | 2.9225 | 2.9027 |
| N | 43 | 43 | 43 | 43 |
| Std. Deviation | .66045 | .63260 | .80946 | .57953 |

The above finding is the same as that made by Toyama and Tamazaki (2018) who identified two factors that contribute to leaner anxiety, i.e. communication apprehension and fear of failing. Alrabai (2014) also found that participating learners reported moderate to high levels of anxiety, with communication being the key cause of learners' language anxiety. Chen Wei(2018) conducted the factors of serious anxiety caused between the two groups are similar, that is communication fear, teacher-student interaction fear and negative evaluation fear. His result is consistent with this research. However, there are multiple other factors responsible for students' English learning anxiety, including grades and teachers (Horwitz, 2001), language capability and individual differences (Macintyre & Gardner, 1991; Gao Zhao & Li Jingnan, 2016) in the process of learning.

### 4.2.2 Anxiety Factors in Traditional Classroom

The mean of Q33 "I get nervous when the English teacher asks questions which I haven't prepared in advance" is 4.08, which is the highest among the 33 questions and also is much higher than that in the flipped classroom

(M=3.72). This is probably because the mode of "learning before teaching" in flipped classroom can significantly alleviate learners' English communication anxiety. First of all, flipped classroom reduces teachers' teaching time and students get more opportunities for language practice. Secondly, flipped classroom requires students to process knowledge learning before class, understand their learning difficulties and objectives, and prepare for classroom tasks, that is, teachers and students discuss, solve problems, or show learning results together in class. It can be seen that the learning objectives of flipped classroom are clearer and more personalized, the students are more fully prepared for language output, and the interaction is more meaningful for classroom communication. Therefore, it can effectively stimulate students' communicative desire and decrease the anxiety to communicate in English in flipped class. As reported from the interview, one student said, "In the flipped class, the teacher assigned presentation task of group presentation before class. At the beginning, I would be very nervous, but in the end teacher's praise and affirmation made me relax quickly", which shows that teachers' positive feedback can effectively alleviate learners' anxiety and improve their self-confidence.

**Table 6**
**Descriptive statistics of FLA in traditional classroom**

|  | N | Mean | Std. Deviation |  | N | Mean | Std. Deviation |
|---|---|---|---|---|---|---|---|
| Q1 | 25 | 3.56 | 0.768 | Q18 | 25 | 3.60 | 0.645 |
| Q2 | 25 | 3.20 | 0.866 | Q19 | 25 | 2.80 | 1.000 |
| Q3 | 25 | 2.56 | 0.917 | Q20 | 25 | 3.52 | 1.005 |
| Q4 | 25 | 3.32 | 0.900 | Q21 | 25 | 2.84 | 1.143 |
| Q5 | 25 | 2.92 | 0.862 | Q22 | 25 | 2.64 | 0.952 |
| Q6 | 25 | 3.64 | 0.638 | Q23 | 25 | 3.56 | 0.870 |
| Q7 | 25 | 3.44 | 0.870 | Q24 | 25 | 3.44 | 0.870 |
| Q8 | 25 | 3.16 | 0.850 | Q25 | 25 | 3.44 | 0.870 |
| Q9 | 25 | 3.88 | 0.971 | Q26 | 25 | 2.76 | 1.012 |
| Q10 | 25 | 3.36 | 1.150 | Q27 | 25 | 2.88 | 1.166 |
| Q11 | 25 | 3.28 | 0.678 | Q28 | 25 | 3.20 | 0.764 |
| Q12 | 25 | 3.08 | 1.115 | Q29 | 25 | 3.28 | 0.980 |
| Q13 | 25 | 3.32 | 1.108 | Q30 | 25 | 3.00 | 1.041 |
| Q14 | 25 | 3.60 | 0.816 | Q31 | 25 | 2.68 | 0.988 |
| Q15 | 25 | 3.60 | 0.913 | Q32 | 25 | 3.40 | 0.866 |
| Q16 | 25 | 3.36 | 1.075 | Q33 | 25 | 4.08 | 0.572 |
| Q17 | 25 | 2.76 | 1.200 |  |  |  |  |

The mean of Q9 "I start to panic when I have to speak without preparation in English class" is 3.88, ranked the second high mean among all the items, indicating that unprepared tasks and presentation in front of classmates are major causes of anxiety for students in traditional class.

There are 24 questions with mean higher than 3.00. In the category of communication apprehension, there are 10 questions with mean higher than 3.00, accounting for 41% of the total 24 questions. The results indicate that communication anxiety affects English majors most in traditional classroom. We can also find that the number of questions with mean higher than 3.00 in traditional classroom are more than that in the flipped classroom. The mean of Q3 " I tremble when I know that I'm going to be called in English class" is 2.56; Q22 " I don't feel pressure to prepare very well for English class." is 2.64; Q31 " I am afraid that the other students will laugh at me when I speak the foreign language" is 2.68; Q17 " I often feel like not going to my language class" is 2.76, and Q21 " The more I study for a language test, the more confused I get." is 2.84 , which indicate that these five factors have little influence on the students and are not influential inducement of English majors' learning anxiety in tradition classroom.

**Table 7**
**Descriptive statistics of FLCAS scores of four factors in traditional classroom**

|                | CA     | NEF    | TA     | GA     |
|----------------|--------|--------|--------|--------|
| Mean           | 3.5127 | 3.1350 | 3.1200 | 3.0982 |
| N              | 25     | 25     | 25     | 25     |
| Std. Deviation | .55848 | .57169 | .77507 | .51621 |

After analyzing the descriptive statistics of each factor within the frame of four categories as indicated in Table 7, we can find that that in traditional classroom among four categories of factors, mean of communication apprehension ranked the highest (M=3.5127), with the factor of fear of negative evaluation ranking the second place, the factor of test anxiety and general anxiety ranking the third and fourth place respectively.

Among 11 questions concerning communication anxiety, the mean of Q33 "I get nervous when the English teacher asks questions which I haven't prepared in advance" is 4.08, which is the highest mean among all the 11 questions. In the interview, almost all students showed certain fear of being asked to answer impromptu questions with little time to prepare, which confirms the results of Q. 33 from the questionnaire that one-to-one unprepared questions in class will lead to an increase in anxiety level. The mean of Q15 "I get upset when I don't understand what the teacher is correcting" is equally high, which indicates that in English majors' classes teachers mainly speak English though most students prefer the teaching in the mixed medium of English and Chinese. If students and can't keep up with the teaching tempo in class, a tense mental state may arise where they are unable to relax themselves and actively participate in classroom activities.

## 4.3 Correlation between Anxiety Levels and Language Proficiency in Flipped Classrooms

In order to investigate the possible relations between learners' English proficiency and their anxiety level in flipped English classrooms, the Person correlation analysis is conducted, as shown in Table 8 below.

**Table 8**
**Correlation of learners' English proficiency and anxiety level**

| TEM 4 scores        | TEM4 scores | FLCAS score |
|---------------------|-------------|-------------|
| Pearson Correlation | 1           | -.311*      |
| Sig.(2-tailed)      |             | .042        |
| N                   | 43          | 43          |

* Correlation is significant at the 0.05 level (2-tailed)

The above table shows the correlation coefficient (r=-.311) between the two variables, which suggests that students' anxiety level correlates significantly with English proficiency since the significant level is less than .05. In other words, there exists a low negative correlation between students' anxiety and English proficiency. The higher the student's English learning level is, the lower anxiety degree he will get in the flipped classroom. This result is the same as some previous studies (Philips, 2012; Gaozhao & Li Jingnan, 2016). However, Ganschow et al. (1994) conducted that there is no significant relationship between foreign language learning anxiety and students' academic achievement.

The possible reason for the above result is that learners with a high proficiency level of English tend to have internal motivation and a strong interest in the target language and culture, which will lead to more confidence and less anxiety in attending English classes. Students who have experienced too many failures in the past, will have negative and unpleasant memories of their English learning experience. Therefore, their degree of anxiety tends to be kept at a high level in English classrooms. As reported by one student with a low proficiency level in the interview, "If it was not for CET-6 and TEM-4, I will not concentrate on class". For this type of students, they seldom raise their hands to answer questions in class out of fear of failure so they need "interesting" classroom atmosphere or English teachers to mobilize their enthusiasm.

## CONCLUSION

This study explores the influence of teaching modes of flipped and traditional classroom on English majors' English learning anxiety levels, the possible relations between learners' English proficiency and learning anxiety, and the most influential factors that might contributed to foreign language learning anxiety. The major findings of the study are summarized as follows:

Firstly, there is no significant difference in English majors' anxiety levels in the teaching mode of traditional classroom or flipped classroom though their overall anxiety levels in flipped classroom is lower than that in the traditional classroom. Secondly, there is a consistent finding concerning the degrees of four categories of anxiety factors to which English majors are affected. The category of communication apprehension factors contributes to learner anxiety most with the category of fear of negative evaluation factors ranking in the second place while the category of test anxiety and general anxiety tend to affect learners less. Lastly, there is a low degree of negative correlation between English majors' English proficiency levels and their anxiety levels in flipped classroom.

Based on the results of this study, the following suggestions are put forward in order to promote college English teaching. Firstly, teachers should create an agreeable classroom atmosphere, and promote cooperative learning. Teachers' positive feedback can effectively alleviate learners' anxiety and improve their self-confidence. Thus, teachers need to encourage students to express their views in public, and focus on the exchange of ideas in class, especially for learners of low English proficiency. If time permits, teachers should give students enough time to discuss and solve problems. Secondly, teachers are expected to break the traditional teaching mode in which teachers are in an authoritative position with an exam-oriented outlook, and create dynamic and active flipped classrooms with the help of the most updated information technology, in which students are encourage to practice cooperative learning in groups, so as to reduce the anxiety caused by individual work. To sum up, only by taking the advantages of traditional and flipped English classrooms, the role of teachers' and peers' "scaffolding" can be given full play and learners' anxiety can be gradually alleviated and the learning outcomes of English classrooms can be optimized.

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