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Predicting EFL Learners' Achievement from Their Two Faces—FLE and FLCA

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***Abstract*—Foreign Language Enjoyment (FLE) and Foreign Language Classroom Anxiety (FLCA) are a Janus-faced concept (Dewaele & MacIntyre, 2014). This study adopted a mixed-method approach to investigate how FLE interacts with FLCA to predict and be predicted by Foreign Language (FL) achievement among 589 undergraduate learners of English as a foreign language (EFL) at a key and a non-key university in Northwest China. Participants reported more FLE than FLCA. Significant school differences were found regarding the investigated variables. FLE regulated the debilitating aspect and positively predicted the facilitating aspect of FLCA, whereas facilitating anxiety, in turn, increased FLE via motivation and sense of success. FLE and FLCA significantly predicted FL achievement and vice versa. Qualitative analysis revealed that learner-internal variables were major sources of FLE and FLCA. Facilitating anxiety was reported to significantly and positively connect with FL achievement in both quantitative and qualitative data, although debilitating anxiety exerted a more influential role.**

***Index Terms*—foreign language enjoyment, foreign language classroom anxiety, foreign language achievement**

I. Introduction

Influenced by Positive Psychology movement, there has been an interest in the holistic analysis of both positive and negative emotions in learners' language journey (Dewaele & Alfawzan, 2018; Dewaele & MacIntyre, 2014; MacIntyre & Mercer, 2014). Studies have found that learners' positive and negative emotions in the process of language learning are in a complex dynamic system, in which the former helps to undo the lingering effects of negative emotional arousal and thus facilitate personal resiliency in the face of difficulty (Dewaele & MacIntyre, 2014). Among all positive and negative emotions investigated in this new research trend, Foreign Language Enjoyment (FLE) and Foreign Language Classroom Anxiety (FLCA) have been considered as the most frequently experienced affective variables for learners (Piniel & Albert, 2018).

Findings from Dewaele and MacIntyre's (2014) study showed that Asian FL learners reported the least FLE and the highest FLCA compared with their international peers. MacIntyre and Vincze (2017) questioned whether positive emotions would form a same pattern in EFL learning in China or Japan. According to statistics, with around 400 million English learners/users (Wei & Su, 2012), China has the largest EFL learning group worldwide (You & Dornyei, 2016). However, this huge English-learning population has not gained extensive attention from the perspective of Positive Psychology. To the researcher's knowledge, only two Chinese scholars have empirically studied the relationship between FLE and FLCA among Chinese undergraduate EFL learners (Jiang & Dewaele, 2019) and high school students (Li, Dewaele, & Jiang, 2019). Due to different teaching objectives, teaching contents, teaching methods, evaluation methods, and English proficiency, Chinese undergraduate EFL learners distinguish themselves from high school EFL students owing to their higher levels of learning autonomy and learning strategies (Liu, 2010). Nevertheless, no work so far has been carried out to explore the simultaneous roles of FLE and FLCA in predicting Chinese undergraduate EFL learners' Foreign Language (FL) achievement.

The present study was thus designed to obtain an in-depth understanding of such a relationship. The researcher initially investigated the potential relationship by identifying FLCA with two dimensions: facilitating and debilitating anxiety. It was hypothesised that FLE regulates the debilitating aspect and predicts the facilitating aspect of FLCA and ultimately FLE and FLCA interact with each other to predict and be predicted by FL achievement.

II. Literature Review

A. Studies on FLCA and Its Correlation with FL Achievement

Anxiety is probably one of the most pervasive obstructs drawing great attention in language research (Aida, 1994; Dörnyei, 2005; Gardner, 1985; Gardner & MacIntyre, 1993; Horwit, 2010; Horwitz, Horwitz, & Cope, 1986; Young, 1991). According to Horwitz and her colleagues (1986, p. 128), FLCA is "a distinct complex of self-perceptions, beliefs, feelings and behaviors related to classroom language learning arising from the uniqueness of the language learning process".

There is a consensus on the predicting effects of FLCA on FL achievement since any model searching for FL achievement would be underspecified without some considerations of FLCA (Onwuegbuzie, Bailey, & Daley, 2000).

The effects of FLCA on FL achievement are interplayed with learners' other affective variables. Learners who have a higher level of FLCA are more likely to have negative attitudes towards learning (Clément, Dörnyei, & Noels, 1994), be demotivated in classroom activities (Gardner, Tremblay, & Masgoret, 1997; Hashimoto, 2002), and have negative self-esteem in the learning process (Crookall & Oxford, 1991).

A fair number of researchers have focused their attention on the negative correlation between FLCA and FL achievement (Dörnyei, 2005; Gardner & MacIntyre, 1993; Horwitz, 2001; Horwitz et al., 1986; MacIntyre, 1995). However, FLCA is not always harmful. When FLCA is relatively low, it promotes learning; otherwise, it hinders (Gass & Selinker, 2008). Alpert and Haber (1960) were the first to distinguish facilitating anxiety from debilitating anxiety. While the former promotes the learning process by pushing learners to achieve settled goals, the latter impairs the learning outcomes by frightening learners to give up the task. According to Scovel (1978, p. 138-139), facilitating and debilitating anxiety "serving simultaneously to motivate and to warn, as the individual gropes to learn an ever-changing sequence of new facts in the environment". In line with this argument, some studies explored the bipartite FLCA (Bailey, 1983; Tran, Baldauf, & Moni, 2013) and demonstrated that facilitating anxiety promoted learning performance in certain situations (Mills, Pajares, & Herron, 2006; Young, 1991). In the investigation of Arabic and Spanish-speaking learners' English learning, Kleinmann (1977) found that facilitating anxiety helped participants take more risks and use more complex grammatical structures. Many experienced language teachers in Ohata's (2005) interview confirmed the important role that facilitating anxiety played in students' learning process.

B. Studies on FLE and Its Correlation with FLCA

Positive Psychology in second language acquisition (SLA) has only experienced a short history (MacIntyre & Mercer, 2014) since more studies have been established to investigate learners' negative emotions (Arnold & Brown, 1999; Bown & White, 2010). Dewaele and MacIntyre (2014, 2016) emphasised the importance of both emotions in a figurative way: the two faces of Janus or the right and left feet of the language learner. Thus, research on positive emotions is becoming popular, and enjoyment has surfaced as one of the most frequently investigated variables recently.

Enjoyment is achieved when both physical and psychological needs are well aligned (Csikszentmihalyi, 2008). Both Fredrickson's (2003) Broaden-and-build Theory and Pekrun's Control-value Theory (2006) have probed into the role of enjoyment and thus have provided theoretical backbone for its application in language research. According to Fredrickson's (2003) Broaden-and-build Theory, the essential role of positive emotions like enjoyment is to broaden people's momentary mindset and facilitate their building of enduring personal resources. As a positive activating emotion in the Control-value Theory, enjoyment positively predicts academic achievement via increasing learners' interest, promoting their motivation, and helping them use more flexible strategies (Pekrun, 2006).

The pioneering research on FLE was carried out by Dewaele and MacIntyre (2014), who developed a 21-item Foreign Language Enjoyment Scale (FLES) with a 5-point Likert scale ranging from "strongly disagree" to "strongly agree" to reflect learners' multifaceted FLE and positive emotions towards the teacher and peers. Dewaele and MacIntyre (2014) also extracted eight items from the Foreign Language Classroom Anxiety Scale (FLCAS) designed by Horwitz et al. (1986) in the survey. A moderate negative correlation was found between FLE and FLCA, indicating that they are essentially independent dimensions and not two sides of the same coin. Further data analysis revealed that the overall participants, more advanced language learners, and female participants experienced significantly more FLE than FLCA. Results obtained from the qualitative instrument showed that positive and novel events, good classroom atmosphere, friendly peers, and particularly humorous and positive teachers attributed to learners' enjoyment. Dewaele and MacIntyre's (2016) followed-up research modified the original 21-item version of FLES to a more economical 14-item one and identified two dimensions of FLE: a private dimension concerning the internal pride and satisfaction brought about by the accomplishment of difficult tasks; a social dimension regarding good classroom environment as well as interpersonal relationships with the teacher and peers. Subsequently, Dewaele et al. (2016) developed a third study on the same dataset focusing on gender differences at the item-level. Results indicated that female participants reported more FLE and FLCA than male peers while no gender differences emerged in the items that reflected the paralysing effects of FLCA.

Inspired by Dewaele and MacIntyre's (2016) studies, other scholars continued to advance the understanding and research methods of FLE. Using a latent growth curve modelling (LGCM) as well as a methodological triangulation of data collection, Elahi Shirvan and Taherian (2018) investigated the growth as well as changing trends of the university students' FLE and FLCA in the general English course. Results revealed that the growth of FLE and FLCA during the semester was strongly and negatively connected, which could not be predicted by initial levels of FLE and FLCA at the beginning of the semester. Additionally, the growth of FLE and FLCA varied inter-individually and intra-individually.

The first empirical study of FLE in the Chinese EFL context was carried out by Li and her associates (2018) among more than 2000 s-year high school students at different academic levels from three schools. Based on Dewaele and MacIntyre's (2016) 14-item FLES, the authors developed an 11-item Chinese Version of the Foreign Language Enjoyment Scale (CFLES) and examined its psychometric properties. Participants scored highest FLE-teacher, followed by FLE-private and FLE-atmosphere. Qualitative data obtained from an open question attached in the questionnaire showed that besides the effects of teachers and peers, FLE was influenced by a large range of learners' internal and external variables.

Subsequently, Jiang and Dewaele (2019) continued to explore the relationship between FLE and FLCA among 564

Chinese undergraduate EFL learners. The quantitative instrument was supported with ten items extracted from Dewaele and MacIntyre's (2014) FLES and eight items selected from FLCAS (Horwitz et al., 1986). Participants scored significantly more FLE than FLCA. Different from previous research, no significant gender differences were found in either FLE or FLCA. Teacher-related variables were more significantly connected with FLE, while learner-internal variables were more remarkably related to FLCA. Data collected from the qualitative study further confirmed previous research conducted by Dewaele et al. (2018) and Dewaele et al. (2019) that FLCA was more shaped by learners, while FLE was more influenced by behaviours of the teacher and peers and the interplay between all.

C. Studies on the Relationship between FLE, FLCA, and FL Achievement

The association between FLE and FLCA and their simultaneous effects on FL achievement have just started to be investigated with initial research developed by Dewaele and Alfawzan (2018). Both FLE and FLCA were verified as significant predictors of FL achievement, with the former slightly outweighing the latter. In addition, Dewaele and Alfawzan (2018) suggested that future research could be carried out to explore the effects of specific target language on FLE, FLCA, and FL achievement.

In their follow-up study focusing on the Chinese EFL context, Li et al. (2019) adopted a mixed-method approach to explore the correlation between Chinese high school students' FLE, FLCA, and FL achievement. Findings supported the assumption that FLE and FLCA were significant predictors of self-perceived English proficiency and actual English achievement. Qualitative data analysis indicated that whereas good test results, great progress, promotion in relative FL standing, and teacher praise were the main sources of FLE, bad performance, little progress, and fear of teacher criticism were frequently mentioned as the sources of FLCA.

Fredrickson's (2003) Broaden-and-build Theory emphasised the "broaden" and "build" effects of positive emotions on negative emotions. Previous research regarding the relationship between FLE and FLCA failed to identify different dimensions of FLCA as what had been done on FLE and ignored how FLE specifically exerts its "broaden" and "build" impact on FLCA by exploring the micro variables. Regarding FLE, although different dimensions have been identified in either the quantitative (e.g. FLE-private, FLE-teacher, and FLE-atmosphere from Li et al., 2018) or qualitative survey (e.g. FLE-self, FLE-teacher, and FLE-peer from Jiang and Dewaele, 2019), no work so far has been conducted to explore the effects of the micro FLE variables on FLCA and FL achievement for identifying the best micro predictor. In a similar vein, no corresponding research has been performed to investigate the predicting effects of the micro FLCA variables on FL achievement. Further, it is unclear whether the predicting effects of the micro variables could achieve consistent results in both quantitative and qualitative research. Therefore, it is one of the originalities of this study to explore the relationship between FLE, FLCA, and FL achievement by taking both macro and micro levels into consideration.

III. Research Questions

This study will explore answers to the following questions:

1. What are the levels of FLE, FLCA, and FL achievement of Chinese undergraduate EFL learners and are there any gender and/or school differences involved?
2. How does FLE interact with FLCA to predict FL achievement at both macro and micro levels?
3. What are the effects of FL achievement on FLE and FLCA?
4. What are the sources of participants' FLE and FLCA?

IV. Method

Creswell and Clark (2011, p. 81) argued that qualitative data could "validate, enrich and embellish the quantitative results with emergent and interesting themes". Therefore, the current study adopted different quantitative and qualitative methods to collect data.

A. Participants

Initiated in 1995 by China's Ministry of Education, Project 211 is a project aiming at strengthening approximately 100 national key universities and colleges for the 21st century. To enhance the generalisability of the research findings via participants' broad diversity, participants in the quantitative study were 589 (254 males, 335 females) sophomore undergraduate students from a key university (N=364) and a non-key university (N=225) in Northwest China. They took the College English course four periods per week and 45 minutes per period. All 26 participants (13 males, 13 females) involved in the qualitative study were randomly and equally recruited from the quantitative sample at two designated universities who informed the researcher of their willingness to take part in further investigation via researchers' contact information attached in the questionnaire.

B. Instruments

1. Questionnaire

The WeChat questionnaire started with a section asking about participants' demographic information (i.e. gender, school, and the existing CET-4 score). As the largest English examination in China or a world record (You & Dornyei,

2016), the CET-4 has attracted millions of test-takers since its first administration in 1987. Students at most universities are not permitted to take part in the CET-4 until the first semester of the second college year. In this study, participants' existing CET-4 scores were collected to measure their FL achievement for the reliability and predictability of the test (Jin & Yang, 2006). Following this sociobiographical information, participants were asked to respond to the 19 items regarding their FLE and FLCA on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree".

The 11-item CFLES developed by Li et al. (2018) was introduced into the questionnaire. The Cronbach's Alpha for the whole CFLES, subdimensions of FLE-private, FLE-teacher, and FLE-atmosphere were .826, .792, .896, and .778 respectively, suggesting that the scale has high internal reliability. Adopting confirmatory factor analysis, three subdimensions were constructed ($\chi^2(41) = 72.975$; CFI=.975; TLI=.967; SRMR=.034; RMSEA=.041), reflecting that the three-factor model is at an acceptable level. In this study, the Cronbach's Alpha for FLE, FLE-private, FLE-teacher, and FLE-atmosphere were .888, .886, .898, and .839 respectively, indicating high internal consistency. Further, the 11-item FLE model had a very good fit ($\chi^2(41) = 123.902$; $\chi^2/df = 3.022$; GFI=.963; CFI=.978; TLI=.971; NFI=.968; SRMR=.040; RMSEA=.059).

To investigate the regulating and predicting effects of FLE on FLCA as well as the positive-negative effects of FLCA on FL achievement, the author constructed four items regarding facilitating anxiety and another four concerning debilitating anxiety. Items regarding facilitating anxiety were reverse-coded so that both facilitating and debilitating anxiety are in the same direction and participants' high score could reflect a high level of FLCA. The Cronbach's Alpha for FLCA, facilitating anxiety, and debilitating anxiety were .782, .815, and .867 respectively, indicating that the scale was sufficiently reliable. Further, the eight-item two-factor FLCA model had a very good fit ($\chi^2(19) = 74.644$; $\chi^2/df = 3.929$; GFI=.969; CFI=.972; TLI=.959; NFI=.964; SRMR=.054; RMSEA=.071). Overall, the whole 19-item questionnaire revealed an acceptable reliability (Cronbach's Alpha=.897).

2. Semi-structured interviews

Glesne (2006) believed that interviews could provide the opportunity to know what people cannot see directly and to further explore what people do see. The three-question semi-structured interviews were performed among 26 participants at two designated universities each 13 to seek sources of FLE and FLCA and enrich the quantitative findings.

C. Data Collection

Permission for participation in this research was first sought from presidents and potential participants at two designated universities. The WeChat questionnaire was distributed to eight randomly selected classes at the key university and another eight at the non-key university at the end of the second semester in June, ensuring that participants had already had the CET-4 scores. Upon completion, the questionnaire was anonymously and automatically submitted. After the questionnaire survey, semi-structured interviews were conducted in interviewees' native Chinese on days and times that were favourable for participants and permission was sought to record the audio interviews.

D. Data Analysis

SPSS 25.0 and Amos 24.0 were adopted to do the data analysis of the questionnaire. NVivo 12 was employed to analyse the qualitative data through thematic discussion.

V. Quantitative Results

A. Levels of FLE, FLCA, and FL Achievement

Average scores on the 5-point scale were calculated for FLE (Mean=3.35, SD=.69) and FLCA (Mean=2.93, SD=.70). Further, a paired t-test verified that all participants experienced a significantly higher level of FLE than FLCA (df=588, t=8.22, p<.001, Cohen's d=.60). According to Plonsky and Oswald (2014), it is a large effect size. In addition, the average CET-4 score reflecting FL achievement in this study was 432.64, surpassing the 425-cut-off score required for getting the certificate.

B. Differences in Gender and School

As it can be seen from Table 1, gender had no significant effects on FLE (df (1, 587), F=.148, p=.701), FLCA (df (1, 587), F=2.925, p=.088), and FL achievement (df (1, 587), F=1.377, p=.241). In contrast, One-way ANOVA results showed that school differences significantly influenced participants' different levels of FLE (df (1, 587), F=35.518, p<.001), FLCA (df (1, 587), F=8.750, p<.01), and FL achievement (df (1, 587), F=140.828, p<.001). Results suggested that the high-achieving participants experienced a significantly higher level of FLE but a remarkably lower level of FLCA than the less advanced peers.

TABLE 1.
ONE-WAY AVOVA ANALYSES OF FLE, FLCA, AND FL ACHIEVEMENT ACROSS GENDER AND SCHOOL

	MM	SDM			
	MF	SDF	df	F	Sig.
FLE	3.33	.78	1	.148	.701
	3.36	.61	587		
FLCA	2.99	.78	1	2.925	.088
	2.89	.64	587		
FL	429.64	56.04	1	1.377	.241
achievement	434.91	52.45	587		
	M1	SD1			
	M2	SD2	df	F	Sig.
FLE	3.48	.58	1	35.518	.000
	3.14	.79	587		
FLCA	2.86	.61	1	8.750	.003
	3.04	.82	587		
FL	451.31	45.59	1	140.828	.000
achievement	402.43	53.05	587		

Note. MM=mean scores of male; MF=mean scores of female; SDM=standard deviation of male; SDF=standard deviation of female; M1=mean scores of the key university; M2=mean scores of the non-key university; SD1=standard deviation of the key university; SD2=standard deviation of the non-key university; df=degree of freedom; F=ratio of variance; Sig.=significant.

C. Correlation Analysis

A Pearson correlation analysis was conducted to preliminarily answer the second research question. As displayed in Table 2, FLE, FLE-private, FLE-teacher, and FLE-atmosphere were significantly and positively correlated to facilitating anxiety and FL achievement. In contrast, FLCA and debilitating anxiety were significantly and negatively linked to FL achievement and FLE at both macro and micro levels, while facilitating anxiety was significantly and positively connected with FL achievement.

TABLE 2.
CORRELATIONS OF FLE AND FLCA TO ACHIEVEMENT AT MACRO AND MICRO LEVELS

	1	2	3	4	5	6	7	8
1. Achievement	-							
2. FLE	.464**	-						
3. FLE-private	.449**	.820**	-					
4. FLE-teacher	.287**	.726**	.424**	-				
5. FLE-atmosphere	.355**	.822**	.500**	.390**	-			
6. FLCA	-.400**	-.566**	-.617**	-.297**	-.412**	-		
7. Facilitating FLCA	.186**	.493**	.490**	.254**	.405**	-.712**	-	
8. Debilitating FLCA	-.406**	-.383**	-.456**	-.204**	-.240**	.809**	-.163**	-

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

D. The Regulating and Predicting Effects of FLE on FLCA

Three regression models were constructed to further verify the relationship between FLE and FLCA at both macro and micro levels. Given that school differences made significant effects on FLE, FLCA, and FL achievement, all regression models were conducted by taking the school factor as a control variable. None of the regression models constructed here had the problem of multicollinearity (all VIF<3). According to Table 3, at the macro level, FLE (β=-.57, p<.001) was a significant predictor of FLCA, indicating that participants who had a higher level of FLE tended to have a lower level of FLCA. At the micro level, FLE-private (β=.38, p<.001) and FLE-atmosphere (β=.21, p<.001) were robust predictors of facilitating anxiety, while FLE-private (β=-.44, p<.001) was a significant predictor of debilitating anxiety.

TABLE 3.
RESULTS OF REGRESSION MODELS USING FLE AS A PREDICTOR OF FLCA AT MACRO AND MICRO LEVELS (N=589)

Predicted variable	Predictor Variable(s)	Adjusted R2	B	Std. E	β	P	VIF
FLCA	(Constant)	.320	4.87	.12		.000	
	FLE		-.58	.03	-.57	.000	1.00
Facilitating	(Constant)	.271	1.41	.17		.000	
FLCA	FLE-private		.36	.04	.38	.000	1.45
	FLE-teacher		.01	.05	.01	.804	1.29
	FLE-atmosphere		.18	.04	.21	.000	1.41
Debilitating	(Constant)	.204	4.65	.21		.000	
FLCA	FLE-private		-.50	.05	-.44	.000	1.45
	FLE-teacher		-.01	.06	-.01	.804	1.29
	FLE-atmosphere		-.01	.05	-.01	.752	1.41

E. The Co-predicting Effects of FLE and FLCA on FL Achievement

Considering the significant correlation results between FLE, FLCA, and FL achievement, it was crucial to examine the co-predicting effects of FLE and FLCA on FL achievement via multiple regression analyses. No clear problem of multicollinearity was found in all regression models in this section (all VIF<3). According to the regression model summarised in Table 4, FLE and FLCA together explained 24% of the variance. Although these two emotions were robust predictors of FL achievement, FLE (β=.35, p<.001) had significant and positive effects on FL achievement, compared with FLCA (β=-.20, p<.001) that played significant and negative roles.

TABLE 4.
RESULTS OF MULTIPLE REGRESSION USING FLE AND FLCA AS CO-PREDICTORS OF ACHIEVEMENT (N=589)

Predictors	Adjusted R^2	B	Std. E	β	P	VIF
(Constant)	.240	386.22	18.95		.000	
FLE		27.43	3.43	.35	.000	1.47
FLCA		-15.50	3.34	-.20	.000	1.47

To identify the best micro predictors regarding FLE and FLCA respectively, multiple simultaneous regression analyses were performed. Results in Table 5 indicated that FLE-private (β=.34, p<.001) produced the strongest significant effects on FL achievement, followed by FLE-atmosphere (β=.16, p<.001) and FLE-teacher (β=.08, p<.05).

TABLE 5.
RESULTS OF MULTIPLE REGRESSION USING MICRO INDICES OF FLE AS CO-PREDICTORS OF ACHIEVEMENT (N=589)

Predictors	Adjusted R^2	B	Std. E	β	P	VIF
(Constant)	.226	318.96	11.24		.000	
FLE-private		20.19	2.63	.34	.000	1.45
FLE-teacher		6.12	3.00	.08	.042	1.29
FLE-atmosphere		8.75	2.43	.16	.000	1.41

For FLCA, as shown in Table 6, debilitating anxiety (β=-.39, p<.001) produced relatively greater and negative effects on FL achievement than facilitating anxiety (β=.12, p<.01) that exerted slightly less and positive effects. Results here indicated that participants who experienced a higher level of debilitating anxiety were less likely to perform well in their English learning, while those who had a higher level of facilitating anxiety were more likely to achieve high language proficiency.

TABLE 6.
RESULTS OF MULTIPLE REGRESSION USING MICRO INDICES OF FLCA AS CO-PREDICTORS OF ACHIEVEMENT (N=589)

Predictors	Adjusted R^2	B	Std. E	β	P	VIF
(Constant)	.177	469.69	10.64		.000	
Facilitating FLCA		7.93	2.44	.12	.001	1.03
Debilitating FLCA		-20.79	2.04	-.39	.000	1.03

VI. QUALITATIVE RESULTS

The semi-structured interviews were conducted to explore sources and effects of the participants' FLE and FLCA, and the relationship between FLE and FLCA from a qualitative perspective.

A. Sources of FLE and FLCA

Three tree codes including FLE-private, FLE-teacher, and FLE-atmosphere as well as nine partial free nodes were identified as sources of FLE, while another three tree codes comprising FLCA-private, FLCA-teacher, and FLCA-peer together with eight partial free nodes were distinguished as sources of FLCA. The number of references in Table 7 showed that participants' FLE was mostly connected with FLE-private, followed by FLE-teacher and FLE-atmosphere. Among all partial free nodes of FLE-private, good language performance (references=10) was the most mentioned source of participants' enjoyable experience in learning English. The good language performance mentioned by participants was mainly linked to high marks, as one participant from the key university shared his views:

> *"In my class, I could often get the highest mark in exams, so my English proficiency is at the highest level and I am so proud of myself. Obtaining high English achievement is a kind of recognition of my ability in learning English."*

TABLE 7
TREE CODES AND PARTIAL FREE NODES REGARDING SOURCES OF FLE AND THE NUMBER OF REFERENCES

Tree codes	Partial free nodes	References
FLE-private	Good language performance	10
	Integrating foreign cultures	9
	Realising the usefulness of English learning	9
	Realising progress	6
	Pride of overcoming one's limits	2
FLE-teacher	Teaching strategies	6
	Teacher recognition and support	5
FLE-atmosphere	Harmonious classroom atmosphere	3
	Specific classroom activities	2

Among the partial free nodes of FLE-teacher, teaching strategies (references=6) and teacher recognition and support (references=5) were reported to be the most influential factors for FLE. One participant commented:

> *"Our English teacher encouraged us to learn harder in many possible ways and asked us to make presentations in groups by using PPT, plays or other forms we like to share our understanding of the lesson. More importantly, she gave us valuable comments and feedback after each presentation, which made us have advanced understanding and knowledge."*

Among the partial free nodes of FLE-atmosphere, harmonious classroom atmosphere (references=3) was more likely to increase participants' FLE. One participant described the importance of a harmonious classroom atmosphere in his English learning:

> *"…the classroom atmosphere in our English class is very active and harmonious, which stimulates me to learn more and faster, increases my learning interest, and largely reduces my anxiety of making mistakes when answer teacher's questions."*

When it comes to sources of FLCA, FLCA-private was mostly mentioned, followed by FLCA-teacher and FLCA-peer (see Table 8). Among the partial free nodes of FLCA-private, exams and quizzes (references=17) were reported to be the most important sources. Participants at both key and non-key university all suffered great pressure of passing the CET-4, as one participant described:

> *"I have a high level of anxiety in passing the CET-4, which made me feel very nervous during and after class and it even made me fail to sleep well, especially before the exam."*

TABLE 8.
TREE CODES AND PARTIAL FREE NODES REGARDING SOURCES OF FLCA AND THE NUMBER OF REFERENCES

Tree codes	Partial free nodes	References
FLCA-private	Exams and quizzes	17
	Bad language performance	11
	Fear of failure	3
	No further goals for English learning	3
FLCA-teacher	Teacher questioning	3
	Challenging classroom activities	1
FLCA-peer	Peer discouragement	2
	Peer pressure	1

Regarding the partial free nodes of FLCA-teacher, teacher questioning (references=3) made participants feel nervous. Peer discouragement (references=2) was mentioned as the source of FLCA-peer. One participant described her FLCA caused by teacher questioning and peer discouragement at the same time:

> *"I felt too nervous to have eye-contact with my English teacher when she asked me to answer questions. Meanwhile, I worried that my classmates would laugh at my poor pronunciation and thus I would lose face before the whole class."*

B. Effects of FLE and FLCA, and Their Relationship

As shown in Table 9, regarding the effects of FLE, four categories including increasing new experience of FLE via confidence, interest, and motivation in subsequent study (references=24), reducing debilitating anxiety (references=12), promoting FL achievement (references=5), increasing classroom engagement (references=3) were identified. In contrast, the effects of FLCA were mostly mentioned in four aspects: reducing FLE (references=11), reducing FL achievement (references=11), promoting facilitating anxiety (references=10), and reducing classroom engagement (references=5). Apart from the verification in the quantitative study that FLE regulated the debilitating aspect and positively predicted the facilitating aspect of FLCA, it is noteworthy to see that facilitating anxiety was a robust factor for increasing participants' FLE via motivation to learn harder and sense of accomplishment. One participant commented:

> *"I had a high level of anxiety in doing listening practice especially in the CET-4; however, it stimulated me to learn harder and find more efficient learning methods to achieve my settled goals. Whenever I look back on this experience, I could feel a sense of success and enjoyment."*

TABLE 9
EFFECTS OF FLE AND FLCA

FLE (references)	FLCA (references)
Increasing new experience of FLE 24	Reducing FLE 11
Reducing debilitating FLCA 12	Reducing achievement 11
Promoting achievement 5	Promoting facilitating FLCA 10
Increasing classroom engagement 3	Reducing classroom engagement 5

C. Effects of FL achievement on FLE and FLCA

Results in Table 10 indicated that good language achievement had important roles in increasing FLE (references=29) via many factors (e.g. interest, confidence, sense of success, and motivation), reducing debilitating anxiety (references=7), and increasing classroom engagement (references=3). Regarding the effects of bad language achievement, four categories including increasing debilitating anxiety (references=17), reducing FLE (references=14) via interest and confidence, stimulating facilitating anxiety (references=11), and reducing classroom engagement (references=4) were reported. Obviously, high language achievement is a strong predictor of FLE while low language achievement has an influential predicting effect on FLCA. Notably, the role of low language achievement in stimulating facilitating anxiety was mentioned by almost half of the participants. One participant shared her views on the effects of FL achievement on FLE and FLCA:

> *"Good learning achievement is a kind of recognition of my great effort in learning English, which would increase my confidence and learning interest. In contrast, bad learning achievement would exert opposite effects. For me, learning achievement, enjoyment, and anxiety are in a close relationship."*

TABLE 10
EFFECTS OF ACHIEVEMENT

Good achievement (references)	Bad achievement (references)
Increasing FLE 29	Increasing debilitating FLCA 17
Reducing debilitating FLCA 7	Reducing FLE 14
Increasing classroom engagement 3	Stimulating facilitating FLCA 11
	Reducing classroom engagement 4

VII. DISCUSSION

The first research question dealt with levels of the participants' FLE, FLCA, and FL achievement and whether gender and school differences have significant effects on the investigated variables. Participants reported significantly more FLE than FLCA, which is in line with previous surveys (Dewaele et al., 2018; Dewaele & MacIntyre, 2014; Jiang & Dewaele, 2019). Contrary to the research conducted by Deawele et al. (2018) among foreign language learners outside China and in line with the study of Jiang and Dewaele (2019) focusing on Chinese EFL learners, no obvious gender differences regarding the investigated variables were found. School differences proved to have significant effects on FLE and FLCA, indicating that FL achievement exerted remarkable effects on FLE and FLCA. This is closely related to the fact that on average Chinese students at key universities have higher levels of entry requirement (Davey, Lian, & Higgins, 2007) and CET-4 scores (Jin & Yang, 2006) than their counterparts at non-key universities.

Regarding the second research question, a significant negative correlation between FLE and FLCA was found in the quantitative analysis, confirming previous research (Dewaele et al., 2018; Dewaele & MacIntyre, 2014). Both quantitative and qualitative results verified the coexistence of facilitating and debilitating anxiety (Tran et al., 2013). It is noteworthy to see that FLE, facilitating anxiety, and FL achievement formed a significant positive relationship whereas FLE and FL achievement are significantly and negatively connected with debilitating anxiety. Participants who had a higher level of FLE and its micro indices were less likely to be troubled with FLCA and debilitating anxiety but were more likely to be stimulated by facilitating anxiety, reflecting the regulating and predicting effects of FLE on FLCA. FLE-private was revealed as a significant predictor of both facilitating and debilitating anxiety, confirming that FLCA can be either helpful or detrimental, depending on EFL learners (Ohata, 2005). It is important to see from the qualitative results that facilitating anxiety could increase the experience of FLE via motivation to learn harder and sense of success, which advanced the general understanding of the negative correlation between FLE and FLCA.

The interactive relationship between FLE and FLCA was further explored by testing their simultaneous effects on FL achievement. Consistent with Li et al. (2019), FLE and FLCA were prominent co-predictors of FL achievement, with the former outweighing the latter (Dewaele & Alfawzan, 2018). Compared with Chinese high school student participants in the study of Li et al. (2019), participants in this study were more likely to have a higher level of learning autonomy, which partially attributed to the consistent results in both quantitative and qualitative study that the participants' FLE-private had the strongest predicting effects on FL achievement. Debilitating anxiety outweighed facilitating anxiety in predicting FL achievement, reflecting that participants were mainly susceptible to debilitating anxiety (Tran et al., 2013).

Regarding the third research question, findings in the qualitative analysis provided evidence to see that FL achievement, in turn, was a robust predictor of FLE and FLCA (Dewaele & MacIntyre, 2014; Li et al., 2019).

Influenced by the exam-oriented learning context, participants' bad FL achievement significantly stimulated their facilitating anxiety to get higher marks and increase the experience of FLE and FLE-private in particular, confirming that FLE, FLCA, and FL achievement form a close relationship (Gardner, 2001).

The final research question addressed sources of FLE and FLCA from the qualitative data. Interestingly, three categories constructed in CFLES (Li et al., 2018) including FLE-private, FLE-teacher, and FLE-atmosphere were mentioned by participants as major sources of FLE, confirming the high validity of the scale. In contrast, FLCA-private, FLCA-teacher, and FLCA-peer were mentioned as important sources of FLCA. Notably, both FLE and FLCA were mostly triggered by participants' internal variables focusing on getting high marks in exams and quizzes, which is opposite with previous studies where FLE was more connected with teacher-related variables (Dewaele et al., 2018; Jiang & Dewaele, 2019) and is consistent with surveys of Dewaele and his associates (2018, 2019), Jiang and Dewaele (2019) where FLCA was more predicted by learner-internal variables. This confirms that Chinese EFL learners are more instrumentally motivated (Wang, 2010; Yu, 2009) and particularly more exam-oriented than FL learners in other continents (Jiang & Dewaele, 2019). Participants' average CET-4 score in this study was 432.64 just surpassing the passing line 425, indicating that the FL achievement level of these participants was intermediate or low. Thus, it is understandable that participants attributed sources of both their FLE and FLCA to themselves. Apart from participants' internal variables, it should be noted that from a dynamic perspective, familiarity with teachers' manner of giving feedback (verbal/non-verbal) as well as peers contributed to the degree or type (either facilitating or debilitating) of participants' FLCA (Elahi Shirvan & Talebzadeh, 2017).

VIII. Conclusion

The present study explored the complex and interactive correlation between Chinese undergraduate EFL learners' FLE, FLCA, and FL achievement. FLE played an important role in regulating debilitating anxiety and positively predicting facilitating anxiety. Interestingly, facilitating anxiety was mentioned as an impetus for increasing participants' new experience of FLE in subsequent study. Both FLE and FLCA remarkably predicted FL achievement at macro and micro levels and vice versa. It is thus concluded that FLE and FLCA significantly interact with each other to form a dynamic relationship with FL achievement.

However, this research is not without limitations. Compared with participants in the quantitative survey, only 26 participants were recruited to take part in the qualitative study. Interview transcripts from these participants may not comprehensively represent the whole sample in this study. Future studies might need to explore sources of FLE and FLCA as well as effects of FL achievement on FLE and FLCA with a larger sample size.

Despite the shortcoming, the research findings have important pedagogical implications. Given that participants' internal variables particularly their language performance in exams are important sources for both FLE and FLCA, it is crucial to change the traditional exam-oriented teaching pattern and pay more attention to learners' positive and negative emotions in learning English. FLCA does not merely lead to negative effects, as facilitating anxiety was reported to significantly and positively correlate with FL achievement and to increase participants' FLE via motivation to learn harder and find efficient learning methods as well as sense of accomplishment. However, because of the "self-exacerbating syndrome" (Jussim & Eccles, 1995) referring to the fact that the experience of anxiety may tend to produce more anxiety, it is not wise to deliberately increase the amount of FLCA (Horwitz, 2017). For both EFL teachers and EFL learners, it is significant to maximise the "broaden" and "build" effects of FLE for reducing FLCA and promoting FL achievement.

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