Changes in and Influence of Intrinsic Motivation and Foreign Language Anxiety on English Speaking of English Major Freshmen in China

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Abstract: *For English major students, English speaking ability is of great importance, and their graduation and further career all require excellent English speaking ability. As freshmen, when having English speaking courses, students are easily influenced by anxiety and motivation. Intrinsic motivation and foreign language anxiety are extensively researched in EFL, but not many studies focus on their influence on English speaking of English majors or reveal the dynamic nature of these two affective factors. The current study is a quantitative research which involved a total of all 210 English major freshmen from two ordinary universities, using two questionnaires as research instrument, students' English speaking scores are analyzed with the results of questionnaires before and after they learn their English speaking courses. There are 4 findings of this research: Firstly, the foreign language anxiety negatively influence students' English speaking. Secondly, the intrinsic motivation positively influence students' English speaking. Thirdly, there are negative correlation between foreign language anxiety and intrinsic motivation. Fourthly, foreign language anxiety and intrinsic motivation are dynamic during learning process and can be influenced by the course.*

Keywords: intrinsic motivation; foreign language anxiety; English major students; speaking English

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1. Introduction

Anxiety is extensively studied in foreign language learning field. In the process of learning a second language, anxiety is the one of most influential affective factors (Naser & Nijr, 2019). Researches (Ali&Anwar, 2021; Aydin et al., 2020; Zhou & Lochtman, 2023; Ahmad et.al, 2020) proved that anxiety is of negative influence on foreign language learning. In 1986, the American psychologist Howitz first proposed the concepts of "foreign language anxiety" (FLA) and "foreign language classroom anxiety" (FLCA) (Naser & Nijr, 2019). Foreign language anxiety is the kind of anxiety that is usually caused by a specific type of situation such as speaking a foreign language. Studies about foreign language learning found that students with foreign language anxiety are prone to nervousness, worry about foreign language, fear and other negative emotions in the foreign language teaching environment, especially in the process of English practice, which are important factors affecting students' learning efficiency.

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Researchers like Chow and Wong (2017), Dewaele and MacIntyre (2016), He (2013), Liu and Wu (2021) and so on studied on FLA and proved that negative correlation are showed between FLA and language learning results and performance, also, FLA truly has negative effects on English speaking (Liu & Xiangming, 2019). Besides, Liu (2019) also pointed out that the researches on anxiety in foreign language field all tend to be one-time study, dynamic studies are limited. Current researches showed that anxiety in foreign language is dynamic, and it interacts with other variables such as motivation, self-confidence and learning experience (Dewaele & Dewaele, 2017; D¨ornyei et al., 2015; Gregersen et al., 2014).

In terms of motivation, psychologists and educators believed that motivation is a predictor of students' achievement and learning process, and that motivation contributes greatly to students' learning outcomes (Graham & Weiner, 1996; Bandura & Locke, 2003).

Ryan and Deci (2000 and 2018) argued that motivation can drive people to action, and motivation consists of intrinsic and extrinsic motivations that stimulate learners' desire to achieve goals, both intrinsic and extrinsic motivations can stimulate individuals' behavior and performance. Intrinsic motivation drives a person to constantly pursue better performance based on his or her interest in the discipline and desire to meet the need for competence and autonomy, as behaviour stimulated by intrinsic motivation is action of learners' own choice, their perceived interests and enjoyment in learning; while extrinsic motivation is usually driven by some practical form of reward, which is considered as the action outside the the self-determination realm (Ryan & Deci, 2000).

Although the research on motivation is well established, there is few research on the motivation of speaking English learning for undergraduate students majoring in English. Since the choice of being an English major in university is made by students themselves, whether the learning motivation of English speaking is because of students' intrinsic motivation and whether their intrinsic motivation will change in the learning process is worth to explore. Besides, different affective factors can have impact on each other in the learning process. The current study focuses on the changes and influence in intrinsic motivation and foreign language anxiety of English major freshmen in speaking English learning, and explore the impact on their English learning outcomes (test grades).

Therefore, three research questions are explored in the current study:
  i. What are the influence of FLA and intrinsic motivation on the speaking English of English major freshmen?
 ii. What is the relationship between FLA and intrinsic motivation of English major freshmen?
iii. What are the changes of FLA and intrinsic motivation before and after the learning of English speaking courses of English major freshmen?

2. Literature review

Foreign language anxiety (FLA)
According to Freud (1936), anxiety is a complex emotional experience that can be described as nervousness, restlessness or worry, long-term anxiety can make individuals lose confidence and face setbacks and pressure. In the 1950s-1960s, research on the relationship between anxiety and foreign language learning began to emerge (Spielberger, 2019) and gradually increased in the 1970s. In 1986, Howitz first proposed the concepts of "foreign language anxiety" which is an anxiety that is usually caused by a specific type of situation. Studies in the foreign language learning field found that students with FLA are prone to nervousness,

worry about learning foreign language, fear and other negative emotions in the foreignlanguage environment, especially in the process of foreign language practice, which are important factors affecting students' learning efficiency.

Anxiety is a central factor influencing foreign language learners' learning abilities (Naser & Nijr, 2019). Although some studies have shown that moderate anxiety can help foreign language learning (Sabti et.al, 2019), most studies confirm that anxiety has a negative impact on learning a foreign language. In addition, extensive researches showed that foreign language anxiety can be attributed to a variety of reasons both internal and external. There is a negative correlation between anxiety and students' academic performance, test scores, oral and written expression skills, and self-confidence and self-efficacy (Gardner & MacIntyre, 1993). Learners' personality traits and affective factors are associated with foreign language anxiety (Gregersen & Horwitz, 2002). Price (1991) also argues that variables such as the level of difficulty of foreign language courses, students' personal perceptions of their own language abilities, and certain personality and affective factors can affect and cause anxiety in foreign language learning.

Although some researchers have focused on the effects of anxiety on English learning, there is few research of its effect on speaking English learning of English majors. Also, studies of anxiety tend to be one-off, that is test students' anxiety level only once in a research with few studies on its change. Liu (2019) states that anxiety is dynamic. In addition, the current literature like Dewaele and Dewaele(2017), Dornyei (2015) and MacIntyre (2015) suggests that in foreign language learning process, anxiety is dynamic because it interacts with other variables such as motivation, self-confidence, and learning experience. Therefore, for the current research, it is worth to explore the influence and change of foreign language anxiety with intrinsic motivation in learning speaking English of English major freshmen.

The self determination theory (SDT)
The self determination theory (SDT) proposed by Ryan and Deci (2000) argues that motivation is divided into intrinsic motivation and extrinsic motivation, and both intrinsic and extrinsic motivation can stimulate individuals' behavior and performance. Intrinsic motivation drives a person to constantly pursue better performance based on his or her interest in the subject and desire to meet the need for competence and autonomy, while extrinsic motivation is usually driven by some practical form of reward, such as some material benefits, which is considered outside the self-determination. Self determination theory discusses the process of when positive beliefs within a person persist, that person will work harder to achieve the goals they are committed to. In the process of stimulated by intrinsic motivation, the three intrinsic needs of the person—autonomy, competence, and psychological connection—are achieved, leading to optimal progress and development for the individual (Wu & Lee, 2017).

The core concept of the SDT is intrinsic motivation, which is based on the satisfaction of acting for one's own passion or pursue (Marie, 2017).When stimulated by the intrinsic motivation, a person's behavioral autonomy, ability, and psychological relevance to engage in intrinsic motivation will be satisfied (Liu, 2020), so intrinsic motivation can better motivate action in pursuit of goals. Only through internalization, integration, and regulation, can motivation become part of the process of self-determination and better facilitate the process of learning, and these could be achieved by intrinsic motivation (Wu & Lee, 2017).

For language learning, learning motivation is a thinking process in which learners achieve specific goals and voluntarily put in the effort while remaining motivated throughout the

learning process. Motivation is an important factor in achieving proficiency in a second language (Gardner & Lambert, 1972). Studies about the type of motivation and its influence in foreign language field based on the SDT are abundant, Yan (2023) did a research to measure controlled motivation and autonomous motivation based on SDT. In the research of Maeda (2019), SDT also used as the framework to explore the intrinsic and extrinsic motivation.

Apart from the above research, research by Al-Mahrooqi and Denman (2014) and study of Cheng (2014) analyzed learning motivation based on SDT and state that in foreign language learning, learning motivation is dynamic and influenced by other affective factors. Gardner (1985) suggests that there may be a strong link between motivation and FLA. Researches (Liu & Cheng, 2014; Liu & Zhang, 2013) have shown that anxiety and motivation have effect on each other. Similarly, studies of Alkhateeb (2014) and Zhou et al. (2017) have also shown that motivation has an impact on FLA and students' achievement. While many studies have explored the relationship between FLA and motivation, relatively few have examined changes in intrinsic motivation and FLA and the relationship and influence between the two affective factors. As Wu and Lee (2017) and Cheng (2013) suggested that motivation is dynamic and that the relationship with anxiety needs to be further explored. In addition, as Liu (2019) discussed, while there is a large number of research on the effects of anxiety and motivation in English learning, most current studies are focus on non-English major college students or younger learners, and as the research of Liu and Xiangming (2019) presented, one time data studies are mostly and there are not enough studies on exploring the dynamic change of motivation and anxiety.

Compare with other majors, English major students have to meet higher requirements in speaking English, they are more likely to be stressed and affected by other emotional factors. In addition, the choice of university major is based on personal freedom, it is worth exploring whether English majors are motivated by intrinsic motivation in speaking English learning. Therefore, this quantitative study attempts to collect data over a period of one semester (10 teaching weeks) of English major freshmen to better reveal the changes in FLA and intrinsic motivation and their relationship with students' speaking English learning outcomes.

3. Research

Research design

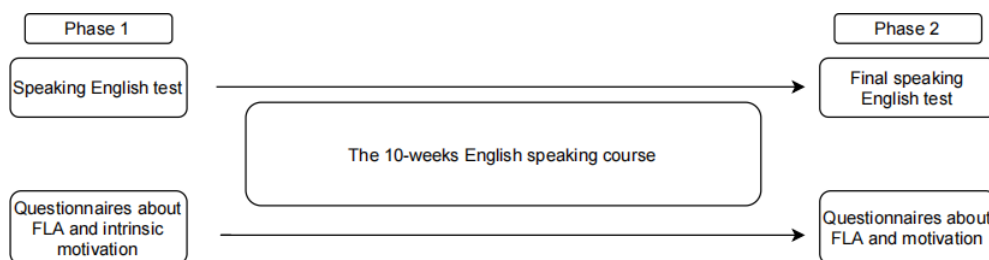**Figure 1: the research process**

Table 1: the research design

Phases of Data	Group of Participants	Research Question	Data Collection/Onstruments	Data Analysis
Phase One	210 English major freshmen	RQ1 2 3	Quantitative/Questionnaire	SPSS
Phase Two	210 English major freshmen	RQ1 2 3	Quantitative/Questionnaire	SPSS

The research process are shown in figure 1, the phase 1 is before learning the English speaking course and phase 2 is after the English speaking course, Since the current study is focus on participants' intrinsic motivation and foreign language anxiety by collecting quantitative information, a quantitative descriptive research is developed. In both phrase 1 and 2, participants are required to take part in a speaking English test and answer two questionnaires related to intrinsic motivation and foreign language anxiety, the research design is showed in table 1.

Participants
In the current study, 210 first-year English majors of two ordinary universities in China were selected to examine changes and effects of FLA and intrinsic motivation on English speaking performance through two phrases' research.

Instruments
Foreign Language Classroom Anxiety Scale (FLCAS)
The foreign language classroom scale developed by Horwitz and Joann Cope and translated by Wang (2003) was adapted in the current study. This scale consists of 33 questions and was modified in the research of Liu and Li (2019), according to the studies of FLCAS ,this scale is related to 5 factors about anxiety when learning a foreign language, which are fear of English phonetic communication, worry about English class, one's own classroom performance, peers' performance and English test, it covers different aspects of English learning in the classroom (Liu & Li, 2019). Besides, it is divided into four dimensions: worry, nervousness, fear of speaking English and fear of being asked in class (Wang et al., 2023). In the current study, since the foreign language anxiety of speaking English is measured before and after students' learning of speaking courses, 10 questions in FLCAS were selected and modified from FLCAS according to previous studies, statements 1, 6, 7, 8, 9, 12, 19, 21, 23, and 31 were selected to cover 5 factors and 4 dimensions and measure students' foreign language anxiety in the English speaking courses.

English Motivation Scale
To measure the intrinsic motivation of English major freshmen, a questionnaire based on the English motivation scale developed by Clement, et.al (1994). It follow the five-point Likert scale. In terms of intrinsic motivation scale in the current study, as the measurements of intrinsic motivation concern learners' free choice (self-determined learning), their perceived interests and enjoyment in learning, and intrinsic motivation can be maintained or enhanced by both perceived competence and learning autonomy (Ryan & Deci, 2000). Based on this, 8 statements (eg. I am interested in English culture; I enjoy learning speaking English) are selected to measure the degree and changes of participants' intrinsic motivation.

Reliability & validity
The reliability test was carried out in phase 1 and 2 of the FLA and intrinsic motivation scales, and Cronbach's Alpha was 0.942 (FL scale phase 1), 0.902 (Intrinsic motivation scale phase 1), 0.923 (FL scale phase 1), 0.901 (Intrinsic motivation scale phase 2), all the Cronbach's Alpha was more than 0.9, indicating that the reliability of the scales was reliable. Besides,the test coefficients of KMO and Bartlett were all more than 0.8, indicating that the FLA and intrinsic motivation scales are of good structural validity.

4. Results

Table 2: Descriptive statistical analysis of FLA scale

Descriptive statistical analysis of FLA scale

		J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	Total
Phase 1	Mean value	3.08	3.1	2.8	2.82	2.71	2.82	2.99	2.92	3.02	2.82	29.05
	SD	1.281	1.266	1.315	1.223	1.231	1.25	1.327	1.344	1.301	1.234	8.69
Phase 2	Mean value	2.34	2.14	2.26	2.18	2.34	2.12	2.42	2.14	2.11	2.12	22.18
	SD	1.083	1.194	1.125	1.108	1.168	1.037	1.368	1.047	1.047	1.035	8.65

From the descriptive statistical results of the FLA (Table 2), compare with the mean value in phase 1, the mean value in phase 2 was reduced by 6.87 points, indicating that students' FLA decreased significantly after learning the English speaking course.

Table 3: Descriptive statistical analysis of FLA scale

Descriptive statistical analysis of intrinsic motivation scale

		D1	D2	D3	D4	D5	D6	D7	D8	Total
Phase 1	Mean value	2.3	2.17	2.27	2.2	2.29	2.15	2.2	2.31	17.87
	SD	1.111	1.192	1.126	1.078	1.143	1.056	1.258	1.18	7.049
Phase 2	Mean value	3.16	2.82	2.87	2.67	2.88	2.99	2.93	3.08	23.41
	SD	1.288	1.299	1.209	1.17	1.153	1.327	1.307	1.332	7.765

From the descriptive statistical results of the intrinsic motivation scale (Table 3), the mean value in motivation increased by 5.54 points, indicating that students' intrinsic motivation has improved significantly after the learning of speaking English course.

Table 4: correlation analysis in phase 1

Phase 1

		Y1(English speaking test grades)	J1	D1
Y1	Pearson Correlation	1	-.897**	.881**
	Significance		0	0
	N	210	210	210
J1 total	Pearson Correlation	-.897**	1	-.815**
	Significance	0		0
	N	210	210	210
D1 total	Pearson Correlation	.881**	-.815**	1
	Significance	0	0	
	N	210	210	210
** means based on .01				

From the results of the correlation analysis in phase 1 (Table 4), the sample size is 210. The Pearson correlation coefficient between FLA and achievement r=-0.897, p<0.001, and there was a significant negative correlation between FLA and English speaking grades. The Pearson correlation coefficient between intrinsic motivation and performance r=0.881, p<0.001, and there was a significant positive correlation between intrinsic motivation and English speaking grades.

Table 5: correlation analysis in phase 2

		Phase 2		
		Y 2 (English speaking test grades)	J2	D2
Y2	Pearson Correlation	1	-.868**	.896**
	Significance		0	0
	N	210	210	210
J2 total	Pearson Correlation	-.868**	1	-.821**
	Significance	0		0
	N	210	210	210
D2 total	Pearson Correlation	.896**	-.821**	1
	Significance	0	0	
	N	210	210	210
** means based on .01				

From the results of the correlation analysis of the phase 2 (Table 5), the sample size is 210. The Pearson correlation coefficient between anxiety and grades r=-0.868, p<0.001, and there is a significant negative correlation between FLA and grades. The Pearson correlation coefficient between motivation and achievement r=0.896, p<0.001, which is significant, and there is a significant positive correlation between intrinsic motivation and English speaking grades.

For the analysis between FLA and intrinsic motivation, phase 1: The Pearson correlation coefficient between anxiety and motivation r=-0.815, p<0.001 was statistically significant, and there was a significant negative correlation between anxiety and motivation. phase 2: The Pearson correlation coefficient between anxiety and motivation r=-0.821, p<0.001, and there was a significant negative correlation between anxiety and motivation.

5. Discussion

The correlation analyses, as well as reliability analysis indicated that the intrinsic motivation and FLA scales were highly reliable and valid and these two scale can measure the FLA and intrinsic motivation of the participants in this study.

In terms of foreign language anxiety, it is clear that after the learning of the speaking English course, compare with data in phase 1, students' overall foreign language anxiety level in phase 2 was significantly lower, which shows their foreign language anxiety decreased. This finding is consistent with previous researches of Liu and Li (2019), Pan and Zhang (2021), Liu and Yuan (2021) as well as Jin and MacIntyre (2021). Besides, previous researchers like Ömer and AKÇAYOĞLU (2021), Dikmen (2021), Pakpahan and Gultom (2021) and Shamsi et al. (2019) all proved students' foreign language learning achievement will be improved with a lower anxiety level. In the current study, with an overall lower anxiety level in phase 2, students overall grades increased.

For the intrinsic motivation, the overall intrinsic motivation and speaking English score increased in phase 2. It is clear that the intrinsic motivation has positive correlation with students' learning achievement. As learning motivation is dynamic in the learning process (Lou & Noelsm, 2019, Namaziandost et al., 2019) and motivation can promote the learning of foreign language(Elaish et al., 2019; Sun & Gao, 2020), it is also be proved in the current study.

Furthermore, the current study revel that the foreign language anxiety is negatively related to the intrinsic motivation. As proved that affective factors in the foreign language learning can have effects on each other, correlated with the researches of Aydin (2020), Namaziandost (2019), Elaish (2019) and Fandiño (2019) which showed that anxiety and motivation can influence each other in the foreign language learning.

All these findings indicate that the intrinsic motivation and foreign language anxiety are of great importance and worth exploring in the English speaking learning of English major freshmen.

6. Conclusion and Implications

The current study did a quantitative research on the changes and influence of foreign language anxiety (FLA) and intrinsic motivation in a 10-week teaching semester. The main findings showed that:
  i. For English major freshmen, although they choose the major on their own mind, foreign language anxiety still exists in their speaking English learning, the motivation of learning speaking English at the beginning is not intrinsic.
  ii. 2. In phase 2 (after having the English speaking course) a decrease was showed in students' FLA level and an increase was showed in students' intrinsic motivation level. It is obvious that the FLA and intrinsic motivation are changing during the learning process.
  iii. 3. In both phase 1 and 2, the speaking test grades of students all showed positive correlation with motivation and negative correlation with FLA. Indicated that the level of FLA and intrinsic motivation can predict the test grades of students.
  iv. 4. A negative correlation is showed between FLA and intrinsic in both phase 1 and 2.

Therefore, how to decrease the foreign language anxiety and its influence on learning achievement and intrinsic motivation and other affective factors which can promote the language learning is of great importance in foreign language teaching and learning. As discussed by Shamsi (2019), Gok and Bozoglan,(2023) as well as Al (2019), some teaching methods and pedagogy could be adopted in the classroom and crate a comfortable learning atmosphere for students to decrease the FLA. Apart from the external factors like classroom arrangement, teacher's support and pedagogy etc., internal factors like affective factors are also important. As researches showed that the affective factors can influence each other, for example, the review of Naser and Nijr (2019) showed that lack of confidence can promote anxiety in language learning and the research of Passiatore et al. (2019) indicated the influence between self-efficacy and anxiety. Therefore, for teachers, in order to decrease students' FLA level, paying attention on promoting some positive affective factors in the classroom is also necessary.

Besides, for intrinsic motivation, as this type of motivation can stimulate actions for one's inherent satisfactions rather than for some separable consequence (Ryan & Deci, 2000), intrinsic motivation could be regard as a positive force to promote self-regulated learning (Van et al., 2012; Winne, 1995) and lower the stress in the learning process (Baker, 2004). If students' intrinsic motivation could be promoted in English learning, their learning efficacy will be increased and FLA will be decreased. Some teaching methods and pedagogy like cooperative learning (Namaziandost et.al, 2019) and mobile game application (Elaish et.al, 2019) could be used to promote students' learning motivation. Additionally, as the current research indicated, the intrinsic motivation is negatively related to anxiety, teachers should have the awareness of the importance of intrinsic motivation and other affective factors in

foreign language learning and take actions to help students to decrease the foreign language anxiety also promote their intrinsic motivation.

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