Will Anxiety Boost Motivation? The Relationship between Anxiety and Motivation in Foreign Language Learning

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ABSTRACT

While anxiety is widely regarded as a type of negative emotion, it has been noticed that certain types of people could be more motivated when they face certain degrees of anxiety. However, previous studies have not provided definitive results on anxiety's correlation with motivation in foreign language learning contexts. We aim to investigate the relationship between anxiety and motivation in order to explore the possibility of using anxiety to boost motivation in foreign language contexts. This study adopted the Achievement Anxiety Test (AAT) and the Academic Motivation Scale (AMS), which led to the analysis of data collected from 173 Chinese participants using the Pearson Correlation Method. The findings reveal that facilitating anxiety is significantly and positively correlated with both intrinsic and extrinsic motivation, as well as amotivation (the status of not intrinsically or extrinsically motivated). In addition, debilitating anxiety is also significantly correlated with extrinsic motivation and amotivation. The findings provide theoretical support for the possibility of using anxiety to boost motivation in foreign language learning contexts. Future studies could use the findings to explore the causes of facilitating anxiety, the contributory factor of motivation and then draw a connection between anxiety and motivation for enhanced foreign language learning outcomes.

KEYWORDS: anxiety, motivation, correlation, foreign language learning

Introduction

Anxiety is an important affective factor and a vital variable in foreign language learning (Horwitz, Horwitz, & Cope, 1986; Jain & Sidhu, 2013; Kim & Cho, 2018; Scovel, 1978). However, Scovel (1978) states that anxiety is not a well-understood construct and that it is "mixed and confusing" (p. 132). At the same time, motivation is accepted as a significant factor in relation to anxiety, but the related research on their correlation is both scarce and inconsistent. For example, Kirova, Petkovska, and Koceva (2012) proposed that anxiety is

negatively correlated with motivation in foreign language learning while Chapell et al. (2005) and Lavasani, Weisani, and Ejei (2011) indicated that motivation is positively correlated with anxiety. Therefore, Alico (2016) suggested that there is a need to study the interrelationship between anxiety and motivation in foreign language learning contexts.

We aim to answer one main research question: what is the relationship between anxiety and motivation in foreign language learning for university students? This study conducted a comprehensive literature review on previous studies on the current topic, examined whether it is possible to use anxiety to boost motivation, and provided better understanding to the role that anxiety and motivation play in foreign language learning.

Hypotheses for the current study are:

Hypothesis 1: Facilitating anxiety is significantly and positively correlated with both intrinsic and extrinsic motivation.

Hypothesis 2: Debilitating anxiety is significantly and positively correlated with extrinsic motivation and amotivation.

Hypothesis 3: Facilitating anxiety is not correlated with debilitating anxiety, and amotivation is not correlated with intrinsic or extrinsic motivation.

Review of related literature

Anxiety and Motivation in foreign language learning

Horwitz et al. (1986) defined language anxiety as "a distinct complex of self-perceptions, beliefs, feelings, and behaviours (which are) related to classroom language learning arising from the uniqueness of the language learning process" (p. 128). MacIntyre and Gardner (1994) defined it as "the feeling of tension and apprehension specifically associated with second language contexts" (p. 284), which will "interfere with the acquisition, retention and production of the new language" (MacIntyre & Gardner, 1991, p. 86). Therefore language anxiety refers to the feeling of tension provoked by the language learning context.

Language anxiety is important due to its universality, unavoidability and importance in language learning. Firstly, language anxiety universally exists among students, especially in testing situations (Horwitz et al., 1986). Anxiety is also unavoidable in language learning contexts since language learning "entails risk-taking and is necessarily problematic" (Horwitz et al., 1986, p. 125), which threatens learners' sense of self and worldview. Additionally, anxiety is considered to have profound effects on language learning by preventing students from receiving inputs, which interferes learning efficiency (Krashen, 1982). Hence, anxiety is widely accepted as a type of negative emotion that brings negative effects on language learning. However, Eysenck (1979) suggested that anxiety would not impair performance efficiency once the students are aware of it and then make "sufficient effort expenditure" (p. 363) to facilitate their learning. More recently, Morrison and Heimberg (2013) conducted a study and showed the possibility of using attentional control to mediate anxiety to achieve positive effects on learning. Morrison and Heimberg (2013) suggested that a better

understanding of anxiety could help control the negative impact on students' ability to receive inputs, which therefore contributes to positive and effective language learning.

Motivation is also a crucial factor in foreign language learning and plays a driving force for individuals in performing tasks and achieving goals, which can be categorized as intrinsic motivation and extrinsic motivation (Qiao, Abu, & Kamal, 2013). One of the most important affective factors in education, or language learning, is motivation (Al-Hoorie, 2017; Vallerand et al., 1992). As to the classification of motivational factors, we divided them into three categories: intrinsic motivation, extrinsic motivation, and amotivation. In accordance with Chastain (1976), Scovel (1978) proposed that "the most direct and simplest" (p. 129) way is to categorise motivation as intrinsic and extrinsic motivation. Keaney and Mundia (2014) supported this way of classification by saying that "human behavior is always generated by either an inner force commonly known as internal motivation or an outside force referred to as external motivation" (p. 122). In addition to intrinsic and extrinsic motivation, Deci and Ryan (1985) posited a third type of motivation construct: amotivation, which refers to a situation of neither being intrinsically nor extrinsically motivated, such as "I don't know why I come to study" and "I think I am wasting my time at school". There are three subcategories for both intrinsic and extrinsic motivation, as shown below:

Intrinsic motivation toward simulating experiences (IM-Experience). Learners engage in activities or performing tasks to experience stimulating sensations such as fun and excitement. For example: "I learn English because I enjoy communicating with my teachers".

Intrinsic motivation toward achievement (IM-Achievement). IM-achievement is the motivation that occurs when a person can be driven by success or achievements. For example: "I study because of the satisfaction of mastering difficult subjects".

Intrinsic motivation toward knowledge (IM-Knowledge). IM-knowledge refers to "Internal constructs such as curiosity, feeling and self-interest, which motivate individuals to explore new ideas and develop knowledge for personal satisfaction and enjoyment" (Qiao et al., 2013, p. 201). For example: "I study because I enjoy the feeling of increasing my knowledge".

Extrinsic motivation identified regulation (EM-Identified). EM-identified describes how motivation is regulated because one individual highly values the behaviour or sees its usefulness. It occurs when a learner will "act out of a belief in the personal importance or perceived value of the activity" (Ryan & Deci, 2017, p. 188). It is "external and somewhat self-determined" (Qiao et al., 2013, p. 201). For example: "I study because I know studying is good for me".

Extrinsic motivation introjected regulation (EM-Introjected). EM-introjected describes when the learner's behaviours are regulated due to the "external pressure incorporated into them" (Qiao et al., 2013, p. 201). Cook and Singleton (2014) defined that EM-introjected occurs when students accept the externally imposed rules as norms they should follow so as not to feel guilty. It is "external and somewhat self-determined" (Qiao et al., 2013, p. 201). For example: "I must be at school on time" and "I study because I want people to keep thinking I am a good student".

Extrinsic motivation external regulation (EM-External). EM-external comes entirely from external sources such as rewards or threats (Cook & Singleton, 2014). It is "external and least self-determined" (Qiao et al., 2013, p. 201). For example: "I study because I can get rewards from parents".

The relationship between Anxiety and Motivation in English Learning Context

Previous research has had contradictory findings on the relationship between anxiety and motivation in learning or foreign language learning contexts (see Table 1). The unsettled concerns are about the overall correlation, interaction, dependability and causality of the two affective factors. The specific unsettled concerns are: 1) Whether motivation and anxiety are correlated. If yes, is the correlation positive or negative? 2) How do motivation and anxiety interact with each other? Is motivation influencing anxiety or anxiety influencing motivation? 3) Which variable is dependent, namely is motivation a part of anxiety or vice versa? and 4) Which variable causes the other one?

Scholars have not presented consistent results on whether anxiety and motivation are correlated. While most previous studies assumed that the two variables are somehow correlated, the study by Zhang (2009) suggested that there is no correlation between learning motivation and writing anxiety in language learning.

Among the studies that confirmed the correlation between anxiety and motivation in foreign language contexts, scholars did not reach an agreement on the specific relationship (e.g. positive vs. negative, direct vs. indirect). A considerable number of researchers viewed anxiety as a factor negatively correlated with motivation. For example, Alico (2016) concluded that the two variables are negatively correlated "as language learning motivation increases, writing anxiety level decreases" in language learning (p. 6); Jain and Sidhu (2013) found that anxiety has a negative impact on motivation among tertiary students; Amiryousefi and Tavakoli (2011) stated that (test) anxiety negatively affects motivation in TOEFL reading preparation; Magelinskaitė, Kepalaitė, and Legkauskas (2014) concluded that lowered anxiety may enhance learning motivation after investigating the relationship of learning motivation, school anxiety and social competence in primary school; and Kirova et al. (2012) conducted an experiment in Macedonia and found that decreasing anxiety level is a way to improve motivation. Other studies demonstrated a similar tendency (Gardner, Lalonde, & Pierson, 1983; Gardner, Tremblay, & Masgoret, 1997; Hashimoto, 2002). However, recent studies highlighted the possibility of a positive correlation between the two variables. Strack, Lopes, and Esteves (2015) described that "while some individuals experience anxiety as debilitating … others seem to thrive in similarly adverse circumstances" and "the latter may be driven to work harder when they experience anxiety in the face of difficult challenges" (p. 579). As a result, certain types of people get more self-motivated when under pressure (Strack & Esteves, 2015; Strack, Lopes, Esteves, & Fernandez-Berrocal, 2017). Though not for foreign language learning, the study by Wang, Shakeshaft, Schofield, and Malanchini (2018) sheds light on the possibility of the positive correlation between anxiety and motivation in learning. Wang et al. (2018) supported the view that anxiety and motivation could be positively correlated as their findings showed that the most engaged students were characterized by a combination of high exam anxiety high motivation in (math) learning.

Whether the correlation is direct or indirect remained an issue. According to Dai and Zhao (2007), academic motivation has a direct and significant effect on academic achievement anxiety in foreign language learning; in contrast, in the study of Qin and Wen (2002), motivation and anxiety are correlated but not correlated directly, namely, other variables are influencing their relationships, such as language competence and gender.

Previous research also reported contradictory findings on which variable has an effect on the other. Lavasani et al. (2011) called for using motivation to describe anxiety. In that study, all intrinsic motivation, extrinsic motivation, and amotivation have an effect on anxiety. Papi (2010) argued that anxiety has a profound effect on motivation with the statement "anxiety is a key factor of self-confidence and thereby a prominent characteristic of motivated language learners" (p. 470). Scovel (1978) stated that it is anxiety that deals with motivation, but Baloğlu (2003) proposed that it is motivation that affects anxiety since the difficulties in testing anxiety are originated from the attitude, emotion and motivation variables. However, because of the difficulties assessment, most of the studies laid focus on the general relationship between the two factors instead of the cause-effect relationship.

There are also other interesting viewpoints on the dependability of the two variables. For example, Lavasani et al. (2011) suggested that motivation constitutes a part of anxiety, while Schwartz (1972) and Scovel (1978) proposed that anxiety is a part of (intrinsic) motivation. In the second language Motivational Self System by Dornyei (2003), English anxiety is one of the five latent variables contributing to motivation.

Besides, researchers have argued on the causality of motivation and anxiety in learning or foreign language contexts. Deng (2004) and Liu (2015) proposed that motivation causes academic achievement anxiety, while some other researchers supported the viewpoint that anxiety causes motivation. For example, Elliott and Dweck (1988) found that the motivation of 'getting a certificate' will directly increase test anxiety, and Chapell et al. (2005) believed that anxiety can be good for certain types of students, since anxiety, especially test anxiety in foreign language learning, trigger more time input on study more careful attention to questions on the examination.

Since motivation and anxiety in foreign language contexts are multi-faceted constructs (Cakici, 2016; Wang et al., 2018), researchers have attempted to focus on the constructs of the two affective factors for enhanced understanding. Linnenbrink and Pintrich (2000) divided motivation into the 'motivation for successes' and 'motivation for failure avoidance', following the statement that 'motivation for success' is connected to low anxiety and 'motivation for failure avoidance' is connected to high anxiety. Therefore, the general term motivation and the term anxiety are both positively and negatively correlated. Deng (2004) reviewed motivation as 'intrinsic motivation' and 'extrinsic motivation' and concluded that intrinsic motivation is negatively correlated with anxiety.

Table 1

Summaries of Previous Studies on the Relationship between Anxiety and Motivation

Relationship	Statement	Reference
Overall correlation	Motivation and anxiety are negatively correlated.	(Alico, 2016; Amiryousefi & Tavakoli, 2011; Gardner et al., 1983; Gardner et al., 1997; Hashimoto, 2002; Jain & Sidhu, 2013; Kirova et al., 2012; Magelinskaitė et al., 2014)
	Motivation and anxiety are/could be positively correlated.	(Strack & Esteves, 2015; Strack et al., 2017; Strack et al., 2015; Wang et al., 2018)
	Motivation and anxiety are directly correlated.	(Dai & Zhao, 2007)
	Motivation and anxiety are indirectly correlated	(Qin & Wen, 2002)
	There is no correlation between anxiety and motivation.	(Zhang, 2009)
Interaction	Motivation has an effect on anxiety.	(Baloğlu, 2003; Lavasani et al., 2011)
	Anxiety has an effect on motivation.	(Papi, 2010; Scovel, 1978)
Dependability	Motivation is a part of anxiety.	(Lavasani et al., 2011)
	Anxiety is part of motivation.	(Dornyei, 2003; Schwartz, 1972; Scovel, 1978)
Causality	Motivation causes anxiety.	(Deng, 2004; Liu, 2015)
	Anxiety causes motivation.	(Chapell et al., 2005; Elliott & Dweck, 1988)

Scholars explained the inconsistent research results by suggesting there is an interaction between facilitating anxiety and debilitating anxiety (Qin & Wen, 2002; Zhao & Xie, 2013; Zhou & Ying, 2011). Facilitating anxiety is a concept differentiated from debilitating anxiety by (Alpert & Haber, 1960; Kleinmann, 1977; Scovel, 1978). "The facilitating anxiety refers to anxiety that contributes to good performance, whereas the debilitating anxiety can lead to poor performance" (Liu, 2015). If facilitating anxiety outweighed debilitating anxiety, the general effect of anxiety might be positive, and vice versa. According to Child (2004), with the increase of motivation, the level of anxiety rises as well; when the motivation is increased to a certain degree, anxiety will begin to bring negative effects. Child (2004) did not mention where is the 'certain degree', nor the concept of facilitating and debilitating anxiety, but his theory is coherent with the facilitating/debilitating anxiety theory.

We suggest that the concept of facilitating and debilitating anxiety can explain the mixed research results via further empirical studies. Hence, the current research adopts facilitating anxiety and debilitating anxiety as constructs of anxiety.

Research methods

In the current study, we used an online survey which we distributed to college students via

emails. This was a random sampling study involving 186 students from three colleges in Chinese universities. Since the target colleges have summer school programs for secondary-school students, we designed a filter question about the participants' educational level. After removing 12 surveys from secondary-school students and one survey with all answers being 3 (Neutral), we got 173 valid surveys. The number of valid participants in the current study is 173. As shown in Table 2, 42.2% of the participants were males (n=73) and 55.68% were females (n=100). The majority of them were undergraduate students (n=154, 89.0%). The self-report survey results indicated that the majority of the participants were "above average but not top 20%" in foreign language learning (n=125, 72.3%), followed by participants "below average but not the last 20%" (n=24, 13.9%) and students scored top 20% academically (n=23, 13.3%). Only one participant reported that he or she was the last 20% in academic performance (0.6%).

Table 2

Participants' Gender, Educational Level and Academic Performance

Variable		N	Proportion
Gender	Male	73	42.20%
	Female	100	57.80%
Educational level	Undergraduate	154	89.00%
	Postgraduate	19	11. 0%
Academic performance	The last 20%	1	0.60%
	Below average but not the last 20%	24	13.90%
	Above-average but not top 20%	125	72.30%
	The top 20%	23	13.30%

The study adopted the Achievement Anxiety Test (AAT) by Alpert and Haber (1960) and the Academic Motivation Scale (AMS) by Vallerand et al. (1992). Both scales are 5-point Likert scales from 1 (Strongly Disagree) to 5 (Strongly Agree). The AAT contains 19 questions, including nine for facilitating anxiety and 10 for debilitating anxiety; AMS contains 27 questions, covering seven sub-categories related to intrinsic motivation, extrinsic motivation and amotivation. Since several items are repetitive in the same category, we removed three items from AAT (item 10, 15 and 17 of the original scale) and six items from AMS (item 2, 5, 10, 14, 15, 25 and 28 of the original scale). The final questionnaire items were restructured as showed in Figure 1 and the appendixes.

We computed Cronbach's alpha to assess whether the 16 items in AAT and the 21 items in AMS formed a reliable scale. The Cronbach's alpha for AAT and AMS were 0.846 and 0.809 respectively, and the Cronbach's alpha for the overall questionnaire was 0.890, which indicated that the items from both scales had reasonable internal consistency reliability (higher than 0.70). We also calculated the Guttman's reliability of the two scales for enhanced reliability. The results showed that the Guttman's reliability for AAT ranged from 0.786 to 0.893 and that for AMS ranged from 0.770 to 0.891.

Before analysing the data, we organised the 37 sub-questions into nine subcategories (seven for motivation and two for anxiety) by counting the *Mean*; for example, item 1, 6 and 17 in

AMS contribute to IM-Experience, so the *Mean* of the three answers for each participant was calculated. The final analysis was based on the transformed data. The correlation was calculated with Pearson Correlation provided by the SPSS software.

Figure 1

Item allocation of AMS and AAT

AMS: Academic Motivation Scale

AAT: Achievement Anxiety Test
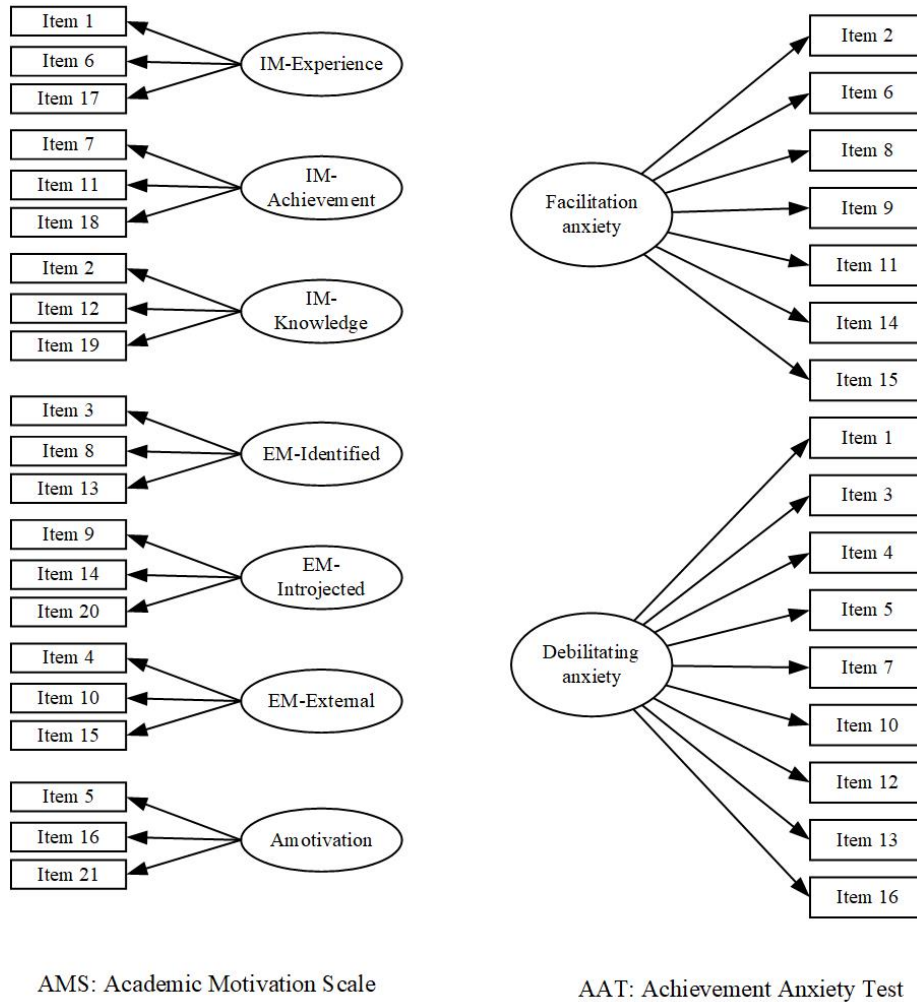
Results

Descriptive data

Table 3 demonstrates the descriptive statistics of college students learning English as -a foreign language in China in terms of their motivation and anxiety.

The data shows that the participants were more extrinsically motivated than being intrinsically

motivated, with the *Mean* of the three sub-constructs of extrinsic motivation ranging from 3.82 to 4.18 and that for intrinsic motivation ranging from 3.57 to 4.02. The participants reported a low level of amotivation (*Mean* = 2.68). The reported amotivation has a high Standard Deviation (1.168), which indicates that the amotivation level of the participants spread out over a large range of values. In terms of foreign language anxiety, the participants reported higher level of facilitative anxiety compared with the debilitating anxiety (*Mean* = 3.47 and 3.23).

Table 3

Descriptive Statistics of the Variables

Construct	Sub-construct	Mean	Standard Deviation	Skewness	Kurtosis
Intrinsic motivation		3.83	0.574	-0.202	-0.269
	IM-Experience	3.57	0.704	-0.155	-0.523
	IM-Achievement	3.92	0.625	-0.261	0.068
	IM-Knowledge	4.02	0.631	-0.392	-0.096
Extrinsic motivation		4.03	0.444	-0.523	1.252
	EM-Identified	4.18	0.517	-0.490	0.460
	EM-Introjected	3.82	0.650	-0.282	-0.114
	EM-External	4.09	0.559	-0.602	0.823
		2.68	1.168	0.264	-1.034
Amotivation		2.68	1.168	0.264	-1.034
Facilitating anxiety		3.47	0.714	-0.128	-0.053
Debilitating anxiety		3.23	0.681	0.089	-0.203

Note: IM: intrinsic motivation; EM: extrinsic motivation

Correlation of anxiety and motivation in foreign language learning contexts

Table 4 and 5 below report the correlation among the constructs of anxiety and motivation for university foreign language learners.

Table 4 shows that the survey results confirmed Hypothesis 1 ("facilitating anxiety is significantly and positively correlated with both intrinsic and extrinsic motivation") since facilitating anxiety is correlated with intrinsic and extrinsic motivation at a significant level (*p* < .001). To be specific, facilitating anxiety is significantly correlated with intrinsic motivation (*ρ* = .651) and extrinsic motivation (*ρ* = .333), as well as the sub-constructs of the two types of motivation except for the extrinsic motivation for external rewards (EM-External) (*ρ* ranged from .259 to .644, *p* < .001). As shown in Table 5, facilitating anxiety is related to the providence of intrinsic motivation, including the motivation towards experience (IM-Experience), the motivation to get achievements (IM-Achievement) and the motivation to get knowledge (IM-Knowledge); even though facilitating anxiety also helps in triggering extrinsic motivation (*ρ* ranged from .321 to .345, *p* < .001), the correlation is not as strong as it with intrinsic motivation (*ρ* ranged from .523 to .644, *p* < .001). The correlation between facilitating anxiety and extrinsic motivation for external rewards (EM-External) is not significant.

Hypothesis 2 suggests that debilitating anxiety is significantly and positively correlated with extrinsic motivation, and is possible to be correlated with amotivation. The Pearson correlation tests support the hypothesis at a significant level ($p < .001$). The data further indicate that debilitating anxiety and amotivation are closely related to each other with the ρ value of .688, which implies that debilitating anxiety is less likely to trigger learning motivation in foreign language learning contexts. It is notable that debilitating anxiety is also significantly correlated with IM-Experience, with the underlying reasons worth further explorations.

Based on the definition, we raised the third hypothesis that facilitating anxiety is not correlated with debilitating anxiety since the former one is regarded as beneficial while the latter one functions contradictorily; we also hypothesized that amotivation is not correlated with intrinsic or extrinsic motivation because the term amotivation refers to the status of being non-motivated. The data confirmed that amotivation is not significantly correlated with general intrinsic or extrinsic motivation; however, it is significantly correlated with the extrinsic motivation introjected regulation (EM-Introjected) ($\rho = .265$, $p < .001$). An example of EM-Introjected in foreign language learning is students who attend classes because they fear the negative comments of their peers. The result indicated that compared with the extrinsic motivation identified regulation (EM-Identified) in pursuit of personally valued outcomes and the extrinsic motivation external regulation (EM-External) for external rewards, the motivation that involves the internalization of external controls (EM-Introjected) is possible to demotivate students in certain foreign language learning contexts.

Table 4

Correlation Matrix of motivation and anxiety in foreign language learning contexts

	Intrinsic motivation	Extrinsic motivation	Amotivation	Facilitating anxiety	Debilitating anxiety
Intrinsic motivation	1	-	-	-	-
Extrinsic motivation	.500**	1	-	-	-
Amotivation	-0.064	0.012	1	-	-
Facilitating anxiety	.651**	.333**	.259**	1	-
Debilitating anxiety	0.125	.161*	.688**	.324**	1

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

Table 5

Correlation Matrix of the sub-constructs of motivation and anxiety in foreign language learning contexts

	IM-Experience	IM-Achievement	IM-Knowledge	EM-Identified	EM-Introjected	EM-External	Amotivation	Facilitating Anxiety	Debilitating Anxiety
IM-Experience	1	-	-	-	-	-	-	-	-
IM-Achievement	.620**	1	-	-	-	-	-	-	-
IM-Knowledge	.641**	.714**	1	-	-	-	-	-	-
EM-Identified	.358**	.594**	.606**	1	-	-	-	-	-
EM-Introjected	.281**	.321**	.251**	.289**	1	-	-	-	-
EM-External	0.105	.332**	.308**	.499**	.400**	1	-	-	-
Amotivation	0.081	-0.139	-0.127	-.218**	.265**	-0.078	1	-	-
Facilitating anxiety	.644**	.540**	.523**	.345**	.321**	0.100	.259**	1	-

| Debilitating anxiety | .201[**] | 0.053 | 0.064 | -0.038 | .321[**] | 0.047 | .688[**] | .324[**] | 1 |

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

The data also revealed other information. For example, intrinsic motivation and extrinsic motivation are positively correlated with each other with a ρ value of .500 at a significant level ($p < .001$). A notable result is that facilitating and debilitating anxiety are reported with significant correlation ($\rho = .241, p < .001$), which is in contradiction with the assertion made by the AAT scale designer Alpert and Haber (1960) that facilitating anxiety and debilitating anxiety are contradictory. Since the reliability of AAT is high in both previous studies (Alpert & Haber, 1960) and in this research ($\alpha = .846$), the inconsistency might be caused by other variables or different cultural context.

To sum up, this study confirmed the first hypothesis ("facilitating anxiety is significantly and positively correlated with both intrinsic and extrinsic motivation") and the second one ("debilitating anxiety is significantly and positively correlated with extrinsic motivation and amotivation"), with the last one partially confirmed. One valuable finding of the current study is that facilitating anxiety is highly related with intrinsic and extrinsic motivation, therefore it is possible to use this typically-regarded 'negative emotion' for positive learning outcomes, as proposed by Strack et al. (2017), Strack and Esteves (2015) and Strack et al. (2015). Another finding is that in contrast with the expectation, debilitating anxiety is positively and significantly correlated with facilitating anxiety. The underlying reasons worth further explorations. Besides, debilitating anxiety was proved to be correlated with IM-Experience, which has not been covered in previous studies.

Discussion

The correlation between anxiety and motivation in foreign language learning

The first finding of this research is that there is a significant and positive correlation between anxiety and motivation in foreign language learning. To be specific, intrinsic motivation is significantly correlated with facilitating anxiety, and extrinsic motivation is highly correlated with both types of anxiety. Amotivation is strongly correlated with both types of anxiety, especially with debilitating anxiety. This result is different from the conclusion that anxiety and motivation in language learning settings are negatively correlated (Amiryousefi & Tavakoli, 2011; Jain & Sidhu, 2013; Kirova et al., 2012; Magelinskaitė et al., 2014) or non-correlated (Qin & Wen, 2002).

The second finding is that facilitating anxiety is significantly and positively correlated with three types of motivation. The differentiation of facilitating anxiety from debilitating anxiety explains why students with intense motivation are tested with a high level of anxiety (Liu, 2015) and why the level of anxiety increases with the improvement of motivation level (Child, 2004).

As to debilitating anxiety, it is not correlated with the general intrinsic motivation but is positively connected with IM-Experience. Namely, the motivation for experience will bring harmful anxiety which stops students from active learning, mainly because the nature of language learning "entails risk-taking and is necessarily problematic" (Horwitz et al., 1986, p. 125) threatens learners' sense of self and world view. Meanwhile, it is EM-Introjected that

correlated with debilitating anxiety. Since EM-Introjected involves the internalization of external controls like "I run because I want people to keep thinking I am a good runner", the fear of turning people down or the fear of negative evaluation leads to a negative sense of anxiety.

Furthermore, amotivation, a negative status that might eventually make students stop participating in academic activities (Vallerand et al., 1992), has a very high correlation with debilitating anxiety. This explains why intrinsic and extrinsic motivation is more correlated with the 'beneficial' anxiety but in some empirical studies motivation seems to bring negative effects to anxiety: there is a status called amotivation besides intrinsic/extrinsic motivation, which is largely ignored but is playing an important role in affecting anxiety level.

To be noted, even though Alpert and Haber (1960) asserted that facilitating anxiety and debilitating anxiety would be highly negatively correlated, data in this research indicates a strong correlation between these two variables. If Alpert's AAT scale is still valid in the 21st century, its different cultural context or the involvement of other variables may cause a contradiction in findings. This assumption can more specifically explain why empirical studies in China show different conclusions such as 'anxiety and motivation do not correlate' (Zhang, 2009).

Why is anxiety positively correlated with motivation in foreign language learning?

The survey results confirmed the hypothesis that facilitating anxiety is positively and significantly correlated with intrinsic motivation and extrinsic motivation (p < .001). This result is different from the conclusion that anxiety and motivation in language learning settings are non-correlated (Qin & Wen, 2002) or negatively correlated (Amiryousefi & Tavakoli, 2011; Jain & Sidhu, 2013; Kirova et al., 2012; Magelinskaitė et al., 2014). The result could be unexpected since the term 'anxiety' is widely regarded as a type of negative emotion. The result aligns with the statement of Strack et al. (2017) that "negative emotions have important motivational properties" (p. 114). Even though anxiety as a negative emotion brings an unpleasant experience, it "can also provide energy, focus and determination, helping an individual to work hard toward a future goal" (Strack et al., 2017, p. 122).

Strack et al. (2017) explained why certain groups of people claim that they are more motivated in circumstances that tend to elicit anxiety. Anxiety as a type of negative emotion exists to signal problems or threats, and in learning contexts, it indicates a gap between one's desire and actual progress. Anxiety is also connected with the motivation to avoid unexpected situations, therefore when students are "interpreting their anxiety as facilitative", they could be more willing to input time and effort to reach the expected goals (Strack et al., 2017, p. 113). Eventually, facilitating anxiety triggers persistence and performance, which is correlated with high motivation (Strack et al., 2017).

Wang et al. (2018) summarised that the learning motivation and anxiety are "distinct constructs rather than two opposing ends of a continuum" (p. 2). Similarily, the relationship between anxiety and motivation in foreign language learning contexts is not linear.

The contributing factors of the varied correlation between anxiety and motivation in

foreign language learning contexts

Previous studies presented contradictory results in terms of the relationship or the correlation between anxiety and motivation in foreign language learning, as well as the factors contributing to the varied results.

Both motivation and anxiety in foreign language learning contexts are multi-faceted constructs, so the varied selection of constructs contributes to distinct correlation results. For example, in the study supporting positive correlation of anxiety and motivation, authors concluded that the highly-motivated students are likely to experience exam anxiety, but are less likely to experience learning anxiety (Wang et al., 2018). Kim and Cho (2018) suggested that learning motivation could be categorised into exam motivation and career motivation, and the effect of each type of motivation could be different on learning anxiety. Furthermore, learning anxiety may reflect the "lack of confidence in their abilities" (debilitating anxiety) or "their desire for better achievement" (facilitating anxiety), so the students with high anxiety were observed at "all levels" of motivation, which brings confusion to the relationship between anxiety and motivation (Wang et al., 2018, p. 12). There is a type of obviously-debilitating anxiety named somatic anxiety. Somatic anxiety, also known as somatization, refers to a situation that brings "physical complaints and distress" such as chest pain, headache, dyspepsia, insomnia and dizziness (Gelenberg, 2000, p. 50). In a study by Amiryousefi and Tavakoli (2011), the adopted scale is the Test Anxiety Scale (TAS), which focuses on somatic anxiety such as appetite or stomachache before the examination. With a focus on debilitating-oriented anxiety, Amiryousefi and Tavakoli (2011) naturally concluded that anxiety negatively affects motivation in language learning. In conclusion, a single correlation between the general motivation and the general anxiety "seemed insufficient in capturing these complex mulit-dimensional relations" (Wang et al., 2018, p. 2). Consequently, the corelation study of affective factors including language learning motivation and anxiety requires researchers to address the contextualized differences of these variables. There is also a need of systematic reviews focusing on the relationship of different constructs of motivation and anxiety in language learning contexts.

Without realising the existence of facilitating anxiety, the scales aiming to test debilitating anxiety also bring mixed results in terms of the correlation between foreign language learning motivation and anxiety. For example, the Attitude Motivation Test Battery (ATMB) developed by Gardner and Smyihe (1981) included items testing both anxiety and motivation, in which the anxiety is the debilitating one that hinders motivation. The same with ATMB, the Test Anxiety Scale (TAS) aims to test the severe and debilitating-oriented anxiety such as "I seem to defeat myself" and "During exams, I sometimes wonder if I'll get through college" (Sarason, 1977). The same tendency also exists in School Anxiety Scale (SAS) by Lyneham, Street, Abbott, and Rapee (2008). In SAS, questions are referring considerably high level of debilitating anxiety, such as "this child appears nervous when approached by other children or adults" and "when this child has a problem, (s)he feels shaky" (Lyneham et al., 2008, p. 296).

Since strong anxiety will stop learners from getting input, performance drops accordingly, which results in a decreased level of motivation accordingly. Hence, with the use of debilitating-anxiety-oriented scales, the conclusion tends to be 'motivation and anxiety are

negatively correlated'. However, once having considered the existence of facilitating anxiety, this research shows contradictory results.

MacIntyre and Vincze (2017) proposed that in cognitive psychology, the assessment of language anxiety combines the "various internal physiological signals (e.g., a fast heartbeat)" with an interpretation of the social context, urge to act and other specific conditions (e.g., "giving my first speech", "I want to quit the class" and "the audience looks confused" respectively) (p. 65). In consideration of the existence of facilitating anxiety, future studies could focus on the exploration of valid internal physiological signals for facilitating anxiety, as well as the correspondent social contexts, urge to act and other conditions.

Language proficiency, or language competence, is another factor contributing to the varied results in terms of the correlation between anxiety and motivation in foreign language learning (Alsowat, 2016). Most previous studies used language achievement as the measure of language proficiency or language competence, such as language test results, course grades, self-assessment results and Grade Point Average (GPA) (Teimouri, Goetze, & Plonsky, 2019). Rezaei and Jafari (2014) reported that poor linguistic and writing ability were the primary reasons behind students' writing anxiety, which was furtherly confirmed by the study by Kim and Cho (2018). Kim and Cho (2018) interviewed English learners of different language proficiency levels for their language motivation and anxiety. The interview responses revealed that students' language competence plays an important role in language learning as the students tend to be anxious when they do not understand the learning content. According to Teimouri et al. (2019), "much of the research in this domain (second language anxiety) has examined the relationship between anxiety and L2 (second language) achievement" (p. 363). Without involving language proficiency or language achievement, the investigation on the relationship between language learning motivation and anxiety could be incomplete.

The interactions between facilitating and debilitating anxiety is another factor influencing the results. The finding that 'there is a significant and positive correlation between anxiety and motivation' is not the same as the conclusion made by Qin and Wen (2002). In their empirical study, language anxiety and motivation have no correlation, which is different from mainstream theory. As suggested by Zhou and Ying (2011), Zhao and Xie (2013) and Qin and Wen (2002), this situation might be caused by the interaction of facilitating anxiety and debilitating anxiety. Since motivation contributes to both 'helpful anxiety' and 'harmful anxiety', the two types of anxiety can interact with each other and end with confusing effects.

Conclusion

The previous studies about the correlation of achievement anxiety and academic motivation show mixed results. This study has differentiated facilitating anxiety from general anxiety and has explored the relationship between them with intrinsic motivation, extrinsic motivation, and amotivation within a foreign language learning context. The final results of this study indicated that even though anxiety is widely regarded as a type of negative motivation, it is also significantly and positively correlated with all types of motivation (intrinsic, extrinsic and a- motivation).

One implication of this study reflects on the potential of teaching students to manage their anxiety by interpreting anxiety as facilitative. Strack and Esteves (2015) suggested that students should learn to manage their anxiety since "whether or not anxiety has a negative effect on our well-being or performance may depend on the way we interpret our emotions" (p. 212). Two specific ways to manage anxiety are to "(be) clear about the feelings" and "interpret anxiety as facilitative" (p. 205). Strack et al. (2017) supported this viewpoint by saying that "individuals who are clear about their feelings are more likely to thrive on anxiety" (p. 115). For example, since the IM-Experience is significantly correlated with debilitating anxiety, which is taken as "harmful" anxiety (Jain & Sidhu, 2013), teachers need to pay more attention to bringing positive learning experiences for students when they are immersed in new language learning settings. Take foreign language writing anxiety for example, since the anxiety causes could be "time pressure" and "fear of teacher's negative comments" (Rezaei & Jafari, 2014, p. 1549), teachers could consider the flipped classroom approach (which provides students with access to online learning materials prior to the face-to-face sessions) for more preparation time and the shift from teachers' comments to peer feedback (Luo, O'Steen, & Brown, 2020).

In addition to this study being wholly situated within a foreign language setting in China, it is also limited in its scope in that it did not explore the role that language proficiency or other factors might have on the relationship between language learning motivation and anxiety. For further research, it is suggested to investigate the correlation between facilitating anxiety and debilitating anxiety in different cultural contexts. As suggested by Alico (2016), future investigations can focus on three issues including 1) the causes of facilitating anxiety, 2) the contributory factors of motivation and 3) the connection between the anxiety and motivation for enhanced learning outcomes.

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APPENDIX A. Achievement Anxiety Test (AAT)

Category	Item
Facilitating anxiety	2. When the task is very important, I work most effectively even with high pressure. 6. While I may (or may not) be nervous before taking an exam, once I start, I seem to forget the nervousness. 8. Nervousness while taking a test helps me do better. 9. When I start a test, nothing can distract me. 11. I look forward to taking exams. 14. I enjoy taking a difficult exam more than an easy one. 15. The more important the exam or test, the better I seem to do.
Debilitating anxiety	1. Nervousness while taking a test stops me from doing well. 3. In a course where I have been doing poorly, my fear of a bad grade cuts down my efficiency. 4. When I am poorly prepared for an exam, I get upset and then get a worse score. 5. The more important the examination, the less well I seem to do. 7. During exams, I forget some answers, even though I might remember them as soon as the exam is over. 10. I find that my mind goes blank at the beginning of an exam, and it takes me a few minutes before I can function. 12. I am so tired from worrying about an exam, that I find I almost don't care how well I do by the time I start the test. 13. Time pressure on an exam causes me to do worse. 16. When I don't do well on difficult items at the beginning of an exam, it tends to upset me so that I block on even easy questions later on.

APPENDIX B. Academic Motivation Scale (AMS): Why did you go to school?

Category	Item
IM-Experience	1. Because I enjoy communicating or writing my ideas to others. 6. For the pleasure I experience when I participate in interesting discussions with some teachers. 17. For the satisfaction of doing something I like, for example, an experiment in biology, or prepare a project, etc.
IM-Achievement	7. For the satisfaction I experience as I achieve my goal. 11. For the satisfaction I feel when I perform difficult activities. 18. Because high school allows me to experience personal achievement in my pursuit of excellence in my studies.
IM-Knowledge	2. Because I enjoy learning new things. 12. Because I enjoy it when I increase my knowledge. 19. For my studies allow me to continue to learn many things that interest me.
EM-Identified	3. Because I think education will help me to be better prepared. 8. Because it is possible to allow me to enter the labour market in the field that I like. 13. Because, in our society, it is important to go to school.
EM-Introjected	9. Because I like to have good grades. 14. Because I do not want to fail 20. Because I do not want to disappoint my family.

EM-External	4. Because the diploma helps to find a well-paid job in the future.
	10. For a more prestigious job in the future.
	15. To have a better salary in the future.
Amotivation	5. I do not know. I really feel I'm wasting my time at school.
	16. I cannot understand why I go to school. I don't care.
	21. I do not know. I cannot understand what I do in school.