The Effects of L2 Chinese Learners' Perceived Writing Anxiety on Their L1 Use in Times of Major Exams Crisis

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Abstract

Learning to write fluently and expressively in English is widely proved to be one of the most difficult skills for Chinese EFL learners to master due to their L2 writing processes are impeded by various obstacles, among which L2 writing anxiety of students' emotional crisis and their L1 use are two indispensable factors that should be accounted amid English major exams. Hence, the purpose of this study was to explore the relations among L2 learners' perceived writing anxiety and the use of L1 Chinese learners within their L2 writing performance of English major students. 226 L1-Chinese sophomores of English major students who enrolled in Department of Applied English at a university in China participated. A mixed methodology of (Quantitative+qualitative) approaches was employed to collect data through SLWAI (Second Language Writing Anxiety Inventory), think-aloud protocol and semi-structured interview so as to elicit the dynamic thinking process of L2 Chinese learners' perceived writing anxiety of students' emotional crisis and their L1 use within L2 writing performance among English major students on an English major argumentative writing task. The findings revealed that L2 Chinese learners' perceived writing anxiety was positively correlated with their L1 use amount but negatively correlated with L2 writing performance as an emotional crisis. Nevertheless, in terms of a minor part of the participants whose perceived writing anxiety and L1 use amount were positively correlated with L2 writing performance. Rteasons lie in different sources of their perceived L2 writing anxiety of emotional crisis. Implications are that the study not only investigated the relations among L2 Chinese learners' perceived writing anxiety and their L1 use within L2 wriing performance of English major students, but shed lights on the pedagogical field of L2 writing by proposing some effective measures to improve against their different anxiety sources of major exams crisis.

Key words: L2 writing anxiety, L1 Use, think-aloud protocol, English major, major exams crisis

Ⅰ. Introduction

Second language (L2) learning is a universal but extremely complex activity which is affected by various internal factors of individual's language learning (Li & Lin, 2007). However, the traditional attention has been drawn to the cognitive issues in terms of L2 emotional anxiety of exams crisis (Wen, 2003; Guo & Qin, 2009), giving rise to illiteracy. Along with the development of humanistic psychology and related theories in other disciplines (Brown, 1973; Li & Lin, 2007), researchers in abroad and China have become aware of the vital role of affective variables in individual's L2 exams crisis process. Among the various internal affective factors, L2 anxiety is one of the principal elements impeding effective language learning (Odlin, 2001). According to Anrold (2000), L2 anxiety is an unpleasant emotional crisis state which is characterized by the subjective emotional feelings of tension, worry and apprehension, and by activation or arousal of the automatic nervous system in second language learning or exams. Since 1970s, volumes of anxiety of emotional crisis research has been done to explore the correlation linked with foreign language (FL), second language (L2) anxiety and various aspects of language achievement which were measured by course grade, task performance (Aida, 1994; Onwuegbuzie, Bailey & Daley, 1999), as well as the specific skills of language learning including listening (Elkhafaifi, 2005; Zhou, 2003; Chen, 2004; Shi & Fan, 2013), reading (Sellers, 2000; Shi & Liu, 2006; Qiu & Liao, 2007) and writing achievements (Cheng, Horwitz &

Cope,1986; Cheng, 2004; Guo & Qin, 2010), from most of which the negative influence of anxious crisis verifiably has been proved in L2 learning process or exams. One of which in China indicates that L2 learning is widely acknowledged as English learning, dominantly become further regarded as one of the most important mandatory courses and exams in the Chinese national education system. English learning is consisted of diverse language skills involving listening, speaking, reading and writing, among which writing comes last as the most significant and difficult part in the exams (Tang, 2005). However, English writing ability is not only regarded as a pivotal role for qualified talent in the 21st century (Wen, 2003), but remains as the most frequently evaluated skill of English language learning in the present international education system (Tang, 2005).

Hence, students often feel deficient and apprehensive in writing English compositions exams, racking their brains amid the anxiety searching for what to write and how to write to meet the requirement of the minimum number of words. As a result, it is common to see students with much emotional crisis like anxiety muttering Chinese words first, then writing "Chinglish" sentences, or even writing English composition by means of direct translation, particularly, in view of the fact that when retrieving the appropriate English vocabulary, grammar or syntax in vain. The key reason lies in the sources that learning to write fluently and expressively is a tough skill for L2 learners because they are made to demonstrate a master command of not only the related language knowledge but also a series of writing skills simultaneously (Tang, 2005). Due to their limited L2 writing proficiency, they would naturally or unconsciously turn to their first language (L1) for help from time to time, giving rise to the prevailing phenomenon of L1-Chinese use in L2 writing exams (Cumming, 1990). All these have indicated that a clear understanding of the emotional crisis of L2 writing anxiety and their L1 use within L2 writing exams in the current time would bring insightful pedagogical implications to L2 writing instruction. Previous research of L2 writing anxiety and L1 use within L2 writing exams have been two parallel branches with English as a Foreign Language (EFL) students who do not major in English but in other disciplines as their participants. Although much effort has been done to examine issues of L2 writing anxiety and L1 use within L2 writing, few was exploratory enough to combine these two vital factors together to investigate their interacted effects in L2 writing performance of English major students in their major exams.

Thereby, addressing the effects of L2 writing anxiety and L1 use within L2 writing exams of English major students merits more concern. The present study is to explore L2 learners' perceived writing anxiety of emotional crisis on their L1-Chinese use within L2 writing performance amid an English major exam, following a new dichotomy of combining these two relatively independent but deeply interacted issues together. In detail, the study aims to examine the influences of L2 writing anxiety and L1 use amount on L2 writing performance of college students in their major exam from the product-oriented perspective, and implicitly probe into the possible relations between L2 writing anxiety and L1 use amount within L2 writing performance process. In association with the purposes, the research questions will be as followings:

1) Does L2-English major Chinese learners' perceived writing anxiety that has an emotional crisis negatively correlate with their L2 writing performance in a major exam?
2) Is L2-English major Chinese learners' L2 writing performance influenced by their L1 use amount in a major exam? If the answer is affirmative, what influences have on L2 writing performance?
3) What are the relations between L2-English major Chinese learners' perceived L2 writing anxiety and their L1 use amount in L2 writing process of a major exam?

□. Literature Review

1. Studies from Foreign Language Anxiety to L2 Writing Anxiety among L2 Writers' Emotional Crisis

The past decades have witnessed increasing studies on anxiety as an emotional crisis in foreign language learning around the world, proving that foreign language anxiety is possibly one of the most significant emotional crisis factors that pervasively obstruct the foreign language learning process (Arnold, 2000). Since the birth of Foreign Language Classroom Anxiety Scale (FLCAS) (Horwitz, 1986), research

attention in abroad has been attracted to this issue. Basing on FLCAS, early research dating back to 1980s and 1990s mainly focus on the general foreign language learning anxiety in classroom. The findings have revealed that it not only commonly existed among foreign language learners, but was negatively correlated with the course achievements of language learners in the exams (Aida, 1994; Onwuegbuzie, Bailey & Daley, 1999). Nevertheless, FLCAS has been consistently questioned by some insightful researchers, for it mainly targets at oral anxiety, which is regarded as more important relating to other specific language skills involving listening, reading, and writing (Cheng, Horwitz & Schallert, 1999). The 1990s has seen a shift from the general foreign language anxiety to other specific language skill anxieties including listening anxiety (Elkhafaifi, 2005; Zhou, 2003; Chen, 2004; Shi & Fan, 2013), reading anxiety (Sellers, 2000; Shi & Liu, 2006; Qiu & Liao, 2007), and writing anxiety (Cheng et al, 1999; Cheng, 2004; Guo & Qin, 2010), among which writing anxiety has gained volumes of research attention around the world. Writing anxiety, the specific anxiety that L2 learners experience in writing, is also called "writing apprehension" coined by Daly and Miller (1975a). In 1975, Daly and Miller, through systematic research, developed the first instrument, namely Writing Apprehension Test (WAT), to measure the writing anxiety condition of language learners in classroom or exams. What's more, WAT has been as a milestone in the research field of writing anxiety since it was the first systematic attempt to assess the writing anxiety state of language learners. Gradually, it has been widely used across time on various groups of respondents in the research.

On the other hand, with the intensive and extensive development of writing anxiety research, WAT has still been argued by some researchers because of its underlying deficiencies have been uncovered (Cheng, 2004; Dickson, 1985; McKain, 1991). Richmond and Dickson (1985) argued that WAT was more appropriate to measure L1 learners' writing confidence rather than writing anxiety in L1 learners' emotional crisis. Additionally, with Cheng (2004) emphasizing that WAT was developed for L1 learners, which led to the vital elements or characteristics of L2 writing anxiety being uncovered. In light of it, Cheng (2004) developed a more scientific and systematic instrument to measure L2 learners' writing anxiety more accurately and precisely, that is, Second Language Writing Anxiety Inventory (SLWAI). SLWAI is a 22-item five-point Likert instrument and it is specifically designed to measure for L2 learners, particularly for EFL learners. Compared with the one-dimensional WAT, SLWAI proposes a three-dimensional conception of writing anxiety involving somatic anxiety, cognitive anxiety and avoidance behavior anxiety. SLWAI has not only been testified to have higher internal validity and reliability than WAT, but proved to be a more scientific instrument to measure L2 writers' writing anxiety in classroom or exams (Cheng, 2004; Guo & Fan, 2009; Guo & Qin, 2010). In China, there was also much interest from researchers (Guo & Qin, 2010) who were exploratory to translate SLWAI into a Chinese version and employed it in their research until now.

2. Relation between L2 Writing Anxiety and L2 Writing Performance in L2 Writing Exams

Researchers have revolved the relation between L2 writing anxiety and L2 writing performance achievement by adopting a standardized scale with quantitative or qualitative research methods. Quantitatively, a negative correlation between L2 writing anxiety and writing performance has been constantly proved in terms of writing scores, writing length and the amount of accurate sentences (Daly et al, 1975a). Qualitatively, compositions written by low-anxiety learners tend to be evaluated significantly better in both writing quality and skills than those by high-anxiety ones in the exams (Daly et al, 1975a; Guo & Fan, 2009; Guo & Qin, 2010; Zheng, 2005). Later, another study examining L2 writing anxiety's impacts on L2 writing competence and L2 writing performance was conducted by Daly, Faigley, and Witte (1981). While conducting the survey, 110 undergraduates were firstly divided into two groups which were consisted of high-apprehension group and low-apprehension group according to their writing performance and WAT scores. Then eight standardized measurements of L2 writing competence were tested on the two distinct groups. The former results were once again confirmed, particularly in view of the finding that the low-anxiety group has a better command of L2 usage and L2 writing standard than the high-anxiety group. What's more, it also manifested that L2 essays produced by high-anxiety writers were significantly shorter on the paper exam, more simplified and less fluent than that by low-anxiety counterparts. Daud and Kassim (2005), sought to make a further investigation to clarify the possible cause-effect relation on the aspect of

emotional crisis between L2 writing anxiety and L2 writing performance. Results showed that as for low-proficiency writers, there was a significant positive correlation between writing anxiety and writing competence in terms of L2 usage. However, no significant relation was found between these two elements among high-proficiency writers. In the regard, Daud and Kassim (2005) claimed that poor writing performance would cause L2 learners' high level of writing anxiety in learners' emotional crisis, but not vice-verse, which failed to lend support to the findings of previous research.

Considering that a great body of research on the "anxiety-achievement" correlation of L2 writing has increasingly emerged in China, it has focused on the Asian foreign language learners, particularly English learners in China. Zheng (2005) explored the relation between English writing apprehension and writing scores in a non-English major exam, fluency, complexity of T-unit and writing error rate among 60 undergraduate students. The findings revealed that the subjects experienced a relatively high level of writing anxiety in the process of writing exam. It also manifested that low-anxiety writers gained significantly better writing scores and higher rate of writing fluency than high-anxiety writers, yet, no significant correlation between the complexity of T-unit or writing error rate that was found. Accordingly, Guo and Qin (2010) investigated a large research sample of 453 EFL students in a Chinese university by employing English writing tests and SLWAI which has been proved to be a more reliable and valid measurement designed for EFL learners specifically. This study aimed to figure out the general writing anxiety as an emotional state of Chinese EFL learners among college students and the correlation between writing apprehension and writing performance. They reported that Chinese EFL learners experienced foreign language writing anxiety up to a medium degree of English writing anxiety scale. In addition, there was a significant correlation between writing apprehension and writing performance in the exam, which supported the findings of Zheng (2005). Subsequently, Guo and Fan (2009) conducted an empirical study of Chinese college students of three different levels, including the basic, intermediate, and advanced, conducted by means of SLWAI (Cheng, 2004), revealing that English writing anxiety existed commonly in students of the three different levels and a significant negative correlation between English writing anxiety and performance among basic-level undergraduates.

3. L1 Use within L2 Writing

L1 use is an indispensable factor that should be accounted in any Second Language Acquisition (SLA) research (Tang, 2003), which has long been a controversial topic in applied linguistics, SLA and language teaching for many years (Dai & Wang, 2002). It was originated from language transfer (Wen & Guo, 1998) and L1 use is acknowledged as a phenomenon that could be hardly avoided in L2 writing process (Wang, 2002; Wen & Guo, 1998). Whereas, considered as a significant obstacle in L2 writing development, it would interfere negatively with L2 writing performance (Cumming, 1990; Grabe & Kaplan, 1996; Wen & Guo, 1998). Recently, the main concern is about the existence of L1 use within L2 writing. And much research effort has been invested in revolving this key issue, revealing that L1 use is widely exist in the composing processes of L2 learners at different L2 proficiency levels (Bosher, 1998; Cumming, 1990; Raimes, 1985). Raimes (1985) investigated the L2 writing habits and writing experiences of 8 primary-level EFL learners by means of questionnaire, reporting that seven of them turned to their mother tongue constantly in their L2 writing composing process. However, Raimes' research instrument of questionnaire was strongly criticized because it was too subjective to uncover the real relation of L1 use in L2 learners' dynamic composing process (Cumming, 1989; Uzawa & Cumming, 1989). Therefore, a verbalizing thinking method was adopted by Cumming (1989) to explore the whole L2 composing process of twenty-three intermediate EFL learners, reflecting obvious transfers of L1 use to L2 writing performance among all the participants. Uzawa and Cumming (1989) conducted a similar study among American L2 learners. Both the results of questionnaire and think-aloud data from their subjects also revealed an extensive use of L1 to "search for", "generate and organize" ideas during the L2 writing process.

The next concern focusing on the amount of L1 use in L2 writing has come into more thriving. Kobayashi and Rinnert (1992) investigated the amount of L1 use in English composing process by choosing 48 undergraduate students in Japan as their subjects. And self-estimate data from the research indicated that as to the percentage of L1 use amount in every participant's English writing process, eight of them amounted

to over 75%, twenty-three ranged from 50% to 75%, thirteen were between 25% and 50%, while merely four of them were less than 25%. In contrast, some researchers presented that self-estimation was too subjective to measure the L1 use of L2 writers (Wang & Wen, 2002a). Guo and Fan (2009) adopted a think-aloud protocol to record their subjects' English writing process of a picture essay. Basing on the collected data, a statistical analysis was carried out with findings revealing that 92% of the participants utilized L1 to facilitate their L2 writing cognition and processing stages. What's more, in the content-organizing stage of L2 writers' English writing process, as much as 60% of the total information was generated from L1 use.

The last concern deals with the effects of L1 use on L2 writing performance. Volumes of research have investigated the impacts of L1 use on L2 writing performance or L2 writing products. However, the findings ended up with great differences and controversies. L1 use was found to exert a positive influence on L2 learners' writing process and writing performance in some research (Friedlander, 1991；Kobayashi & Rinnert, 1992；Lay, 1982). Lay (1988) reported a detailed analysis of her subjects' English writing process and their composition products, manifesting that the participants with more L1 use performed significantly better than those with less L1 use in terms of their L2 writing content, structure and details. However, L1 use was also found to have a negative influence on L2 writing performance and L2 writing products by other language experts (Wen & Guo, 1998; Wang & Wen, 2002), which was not in accordance with the aforementioned findings. They investigated the interrelation between L1 use and L2 writing performance with the application of think-aloud method, reporting that in the process of English picture-writing task, students with higher writing scores used far less L1 than those with lower scores. It triggers the ambiguity in the previous studies (Wen & Guo, 1998; Wang & Wen, 2002).

4. Relation between L2 Writing Anxiety and L1 Use

L2 writing anxiety and L1 use have been viewed as two indispensable factors interfering with Chinese EFL learners' L2 writing process for the last decade (Zhou & Tang, 2010). What's more, the interactions between these two elements have received an increasing amount of research attention in current years (Macintyre & Gardner, 1989; Zhou & Tang, 2010). The complex issue of L2 writing anxiety and their L1 use in L2 writing process was presented and clarified in the Model of Anxiety Development and Maintenance (MADM) that was proposed by Macintyre and Gardner (1989). This model proposes that at the beginning stage of L2 writing process, writing anxiety hasn't formed, hardly functions as a hinder in L2 writing processes. Because in this period of emotional crisis, it is L2 writers' learning motivation and language cognition that make them feel apprehensive in L2 writing process. However, it does take shape when the deficient writing experiences frequently happened, giving rise to negative attitudes towards L2 writing. Along with the same situation continues, L2 writing anxiety will be strengthened, resulting in cognitive interference which would in turn become a vital hinder in the development of L2 writers' writing proficiency. According to the issue in MADM (Macintyre & Gardner, 1989), L2 writing anxiety would result in an increasing amount of L1 use in L2 writing process.

Given that, the study of Zhou and Tang (2010) was conducted among Chinese EFL students who do not major in English but in other disciplines, which supported the point of view of Macintyre and Gardner (1989). In other words, the real situation of English major students on this issue has not been covered. Accordingly, the present study aims to explore the effects of L2 Chinese learners' perceived writing anxiety and their L1 use in L2 writing performance among English major students by adopting a multi-method approach involving qualitative instruments of think-aloud protocol and semi-structured interview, the results of which benefit in English writing instruction in L2-English classroom.

□. Methods

1. Participants

226 sophomores of English major students were selected from department of applied English of a Chinese University in Oct, 2022. In this study, the Chinese translated version of SLWAI used by Guo and

Qin (2010) was provided to all the students so that significant points in this questionnaire could be fully grasped. Furthermore, some misunderstandings or extra anxiety evoked by the unfamiliar English words could be avoided. At the beginning of the study, 226 pieces of SLWAI questionnaire were distributed to the participants in class by our English teachers in the university. The participants were told to complete the questionnaires within 20 minutes. After collecting all the questionnaires, the scoring procedure was conducted by the researcher. The SLWAI scores were calculated by means of a formula which was proposed by Cheng (2004). Specifically, according to Cheng (2004), this formula: Writing Apprehension Score = Positive Score + Negative Score, would produce a single score representing a respondent's L2 writing anxiety level. The score ranges from 22 to 110 points, among which high score is index of high writing anxiety level, while low one is index of low writing anxiety level.

Particularly, among the 226 collected questionnaires of SLWAI, 11 pieces were excluded because 4 students gave up answering their questionnaires due to their personal issues and 7 students missed some items under time pressure in their questionnaires. Hence, the total valid number of SLWAI was 215. After the calculation of the 215 SLWAI scores, ten whose scores were among the top five and the bottom five of the total 215 students were selected as the appropriate participants' groups taking part in the following English argumentative writing test, think-aloud protocol and semi-structured interview. Based on the purpose of the study, the comparative analysis samples in the groups between the top five in high-anxiety group and the bottom five in low-anxiety group that were supposed to demonstrate a clear data in statistical distribution through T-test analysis to testify if there existed significant differences between them. T-test of their SLWAI scores was conducted (see Table 1 and Table 2). Results showed that there indeed was a significant difference of L2 writing anxiety level between these two groups (p<.05) (see Table 2). The ten appropriate participants were therefore selected, with the top five as the high-anxiety group and the bottom five as the low-anxiety group.

Table 1. *SLWAI Scores of the High-anxiety Group and the Low-anxiety Group*

Group	N	Min	Max	M	SD
High Anxiety	5	88	97	92.80	3.83
Low Anxiety	5	36	52	47.20	6.68

(Notes: Min: Minimum; Max: Maximum; M: Mean; SD: Standard Deviation)

Table 2. *T-test of SLWAI Scores of High-anxiety Group and Low-anxiety Group*

Levene' s Test for EOV			T-test for Equality of Means					95% CIOD	
	F	Sig.	t	Df	Sig.(2-tailed)	MD	SED	Lower	Upper
SLWAI(EVA)	1.07	.329	13.23	8	.01	45.60	3.45	37.65	53.54
SLWAI(EVNA)			13.23	6.37	.01	45.60	3.45	37.28	53.91

(Notes: EOV: Equality of Variances; EVA: Equal Variances Assumed; EVNA: Equal Variances Not Assumed; MD: Mean Difference; SED: Std. Error Difference; CIOD: Confidence Interval of the Difference)

2. Research Measurement
2.1 Second Language Writing Anxiety Inventory (SLWAI)

The questionnaire (see Appendix 1) used in this study was composed of two sections: Background Information and Second Language Writing Anxiety Inventory (SLWAI) (Cheng, 2004). Background Information collected basic demographic information concerning the participants (name, class and telephone number). On the other hand, SLWAI (Cheng, 2004) was employed with the intention that participants' anxiety conditions in L2 writing can be measured accurately. Specifically, SLWAI adopted in this study is grounded in both L2 learners' self-reports of writing anxiety experiences and the multidimensional conceptualization of anxiety. It aims to measure L2 learners' writing apprehension states in L2 writing. According to Cheng (2004), SLWAI falls into three sub-scales involving Somatic Anxiety, Avoidance Behavior and Cognitive Anxiety. And it shows great internal consistency with a reported Cronbach alpha coefficient of 0.91. The questionnaire of SLWAI consists of 22 items with 15 statements (item 2, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19, 20) positively worded, and 7 items (item 1, 4, 7, 17, 18, 21, 22) negatively worded, all of which are scored on a five-point Likert scale (l=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree). The total scores of the 22 items range from 22 to 110 points, representing L2 writer's writing anxiety condition. The higher the score is, the more writing anxiety the learner experiences in L2 writing. SLWAI deals with the problem of writing anxiety in the three sub-scales. Somatic Anxiety (item 2, 6, 8, 11, 13, 15, 19) is defined by items relating to the increased uncomfortable physiological arousal including trembling, perspiring or heart pounding when students are confronting with L2 writing task; Avoidance Behavior (item 4, 5, 12, 10, 16, 22, 18) is composed of items indicating subjects' avoidance behavior or negative attitudes towards L2 writing; Cognitive Anxiety (item 1, 3, 7, 9, 17, 14, 20, 21) is a subjective component that concerns with perception of arousal and, particularly, fear of actual or potential negative evaluation of their L2 writings.

2.2 English Major Writing Test

In the present study, an English writing argumentative test lasted for about 30 minutes. An English argumentation task "Should English Majors Study Math?" was adopted. This English argumentative writing task was conducted on the basis of the writing essays in TEM-4 (Test for English Majors) in 2014, that (The test (2014) has been randomly chosen to avoid the participants who have already experienced on it before) (see Appendix 2). During the English writing test, all the ten appropriate participants involving the five high-anxiety English major students group and the five low-anxiety English major students group were required to write an English composition on this topic of about 200 words in 30 minutes.

2.3 Think-aloud Protocol

Through analyzing think-aloud protocol in the empirical studies, it's found that among which the insightful suggestions and guidelines of Uzawa (1996) were significantly helpful. Specifically, some important points were proposed.

First of all, they need guidance instruction before some L2 students who were not good at verbalizing their inner thoughts in the writing process. Second, interviews performed right in the silent process of the writing test that was of great value in fully grasping students' thinking and cognitive strategies that were expressed clearly in the think-aloud protocol. Taking Uzawa's (1996) suggestions into consideration, each of the ten appropriate participants individually was arranged in a quiet office room where distraction and interruption were out of question. Meanwhile, the participants were instructed by guidance of think-aloud protocol as well and then asked to complete the 30-minute English argumentative writing task. While writing, a verbalized thinking process mirroring what was going on in their minds was required as well. During the whole English composing process, all the participants were required to fully express their dynamic writing thoughts in either Chinese or English depending on which language they were thinking in at that particular time by interview offered in the think-aloud writing process. Each participant's verbalized thinking process of the English writing task was audio-recorded. Besides, taking notes of the key points in the participants' think-aloud process of interviewing was also necessary. Later on, transcribing all the think-aloud recordings into written materials by the researcher as all the collected data can be well-prepared for the further analysis in the study.

2.4 Semi-structured Interview

As soon as the English writing test was being in the process, the think-aloud recording was played on the

spot at once to make the each test-taker have an introspective review of his or her English composing process now. The semi-structured interviews within it were conducted as well concerning each of the appropriate participants' writing attitudes, composing habits and writing anxiety in English writing. The aim was to have a better understanding of the appropriate participants' general English writing anxiety condition. The all participants' verbalizing contents and L1 use amount on written in the process of English writing test were transcribed into both Chinese and English as data collection in the study. Interview questions employed were partially based on the contents of the SLWAI (Cheng, 2004) and partially adapted from Zhou and Tang's (2010) retrospective interview questions of L1 use on L2 writing. The interview questions are as follows;

1. *I noticed that you paused here, what did you think at that moment?*
2. *Here, you were trying to use the word 'mandatory', but you forgot how to spell it, right?*
3. *While writing this sentence, I noticed that you haven't finished it, what did you want to express at that moment?*
4. *I noticed that you write many words in Chinese on the test paper. Do you usually write the English composition in a translated method? If so, do you think it is helpful, why?*
5. *Why did you pause from time to time while you were writing this English composition?*
6. *Did you feel anxious during this writing task? If so, what did you worry about?*
7. *What were the major difficulties you have came across in this writing task?*
8. *When composing in English, do you prefer to think in Chinese or in English? Why?*
9. *Do you usually like practicing English writing in your spare time? Why or why not?*
10. *Do you often feel worry that your English composition would receive negative feedback you're your teachers or peers? Why or why not?*

3. Data Collection

The present study lasted for nearly two months, starting from October and ending at the end of December. The procedures of data collection include the collecting the questionnaires of SLWAI (Cheng, 2004), the English writing test, think-aloud protocol and semi-structured interview.

All the ten appropriate participants' essays were evaluated independently by two experienced TEM-4 instructors who are working at Higher Education English Test Team. According to the essays rating criteria in TEM-4 (see Appendix 3), the essays were scored in terms of the four major components of writing involving content, organization, grammar and language use. The final composition score ranges from two to fifteen points, representing four different levels of English writing quality, namely, A (14-15 points), B (11-13 points), C (6-10 points), D (2-5 points). Ratings were consisted of judgments on ten analytic sub-components making up the four major constructs including content: thesis, development of ideas, overall clarity; organization: introduction, logical cohesion and conclusion; grammar: accuracy of syntax, language: vocabulary and form variety. For the criteria of scoring, if one essay was rated greatly different, it would be discussed and re-evaluated until an agreement was achieved. All the scores were computed and ranked according to the means.

The think-aloud data were analyzed qualitatively, aiming to explore the possible relation between L2 English major students' perceived writing anxiety and their L1 use in the L2 writing process. The recordings of the appropriate participants' think-aloud protocol were transcribed rigorously with their silence, pause and repeating behavior in the English writing test being marked faithfully. The transcripts of recording were then summarized to calculate the total amount of Chinese words and English words used in the think-aloud protocol. In other words, each participant's L1-Chinese use amount, namely, they employed in the verbalizing and written processes of completing the English writing test, was identified and computerized. In detail, it was calculated in the way that the number of Chinese and English words was divided by the total number of words involving each subject written on the test paper and verbalized in the think-aloud protocol. The Chinese words were calculated with the criteria of the sixth edition of Modern Chinese Dictionary (6th edition of MCD) and the English words were calculated in accordance with the criteria of the seventh edition of Oxford English-Chinese Dictionary (7th edition of OECD).

IV. Results and Findings

1. Analytical Results among SLWAI, L2 Writing Performance and L1 Use Amount

As shown in Figure 1, the quantitative results indicated the trend that the more anxious English major students were, the more L1 use they employed in L2 writing process as well as the lower scores they got for their L2 writing, which sustained the previous findings. Subsequently, from Table 3 to Table 4 by providing the result of L2 writing performance scores and L2 writing length of seven students (S1 to S7), involving five low-anxiety writers (S3, S4, S5, S6, and S7, named as Group B) and two high-anxiety writers (S1 and S2, named as Group A). However, in Figure 1, there were three students (S8, S9 and S10) who experienced high L2 writing anxiety, their L1 use amounts were also high, yet they got high scores for their L2 writing products. This finding was quite different from the results of previous research conducted on non-English major students (Zhou & Tang, 2010). In terms of this situation, the particularity of the three high-anxiety writers (S8, S9 and S10, named as Group C) was discussed and clarified later.

Figure 1. *SLWAI, L1Use Amount and L2 Writing Performance Scores*
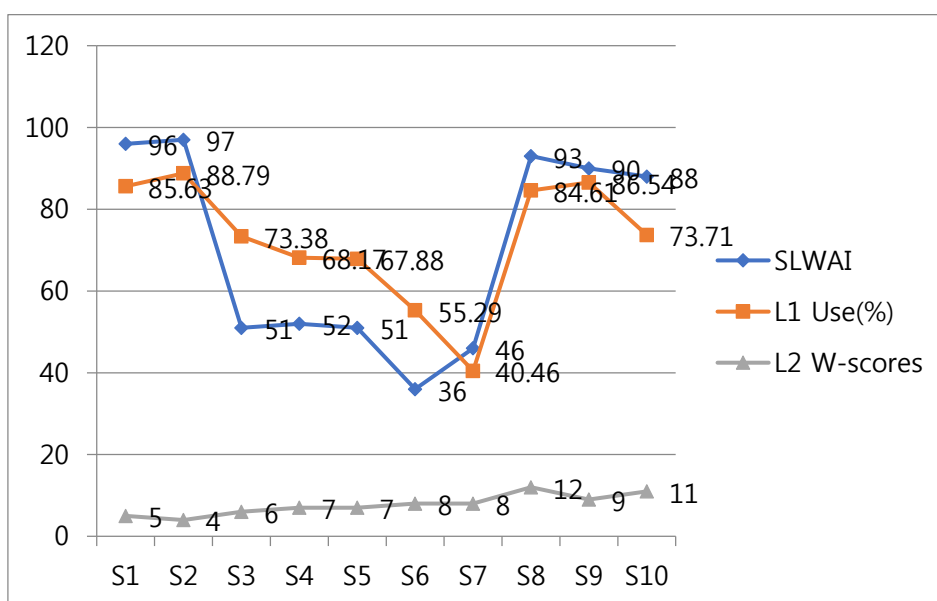
1) Analytical Results of L2 Writing Anxiety and L2 Writing Performance

One obvious finding was the significant negative correlation between L2 Chinese learners' perceived writing anxiety and their L2 writing performance. As predicted, the more anxious L2 writers were, the shorter their essays were as well as the lower writing scores they got, which was in complete support of the previous findings. From Table 3, it could be easily seen that the shortest essays in Group A had merely 94 words, while the low-anxiety Group B wrote 152 words at least. The longest article in Group A contained only 102 words, however, as to the low-anxiety Group B, it reached up to 219 words, nearly two times as much as that of Group A. On average, the high-anxiety L2 writers (Group A) wrote 98 words, while members in the low-anxiety Group B wrote about 194 words, with a gap of 96 words. Therefore, the result could be achieved that high-anxiety writers tend to write far less words than the low-anxiety writers (r= -.649, p<.05), (see Table 5).

Table 3. *Comparison of the Average L2 Writing Length between Group A and Group B*

Group	N	Min	Max	M	SD
High Anxiety	2	94	102	98	5.66

(Group A)					
Low Anxiety (Group B)	5	152	219	194.20	20.17

(Notes: Min: Minimum; Max: Maximum; M: Mean; SD: Standard Deviation)

Table 4. *Comparison of the Average L2 Writing Performance Scores between Group A and Group B*

Group	N	Min	Max	M	SD
High Anxiety (Group A)	2	4	5	4.50	0.71
Low Anxiety (Group B)	5	6	8	7.20	0.84

(Notes: Min: Minimum; Max: Maximum; M: Mean; SD: Standard Deviation)

Table 5. *Correlation among SLWAI Scores, L2 Writing Performance Scores and L2 Writing Length*

Spearman's rho		L2 W-Scores	L2 W-Length
SLWAI (N=7)	Correlation Coefficient	-.908[**]	-.649
	Sig.(2-tailed)	.004	.015

(Notes: L2 W-scores: L2 Writing Scores; SLWAI: L2 Writing Anxiety Inventory Scores; L2 W-Length: L2 Writing Length)

As shown in Table 4, the highest writing performance mark of Group A was merely 5 points, which was even 1 point lower than the lowest writing score of the low-anxiety Group B, as much as 3 points lower than the highest writing score of the lowly apprehensive writers. What's more, the lowest writing performance score of Group A was only 4 points, which was still 2 points lower than that of the low-anxiety Group B. Besides, the mean score for the highly anxious L2 writers in Group A was merely 4.5 points, donating a failure while the low-anxiety group got a pass in this English writing test with the average score of 7.2 points. According to table 4.3, the results of this study demonstrated that L2 Chinese learners' perceived writing anxiety correlated negatively with the L2 writing performance of English major students, which was a further confirmation of the previous findings (r= -.908, p<.05)(see Table 5).

2) Analytical Results of L1 Use and L2 Writing Performance

Another significant finding to emerge was that L1 use amount correlated negatively with L2 writing performance. As predicted, the more Chinese thinking L2 writers applied in their composing processes, the shorter their writing products were and the lower marks they got for their essays, which lent support to the findings of Zhou and Tang (2010). In the present study, each writer's L1-Chinese use amount, namely, they employed in the process of completing the English writing test, was identified and computerized. In detail, it was calculated in the way that the number of Chinese words was divided by the total number of words involving each subject written on the test paper and verbalized in the think-aloud protocol. As was shown in Table 6 and Table 7, in terms of the minimum percentage of L1 use in L2 writing process, the L1 use amount of Group A amounted to 85.63% at least, while the low-anxiety Group B accounted for only 40.46%. As to the maximum percentage of L1 use, L2 writers in Group A employed as much as 88.79% of L1 thinking, still much higher than that of the low-anxiety Group B, which was 73.38%. However, the the high-

anxiety Group A with high L1 use amount wrote merely 102 words at most, while the low-anxiety Group B with low L1 use amount wrote as much as 219 words in their composition, which indicated a significant gap as wide as 117 words. In addition, for the high-anxiety Group A whose L1 use amount was very high, their shortest composition contained only 94 words, still 58 words lesser than that of the low-anxiety Group B whose L1 use amount was relatively low. On average, the percentage of L1 use in the whole L2 writing process was 86.35% for Group A, in contrast to 61.03% for the low-anxiety Group B. However, the average writing length of Group A was only 98 words, much less than that of low-anxiety Group B, which were about 194 words. Hence, it could be clearly concluded that L2 writers with high L1 use amount in L2 composing process tend to write far less words than the low L1 use amount writers'.

Table 6. *Comparison of the Percentage of L1 Use in L2 Writing Process between Group A and Group B*

Group	N	Min	Max	M	SD
High Anxiety (Group A)	2	85.63%	87.07%	86.35%	8.23
Low Anxiety (Group B)	5	40.46%	73.38%	61.04%	13.29

(Notes: Min: Minimum; Max: Maximum; M: Mean; SD: Standard Deviation)

Table 7. *Comparison of the Average L2 Writing Length between Group A and Group B*

Group	N	Min	Max	M	SD
High Anxiety (Group A)	2	94	102	98	5.66
Low Anxiety (Group B)	5	152	219	194.20	20.17

(Notes: Min: Minimum; Max: Maximum; M: Mean; SD: Standard Deviation)

It could be seen from Table 8 as well, among the L2 writers in Group A whose L1 use amount was high; the highest essay mark was only 5, lower than the highest score of the low-anxiety Group B whose L1 use amount was low. Similarly, the lowest writing score of Group A with high L1 use amount was merely 4, still much lower than that of the low-anxiety Group B. In addition, in terms of the average writing score, the high L1 use amount writers (Group A) got an extremely low average score of 4.5 points, indicating a failure of this essay test. While the low L1 use amount writers in the low-anxiety Group B, successfully passed this writing test with the average score of 7.2 points. Thus, the statistical results of the current study proved that L1 use amount in L2 composing process was negatively correlated with L2 writers' writing performance. (r= -.951, p<.05), (see Table 9)

Table 8. *Comparison of the Average L2 Writing Performance Scores between Group A and Group B*

Group	N	Min	Max	M	SD
High Anxiety (Group A)	2	4	5	4.50	0.71
Low Anxiety (Group B)	5	6	8	7.20	0.84

(Notes: Min: Minimum; Max: Maximum; M: Mean; SD: Standard Deviation)

Table 9. *Correlation among L1 Use Amount, L2 Writing Performance Scores and L2 Writing Length*

Kendall's tau-b		L2 W-Scores	L2 W-Length
L1 Use (N=7)	Correlation Coefficient	-.951**	-.624
	Sig.(2-tailed)	.003	.049

(Notes: L1 Use: L1 Use Amount; L2 W-Scores: L2 Writing Scores; L2 W-Length: L2 Writing Length)

3)　Analytical Results of L2 Writing Anxiety and L1 Use

As indicated in Table 10, the highly apprehensive participants (Group A) utilized at least 715 Chinese words in the composing process, while the lowly ones employed only 248 words. Besides, the average number of L1 use in L2 composing process was 820 words for Group A and 424 words for the low-anxiety Group B. L1 use amount, that is, the percentage of L1 use employed in L2 writing process was also calculated to further reveal the degree to which L1 was utilized in L2 writing process.

Table 10. *Comparison of L1 Use Amount (Number of Chinese Words Used) in L2 Writing Process between Group A and Group B*

Group	N	Min	Max	M	SD
High Anxiety (Group A)	2	715	926	820.50	149.19
Low Anxiety (Group B)	5	248	598	463.60	134.16

(Notes: Min: Minimum; Max: Maximum; M: Mean; SD: Standard Deviation)

According to Table 11, it could be easily seen that among the high-anxiety writers (Group A), the minimum percentage of L1 use employed in the whole L2 writing process amounted to 85.63%, in contrast to 40.46% among the low-anxiety group. As to the maximum percentage of L1 use, it accounted for 87.07% for Group A, in comparison with 73.38% for the low-anxiety Group C. On average, the percentage of L1 use amount in L2 composing process was 86.35% for the high-anxiety writers (Group A) and 61.04% for the low-anxiety writers respectively (see Figure 2). Therefore, it was easy to conclude that high-anxiety writers would employ more L1 in their L2 writing process than the low-anxiety writers did (r= .901, p<.05), (see Table 12).

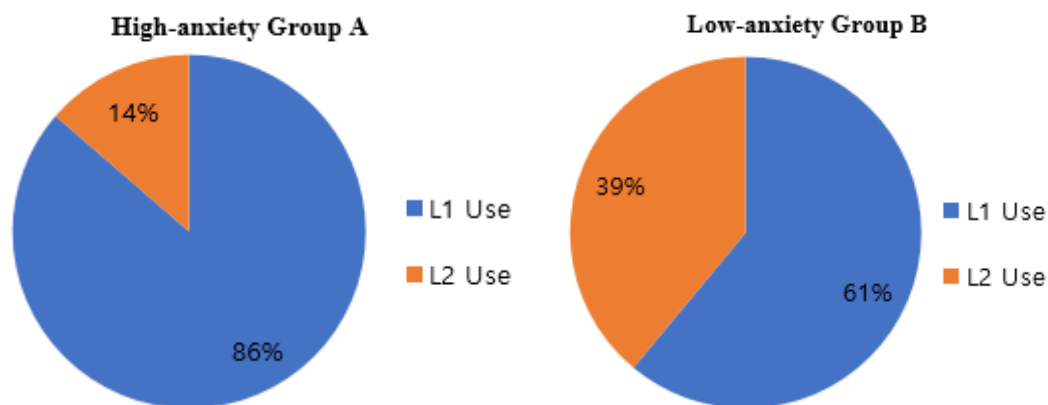Figure 2. *The Percentage of L1 Use and L2 Use in L2 Writing Performance Scores*

Table 11. *Comparison of the Percentage of L1 Use (%) in L2 Writing Process between Group A and Group B*

Group	N	Min	Max	M	SD
High Anxiety (Group A)	2	85.63%	87.07%	86.35%	8.23
Low Anxiety (Group B)	5	40.46%	73.38%	61.04%	13.29

(Notes: Min: Minimum; Max: Maximum; M: Mean; SD: Standard Deviation)

Table 12. *Correlation of SLWAI Scores and L1 Use Amount*

Spearman's rho		L1 Use
SLWAI (N=7)	Correlation Coefficient	.901[**]
	Sig.(2-tailed)	.006

(Notes: SLWAI: Second Language Writing Anxiety Inventory Score; L1 Use: L1 Use Amount)

2. Studies on The Minor Part of High-anxiety English Major Chinese Learners Group C (S8, S9, and S10)

The above results demonstrated in Figure 1 that for a minor part of high-anxiety English major participants in the Group C, the more L1 use they applied in their L2 writing process, the longer their essays were as well as the higher scores they got for their L2 writing. This finding was different from the results of the previous research conducted on non-English major students (Zhou & Tang, 2010). The underlying reasons could be found from the following aspects. Zhou and Tang (2010) selected students who do not major in English but in other disciplines as their research participants, while the present study focused on English major students. On the one hand, compared with non-English major students, the appropriate participants of this study have more serious attitudes upon L2-English writing because English writing is one of their mandatory courses that play a significant role in their major. Hence, writing anxiety would also be caused by their strong desire and internal learning motivation coming from their high expectation and rigorous attitudes towards English writing. Accordingly, to some extent, it may function in a positive way to benefit English major writers' L2 writing performance, which could be evidenced by SLWAI

questionnaire and semi-structured interviews of the think-aloud protocol reporting that the three high-anxiety English major participants (Group C) were not only "be fond of English writing", "practice English writing as much as possible in their daily life" but "have a strong motivation to achieve L2 writing success".

Another aspect of it, the participants in Zhou and Tang's (2010) study were freshmen of non-English major students with CET-4 (College English Test) writing test, while participants in the present study were sophomores of English major students within the professional English writing proficiency test of TEM-4(Test for English Majors). Given that, L1 use might potentially benefit L2 writers' writing performance for some English major students.

3.   Analytical Results of Interview

For the L2 writing processing stage, L2 writing anxiety would further impair the effective process, especially on the English argumentation of the study. Due to the overloaded L2 writing apprehension, high-anxiety participants performed less efficiently in processing and organizing information. Accordingly, it was reasonable to find that in recordings of the think-aloud protocol. The high-anxiety participants in the Group A reported "my brain was totally a mess"; "I just want to meet the requirement of the minimum number of words". In addition, as shown in the interview, when the researcher asked "Did you feel anxious in the writing process?" The participants in the low-anxiety Group B and in the high-anxiety Group C expressed "anxiety was out of question", "I can come up with some ideas but they were not convincing enough", however, the two high-anxiety participants (Group A) answered "I felt anxious and I didn't know what to write"; "organizing ideas in English was too hard for me". Good performance at the output stage can be even harder for anxious L2 writers because they had to retrieve not only the writing material processed in the previous stages but the related writing knowledge accumulated in their memory. In the think-aloud protocol, the low-anxiety participants thought and wrote more smoothly. Yet, the two high-anxiety subjects in Group A paused from time to time. Therefore, in the interview, the two high-anxiety subjects were asked "Why did you pause from time to time while you were writing this essay?", they expressed that "sometimes the word was on the tip, but I just can't remember how to spell it"; "I frequently forgot the sentences that I have learned", "I tried my best to search for some essays material, but all in vain." All these could be well explained by the negative roles that anxiety plays in the retrieval and output process.

Given that, the negative L1 use and L2 writing performance correlation could be well explained by L2 participants' negative writing attitudes and essays habits. When they were asked in the interview "Do you usually like practicing English writing in your spare time? Why or why not? ", as to the five low-anxiety participants in Group B and the two high-anxiety ones in Group C, two students answered "not so bad" and expressed "my mother usually tells me to read and write in English", and the other six answered "I like it" and explained "because I like my English teacher", "it's not so hard, I usually read some English magazines" or "I want to speak and write as good as my stars in English movies". However, the two high-anxiety participants (Group A) expressed "I dislike English writing"; "I avoid English writing whenever possible" Hence, it could be understandable why high-anxiety ones (Group A) reported "I turn to L1 for help from time to time"; "I am willing to translate from word to word" when they were inquired about their usual ways of completing the English writing tasks. There would be no question to understand why high-anxiety writers (Group A) ended up with poor writing performance with short writing length, simplified contents and structure, while the low-anxiety participants performed much better than the high-anxiety ones did.

Macintyre and Garder (1989) suggested that at the beginning stage of L2 writing, L2 writing anxiety hasn't formed and doesn't function as a hinder in L2 writing process. Because in this period, it's L2 writers' passive learning motivation and poor communication proficiency that make them feel apprehensive. However, L2 writing anxiety will take shape gradually when the deficient experiences of L2 writers frequently happened, resulting in writers' negative attitudes towards L2 writing. Therefore, when confronting with L2 writing task, especially the timed L2 writing tasks, L2 writers would turn to the mastered language L1 and writing knowledge that have already been well-accumulated in their mother language L1 for help. As asked "when composing in English, do you prefer to think in Chinese (L1) or in

English (L2)?" The two high-anxiety subjects (Group A) answered "Because I was too anxious to think in L2" and expressed "L1 is more helpful", "thinking in L2 is too difficult and time-consuming". From the point of view, it was understandable to find that high-anxiety ones (Group A) were searching for L1 from time to time during the whole think-aloud protocol that they were likely to use simple English words and sentences to translate their ideas in the most "Chinglish" way. However, in the low-anxiety subjects (Group B) and the high-anxiety Group C expressed that "I prefer to think in L2", "I am used to think in L2" and thought that "L2 thinking is more helpful in English writing". Therefore, it could be understandable to find that the five low-anxiety participants Group B and the three high-anxiety ones in Group C employed less L1 use in their writing processes than the high-anxiety writers did.

V. Conclusions

1. Major Findings

According to the research questions, in terms of RQ 1, findings demonstrated a negative correlation between L2-English major Chinese learners' perceived writing anxiety and their L2 writing performance in TEM-4 exam which confirmed the previous findings. As to RQ 2, findings revealed that L1 use amount existed negative influence on L2 writing performance of L2-English major Chinese students. That is, the more L1 use the students employed in their L2 writing processes, the shorter their essays were as well as the lower scores they got for their L2 writing products in TEM-4 exam. For RQ 3, a positive correlation between L2-English major Chinese learners' perceived writing anxiety and their L1 use amount in L2 writing process was revealed. Besides, another significant finding mirroring the particularity of a minor part of L2-English major Chinese students in this study was also revealed, demonstrating that as to the minor part of the students in Group C (S8, S9, and S10), L2 writing anxiety and their L1 use amount were positively correlated within L2 writing performance in TEM-4 exam. This finding was quite different from the results of the previous research on non-English major students (Zhou & Tang, 2010), based on which L2 writing anxiety and L1 use amount were negatively correlated with L2 writing performance.

The present study constituted a step forward in exploring the possible relations among L2 Chinese learners' perceived writing anxiety and their L1 use amount within L2 writing process of English major students by adopting a multi-method approach involving SLWAI, think-aloud protocol as well as interviews, the current research has shed great lights on the dynamic nature of L2 writing anxiety and their L1 use in English major students' L2 writing process, which opened up some interesting avenues for future L2 writing study.

Until now, it has been clear that the positive or negative effects of L2 writing anxiety and L1 use in L2 writing performance would depend on the specific causing factors of students' writing apprehension, the writing attitudes as well as the writing habits. Thus, what EFL teachers should do first is to identify the specific writing anxiety sources of the students as effective teaching measures that are supposed to be taken to improve students' L2 writing performance. L2 writing anxiety should be reduced or eliminated through the joint efforts of teachers and students by such providing a relaxed learning or writing environment; developing students' good daily habits of L2 writing; organizing various activities of L2 writing (ex. L2 writing outline design competition); promoting a positive attitudes or feedback in and out class towards students' L2 writing performance.

2. Limitations and Suggestions for the Future Study

As insightful as the present study is, there is still much room for improvement. Further research with a large sample size and a more systematic think-aloud protocol training course are desirable before it begins. In the present study, the analysis of the characteristics of the participants who are English major students on the anxiety-performance correlation have not been revealed yet because it is implicitly related to the result on this issue differently. For the future study, more enlightening research involving the comparison between English major students and non-English major students' characteristics on this issue is greatly appreciated, as are the underlying sources, that lead to their different L2 writing performances that can be gleaned.

Acknowledgement

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