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Interrelations among Writing Anxiety, Writing Strategy Use, and Writing Performance in Korean English Learners

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The present study examines the interrelationships among writing anxiety, writing strategy use, and writing performance in Korean English learners. Eighty five Korean high school students responded to Petric and Czarl's (2003) Writing Strategies Questionnaire and Cheng's (2004) Second Language Writing Anxiety Inventory. They also wrote an English argumentative essay. Results indicate that the writing anxiety was negatively associated with writing strategy use and writing performance while writing strategy use was positively associated with writing performance. Yet a series of regression analyses found the positive effects on writing performance only from prewriting and revising strategy uses but not from while-writing strategy use, suggesting Korean English learners' greatest reliance on while-writing strategies in fact has no effect on enhancing their English writing performance. Based on their writing anxiety, writing strategy use, and writing performance scores, the Korean students were grouped into two: (a) high writing anxiety, low writing strategy use, and low writing performance and (b) low writing anxiety, high writing strategy use, and high writing performance. Overall, the study results suggest that the writing strategy use could exert a greater positive effect, beyond the negative effect of writing anxiety, on English writing performance. Discussions and suggestions for further research are provided.

[English writing/writing anxiety/writing strategy use/Korean high school students]

I. INTRODUCTION

L2 writing anxiety has been suggested as a distinct construct from L1 writing anxiety

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and other related constructs such as a person's general trait anxiety or foreign language anxiety (Cheng, 1999, 2002; Kim, 2005; Silva, 1993). Only a handful of studies have examined the effects of L2 writing anxiety on L2 writing performance, and those studies generally suggest a negative association of these two variables (Cheng, 1999; Hadaway, 1987; Khaldieh, 2000; Masny & Foxall, 1992; Wu, 1992). Khaldieh (2000) suggested that unskilled L2 writers tend to have a high level of writing anxiety. Silva (1993) noted that L2 writers' incapability to elaborate ideas and develop arguments, and their limited vocabulary range are the causes of writing anxiety.

Considering that L2 writing strategy use has been suggested to be positively related with L2 writing performance (Chen, 2011; Chien, 2012; Khaldieh, 2000), it is logically drawn that the interplays among writing anxiety, writing strategy use, and writing performance would exert a significant influence on writing outcome effectiveness. However, few studies have addressed these three variables simultaneously. Although there exist a few studies which have examined the interrelation between L2 writing anxiety and L2 writing strategy use, they provide mixed results. For instance, AI Sawalha and Chow (2012) reported that high apprehensive L2 writers used writing strategies more frequently than low apprehensive L2 writers. In contrast, some studies, such as Mohseniasl (2014), and Schweiker-Marra and Marra (2000), showed that the training of writing strategies helped L2 writers lower their writing anxiety.

Then, how would L2 writing anxiety and L2 writing strategy use interplay with each other, and how would the two variables' interplay influence L2 writing performance? One possible hypothesis is that writing anxiety may lessen both writing strategy use and writing performance. Even if this is the case, it is still possible that writing strategy use may moderate the negative impact of writing anxiety on writing performance; subsequently, highly apprehensive L2 writers could produce quality of writing if they employ writing strategies adequately.

To our knowledge, no study has substantially investigated Korean English learners' writing anxiety and writing strategy use, and how the two variables conjointly influence their English writing performance. The understanding of the interrelationships among these three variables could provide useful information about how to enhance Korean English learners' writing competence in terms of effectively addressing writing anxiety and writing strategy use. As suggested by the high school English textbooks as well as the Achievement Standard in high school English based on the 7th National Curriculum, Korean high school students are expected to produce multiple-sentence writing such as a letter, diary, or expository essay. Although in an actual English class, they might have fewer opportunities of writing in English than expected, an investigation of how writing anxiety and writing strategy use interplay in Korean students' English writing would still provide useful insight into how to encourage their English writing practices by lowering

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writing anxiety and facilitating writing strategy use. Relatedly, it is irrefutable that Korean students' English writing anxiety and writing strategy use are more or less influenced by their L1 writing experiences. Yet, an investigation of the transfer from L1 writing to L2 writing would require a separate study. Thus, the scope of the present study is limited to the investigation into the interrelationships among writing anxiety, writing strategy use, and writing performance in Korean high school English learners. The research questions that the present study aims to answer are as follows.

1. Do writing anxiety and writing strategy use individually have any effects on writing performance in Korean English learners?
2. Do writing anxiety and writing strategy use conjointly have any effects on writing performance in Korean English learners?
3. Is there any grouping pattern found in Korean English learners when their levels of writing anxiety, frequencies of writing strategy use, and qualities of writing performance are being considered?

II. LITERATURE REVIEW

1. Three Dimensions of L2 Writing Anxiety

L2 writing anxiety is considered as a multidimensional construct (Cheng, Horwitz, & Schallert, 1999; Rechtien & Dizinno, 1997, 1998; Riffe & Stacks, 1988, 1992). In reference to Horwitz, Horwitz, and Cope's (1986) Foreign Language Classroom Anxiety Scale and Daly-Miler's (1975) Writing Apprehension Test, Cheng (1999) identified three components constituting L2 writing anxiety. The first component is assigned the label of low self-confidence in writing English, which primarily refers to learners' self-derogation in relation to English writing. The second component measures the degree to which individuals do or do not enjoy writing in English, labeled aversiveness of writing. Lastly, the third component reflects individuals' fear of actual or potential evaluation of their English writing. In Cheng's (1999) study, the low self-confidence was found to be the most salient component of L2 writing anxiety; furthermore, writers' apprehension for their L2 writing being evaluated was also significantly correlated with overall writing scores.

In her more recent study, Cheng (2004) developed a L2 writing anxiety measure, called the Second Language Writing Anxiety Inventory (SLWAI). The SLWAI is composed of three components, including (a) somatic anxiety, (b) concern for negative evaluation, and (c) behavioral avoidance. In the process of item development, she found that in relation to L2 writing anxiety, some students expressed somatic anxiety, such as unpleasant feelings,

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nervousness, and tension. Other students reported having anxiety caused by some external factors such as their anticipations of teachers' negative evaluations, preoccupation with their own writing ability, and concern for others' perceptions of their writing. Another group of students demonstrated behavioral anxiety through avoidance, withdrawal, and procrastination in completing their writing assignments. Xiao and Wong (2014) refined the categories of writing anxiety symptoms, along with several relatively independent dimensions, into (a) somatic/physiological anxiety (e.g., upset stomach, pounding heart, excessive sweating, and numbness), (b) cognitive anxiety (e.g., worry, preoccupation, and negative expectations), and (c) behavioral avoidance (e.g., procrastination, withdrawal, and avoidance). In their study, students' behavioral avoidance was found to be related to overall writing anxiety to the greatest degree.

2. Writing Anxiety, Writing Strategy Use, and Writing Performance

Only a few studies have examined the relationship between L2 writing anxiety and L2 writing performance, and these have reported a negative association of the two variables. For instance, Khaldieh (2000) showed that less proficient writers experienced a high level of anxiety and frustration, due to their limited vocabulary knowledge, and failed to complete the writing task successfully. On the other hand, more proficient writers appeared to have controlled their anxiety, were confident about their ability to accomplish a given writing task, and performed to their potential. Negari and Rezaabadi (2012) suggested that a low anxiety environment, such as when a teacher assures students that their papers will not be scored, seems to positively affect their writing performance. In their study with Korean English learners, Jang and Rha (2013) also reported a negative correlation between learners' writing anxiety and their writing performance.

In regards to the relationship between writing strategy use and writing performance, many studies have suggested a positive association (Bae & Choi, 2013; Chen, 2011; Chien, 2012; Flower & Hayes, 1981; Kellogg, 1988; Khaldieh, 2000). For example, Chen (2011) suggested that the more often students used pre-writing and revising strategies, the higher scores they would obtain in a writing test. Chien (2012) also showed that high-achieving writers employed more writing strategies. They focused more on formulating their position statement in planning, generating text, and changing the meaning, and fixing grammatical and spelling errors during their review, as compared with low-achieving writers. Khaldieh (2000) found that proficient writers more actively planned for a writing task, evaluated their writing progresses, and monitored errors, than their less proficient counterparts. In their study with Korean English learners, Bae and Choi (2013) suggested that the number of cognitive writing strategies used was significantly correlated with the writing scores. Yet there exist a few studies which suggested no significant association between writing

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strategy use and writing performance. In her study with ESL graduate students in the U.S., Yeon (2002) found no significant differences between proficient and less proficient writers in the number of writing strategies used.

On the other hand, the studies on the relationship between L2 writing anxiety and writing strategy use provide rather conflicting results. In their survey with 60 Jordanian EFL students, AI_Sawalha and Chow (2012) found that high apprehensive writers more frequently employed planning, while-writing, and revising strategies than did low apprehensive writers. In contrast, Khaldieh (2000) suggested a negative association between writing strategy use and writing anxiety. In a similar vein, Schweiker-Marra and Marra (2000) showed that a writing strategy instruction could alleviate L2 learners' writing anxiety. In their study, two groups of at-risk fifth-grade students participated in a writing program. Over a six-month period, the control group of students wrote generally short answers in non-sentence format to questions for core subjects without formal writing instruction, and once a month they were required to compose a writing assignment. Meanwhile, the experimental group received explicit writing instructions with an emphasis on various pre-writing strategies, including choosing a topic, considering a purpose, identifying the audience, and gathering and organizing ideas. Compared with the students of the control group, the students of the experimental group lowered their writing anxiety and improved their written expression scores.

Some current studies have added complications to the interplays of writing anxiety, writing strategy use, and writing performance. Mohseniasl (2014) divided 42 intermediate EFL students into three groups based on their levels of writing anxiety. During ten sessions, the high and low anxiety groups were given explicit training of pre-writing strategies while the intermediate anxiety group received a regular writing instruction with no strategy training. The results of the study indicated a significant decrease in writing anxiety in the high anxiety group, suggesting the effectiveness of explicit pre-writing strategy training in alleviating writing anxiety. However, all participants in the three groups did not show any significant improvement in their writing achievement. In Choi's (2013) study, 75 Korean college students received the instruction in writing process including planning, drafting, receiving feedback, and revising. The experimental group practiced interactive and cooperative peer feedback in addition to teacher feedback, while the control group was assigned only to teacher feedback. The study results indicated that the experimental group's writing anxiety level reduced significantly, as compared to the control group, suggesting that revising activities in a cooperative environment were effective for reducing L2 writing anxiety. However, the two groups did not differ in their writing scores.

Taken together, the previous studies provide only tentative conclusions about the interrelations among L2 writing anxiety, L2 writing strategy use, and L2 writing performance. The association between writing anxiety and writing strategy use is

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inconsistent in research. Adequate use of writing strategies may lower writing anxiety; yet reduced writing anxiety through writing strategy use may or may not lead to enhanced quality of writing. This may suggest the existence of other variables possibly more influential for L2 writing quality or/and the necessity for a sufficient length and intensity of writing strategy training for it to enhance L2 writing quality. Further research which clarifies the interrelations among L2 writing anxiety, L2 writing strategy use, and L2 writing performance is thus needed.

III. METHODS

1. Participants

Ninety six high school students were recruited from two different high schools, located in Sung-Nam and Hwa-Sung areas in South Korea. Through a data screening process, data from 85 participants was used. The participants were all in their second grade in high school. They were 32 males (38%) and 53 females. As references for the participants' English linguistic ability, the participants' English vocabulary knowledge scores, measured using Schmitt, Schmitt and Clapham's (2001) Vocabulary Level Test (VLT) version 2[1], ranged from 0 to 60 (available score: 0-60) and the average was 34.78 (*SD* = 21.83). The participants' scores on Fotos and Ellis's (1991) Grammaticality Judgment Test of dative alternation[2], ranged from 4 to 19 (available score: 0-20) and the average was 13.57 (*SD* = 3.11). The score ranges and means from both measures indicated that the participants' English linguistic ability levels ranged from low to high. Samples of the test items are presented in Appendix A.

2. Instruments and Procedures

1) English Writing Task

The English writing task was designed to measure the participants' English writing

[1] The first 20 questions (2000-3000 frequency levels) of VLT were selected given that the Korean English Vocabulary Guide for the 7th National Curriculum is 3000 words for high school-level English. The maximum score was 60 points because each item consisted of three sub-questions.

[2] Although Fotos and Ellis's (1991) Grammaticality Judgment Test only measures learners' knowledge about dative alternation, it is provided as one reference for the participants' levels of English grammar knowledge given the participants all learned about dative alternation in middle school.

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performance. The topic of the writing essay was "Opinions about going on a Diet." Table 1 presents the instruction of the writing task.

TABLE 1
The Instruction of the Writing Task

In Korea, people are very sensitive to appearance. It is generally thought that slim people are beautiful and cool, so even high school students get pressure that they have to look slim. What do you think about this phenomenon? Give your opinions such as pros and cons of going on a diet in detail. And give some reasons like your personal experiences in a logical way.

We chose an argumentative topic because many previous studies examining writing strategies and writing performance employed argumentative essay writing (e.g., Chen, 2011; Kieft et al, 2007; Ong & Zhang, 2013). In addition, in the Korean context, argumentative essay writing is widely used in standardized English tests and school examinations when evaluating Korean English learners' writing competence. We also considered that our participants would be familiar with the topic 'going on a diet' as they had some personal experience of it. Thirty minutes were given for completing the writing. The lengths of the participants' essays ranged 3-217 words (M = 70.51, SD =53.29) and 1-17 sentences (M =6.66, SD =3.82). Samples of the participants' essays are presented in Appendix B.

Brown and Bailey's (1984) analytical grading scale was used for scoring the participants' essays. The scale is comprised (1) Organization: Introduction, Body and Conclusion, (2) Logical Development of Ideas: Content, (3) Grammar, (4) Punctuation, Spelling and Mechanics, and (5) Style and Quality of Expression. The scoring range for each subscale was zero to 20 points, and thus for each student's composite score ranged from zero to 100 points. The coauthors of this paper scored the writing samples independently. The interrater reliability was .99.

2) Writing Strategies Questionnaire (Petric & Czarl, 2003)

Petric and Czarl's (2003) Writing Strategies Questionnaire (WSQ) was used to measure the participants' strategy use during writing about the given essay topic. The WAQ consisted of three components: pre-writing strategies (8 items), while-writing strategies (14 items) and revising strategies (15 items). In this study, we used the Korean translation version of WSQ to prevent the participants' difficulty in responding caused by their limited English ability. To minimize the possible impairment of the items' original meaning, we went through the translation (original English to Korean), back-translation (Korean translation to English), and cross-examination (original English versus back-translation

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version) processes. The co-authors of this paper first translated the original WSQ items into Korean. Then, a Korean-English bilingual, who has American nationality and entered university through special selection of English standardized tests as a bilingual, back-translated the Korean-translated items into English. Lastly, the three authors cross-examined the original WSQ and back-translated WSQ, and finalized the Korean translated version of WSQ. Among the original WSQ items, we deleted one item (item 3.15, *I give myself a reward for completing the assignment*) because our participants were not able to reward themselves as they were writing in a classroom. The items were answered on a six Likert-type scale ranging from "always true (6)" to "never true (1)". In this study, the Cronbach alpha coefficient for the Korean version of WSQ was .82. The WSQ is presented in Table 2.

TABLE 2

Writing Strategies Questionnaire (Petric & Czarl, 2003)

Pre-Writing Strategies
1. I make a timetable for the writing process.
2. Before I start writing I revise the requirement.
3. I look at a model written by a native speaker or more proficient writer.
4. I start writing without having a written or mental plan.
5. I think about what I want to write and have a plan in my mind, but not on paper.
6. I note down words and short notes related to the topic.
7. I write an outline of my paper.
8. I write notes or an outline in my native language.
While-Writing Strategies
1. I start with the introduction.
2. I stop after each sentence to read it again.
3. I stop after a few sentences or a whole paragraph, covering one idea.
4. I reread what I have written to get ideas how to continue.
5. I go back to my outline and make changes in it.
6. I write bits of the text in my native language and then translate them into English.
7. I go for sure in grammar and vocabulary.
8. I simplify what I want to write if I don't know how to express my thoughts in English.
9. If I don't know a word in English, I write it in my native language and later try to find an appropriate English word.
10. If I don't know a word in English, I find a similar English word that I know.
11. If I don't know a word in English, I stop writing and look up the word in the dictionary.
12. I use a bilingual dictionary.
13. I use a monolingual dictionary.
14. I ask somebody to help out when I have problems while writing.
Revising Strategies
1. I read my text aloud.
2. I only read what I have written when I have finished the whole paper.
3. When I have written my paper, I hand it in without reading it.
4. I use a dictionary when revising.
5. I make changes in vocabulary.
6. I make changes in sentence structure.
7. I make changes in the structure of the essay.
8. I make changes in the content or ideas.

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9. I focus on one thing at a time when revising (e.g., content, structure)
10. I drop my first and start writing again.
11. I check if my essay matches the requirements.
12. I leave the text aside for a couple of days and then I can see it in a new perspective.
13. I show my text to somebody and ask for his/her opinion.
14. I compare my paper with the essays written by my friends on the same topic.
15. I check my mistakes after I get back the paper with feedback from the teacher, and try to learn from them.

3) Second Language Writing Anxiety Inventory (Cheng, 2004)

The Second Language Writing Anxiety Inventory (SLWAI) developed by Cheng (2004) was used to measure the participants' L2 writing anxiety. The SLWAI consisted of 22 items consisting of (a) Somatic Anxiety (7 items), (b) Avoidance Behavior (7 items) and (c) Cognitive Anxiety (8 items). The items were answered on a six Likert-type scale ranging from "strongly agree (6)" to "strongly disagree (1)". The SLWAI was also translated in Korean through the translation, back-translation, and cross-examination. In this study, the Cronbach alpha coefficient for Korean version of SWAI was .94. The SLWAI is presented in Table 3.

TABLE 3
Second Language Writing Anxiety Inventory (Cheng, 2004)

Somatic Anxiety
2. I feel my heart pounding when I write English compositions under time constraint.
6. My mind often goes blank when I start to work on an English composition.
8. I tremble or perspire when I write English compositions under time pressure.
11. My thoughts become jumbled when I write English compositions under time constraint.
13. I often feel panic when I write English compositions under time constraint.
15. I freeze up when unexpectedly asked to write English compositions.
19. I usually feel my whole body rigid and tense when I write English compositions
Avoidance Behavior
4. I often choose to write down my thoughts in English.
5. I usually do my best to avoid writing English compositions.
10. I do my best to avoid situations in which I have to write in English.
12. Unless I have no choice, I would not use English to write compositions.
16. I would do my best to excuse myself if asked to write English compositions.
18. I usually seek every possible chance to write English compositions outside of class.
22. Whenever possible, I would use English to write compositions.
Cognitive Anxiety
1. While writing in English, I'm not nervous at all.
3. While writing English compositions, I feel worried and uneasy if I know they will be evaluated.
7. I don't worry that my English compositions are a lot worse than others'.
9. If my English composition is to be evaluated, I would worry about getting a very poor grade.
14. I'm afraid that the other students would deride my English composition if they read it.
17. I don't worry at all about what other people would think of my English compositions.
20. I'm afraid of my English composition being chosen as a sample for discussion in class.
21. I'm not afraid at all that my English compositions would be rated as very poor.

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3. Data Analysis

To examine Korean high school students' self-reported levels of English writing anxiety, English writing strategy use, and English writing performance, we calculated the descriptive statistics of the participants' responses to the SLWAI and WSQ, and their English writing scores. To inspect the interrelationships among the writing anxiety, writing strategy use, and writing performance, a series of correlations analyses were conducted. Subsequently, a series of regression analyses were conducted in order to examine the powers of one variable or two variables in combination for predicting Korean high school students' English writing performance. Lastly, a hierarchical cluster analysis was performed to explore the presence of any patterned relationships in Korean high school students in their writing anxiety, writing strategy use, and writing performance.

IV. RESULTS

1. Descriptive Statistics and Correlation Analyses

Descriptive statistics of the participants' English writing anxiety, writing strategy use, and writing performance are presented in Table 4.

TABLE 4
Descriptive Statistics of Writing Anxiety, Writing Strategy Use, and Writing Performance

Variables		*N*	*Range*	*M*	*SD*
Writing Anxiety	Composite score	85	1.2-6.0	3.68	.92
	Somatic anxiety		1.0-6.0	3.26	1.10
	Avoidance behavior		1.1-6.0	4.04	1.08
	Cognitive anxiety		1.4-6.0	3.74	.95
Writing Strategy Use	Composite score	85	2.3-4.6	3.70	.49
	Pre-writing		1.4-4.8	3.56	.68
	While-writing		2.2-5.4	4.10	.56
	Revising		1.9-4.5	3.43	.58
Writing Performance	Composite score	85	0-89.0	45.64	33.10
	Organization		0-18.5	8.81	6.70
	Content		0-18.0	8.99	6.57
	Grammar		0-18.0	8.98	6.79
	Mechanics		0-18.0	9.62	7.02
	Voice		0-17.5	9.12	6.42

The mean score of English writing anxiety (M = 3.68) indicates that the participants experience a moderate level of English writing anxiety. Among the three components of writing anxiety, the avoidance behavior (M = 4.04) was scored higher than the cognitive

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anxiety (M =3.74) and somatic anxiety (M = 3.26). This suggests that Korean high school students' writing anxiety is more likely shown in their behavioral avoidance, withdrawal, and procrastination in completing their English writing assignments, rather than somatic symptoms or feelings of worry. The mean score of English writing strategy use (M = 3.70) indicates that the participants think they employ writing strategies more often than not. The subscores of writing strategy use indicate the participants' higher reliance on while-writing strategies (M = 4.10) than prewriting (M = 3.56) and revising strategies (M = 3.43). An inspection into the mean scores of individual while-writing strategies reveals that the top three most frequently used strategies involve using a Korean-English dictionary (M = 4.92), simplifying what I want to write (M = 4.84), and stopping each sentence to read it again (M = 4.74), suggesting that Korean English learners' writing strategy use is related to their difficulties of generating English words and sentences.

Table 5 summarizes the correlations among the composite scores of writing anxiety, writing strategy use, writing performance, along with the participants' scores of vocabulary level test and grammaticality judgment test.

TABLE 5

Correlations among Three Main Variables and Two Supplementary Variables

	Writing Anxiety	Writing Strategy Use	Writing Performance	Vocabulary	Grammaticality Judgment
Writing Anxiety	1				
Writing Strategy Use	-.26**	1			
Writing Performance	-.50**	.52**	1		
Vocabulary	-.50**	.53**	.85**	1	
Grammaticality Judgment	-.34**	.39**	.41**	.48**	1

p*<.05, p**<.01.

As shown by Table 5, the participants' English writing anxiety was negatively correlated with their writing strategy use (r = -.26, p <.01) and writing performance (r = -.50, p <.01). The results may indicate that the less English writing anxiety Korean high school students experience, the more often writing strategies they employ and the higher English writing scores they get. On the other hand, the participants' writing strategy use was positively correlated with their English writing performance (r = .52, p < .01). This may mean that the more frequently Korean students employ writing strategies, the higher English writing scores they receive; or it may mean that the greater English writing ability Korean learners possess, the more frequently they employ writing strategies. As supplementary analyses, the participants' English linguistic knowledge was correlated positively with their writing strategy use (r = .53, p <.01 for vocabulary; r = .39, p <.01 for grammar) and writing performance (r = .85, p <.01 for vocabulary; r = .41, p <.01 for grammar), but negatively with writing anxiety (r = -.50, p <.01 for vocabulary; r = -.34, p <.01 for grammar).

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2. Interrelations among Writing Anxiety, Writing Strategy Use, and Writing Performance

1) Effects of English Writing Anxiety on English Writing Performance

To evaluate the effects of English writing anxiety on English writing, first, a series of correlation analyses were run with the subscores of the two variables. As shown by Table 6, the subscores of writing anxiety were all negatively correlated with the subscores of writing performance with moderate correlation coefficients.

TABLE 6
Correlations among Subscores of Writing Anxiety and Writing Performance

	Writing Performance	Organization	Content	Grammar	Mechanics	Voice
Writing Anxiety	-.50**	-.50**	-.49**	-.50**	-.49**	-.50**
Somatic	-.39**	-.40**	-.39**	-.38**	-.37**	-.40**
Avoidance	-.53**	-.52**	-.52**	-.53**	-.53**	-.51**
Cognitive	-.42**	-.42**	-.40**	-.42**	-.42**	-.42**

*p**<.05, *p***<.01.

Subsequently, a stepwise multiple regression analysis was run with the English writing performance as the criterion variable, and the avoidance behavior, cognitive anxiety, and somatic anxiety as the predictor variables in order. As shown by Table 7 below, the three models were significant. In the first step, the avoidance behavior accounted for a significant amount of variance in the English writing scores (R^2 = .278, F[1, 83] = 31.953, p<.01). However, in the second and third steps, the cognitive anxiety and the somatic anxiety accounted for a nonsignificant amount of additional variance of English writing scores after controlling the variance explained by the avoidance behavior (R^2 change = .007, ΔF[1, 82] = .382, p>.05 for cognitive anxiety; R^2 change = .004, ΔF[1, 81] = .529, p>.05 for somatic anxiety). This suggests that Korean students' procrastination with English writing tasks could serve as a stronger predictor for their English writing performance, than their cognitive anxiety or somatic anxiety.

TABLE 7
Prediction by Subscores of Writing Anxiety on English Writing

Model	Variable	*B*	*SEB*	*β*	R^2	ΔR^2
1	Avoidance	-16.178	2.862	-.527**	.278**	
2	Avoidance	-13.804	3.937	-.450**	.285**	
	Cognitive	-3.940	4.479	-.113		.007
3	Avoidance	-13.423	3.997	-.437**	.288**	
	Cognitive	-1.721	5.701	-.049		
	Somatic	-2.831	4.473	-.094		.004

*p**<.05, *p***<.01.

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2) Effect of Writing Strategy Use on English Writing Performance

Table 8 presents the correlations among the subscores of English writing strategy use and English writing performance. The participants' English writing performance was positively correlated with their prewriting strategy use (r = .62, p <.01) and revising strategy use (r = .46, p <.01), but not with while-writing strategy use (r = .17, p >.05). Despite the participants' greatest reliance on while-writing strategies, their while-writing strategy use was not associated with any subscores of their English writing performance.

TABLE 8

Correlations among Subscores of Writing Strategy Use and Writing Performance

	Writing Performance	Organization	Content	Grammar	Mechanics	Voice
Writing Strategy Use	.52**	.52**	.50**	.52**	.54**	.51**
Prewriting	.62**	.61**	.60**	.61**	.63**	.61**
While-writing	.17	.15	.16	.17	.19	.15
Revising	.46**	.47**	.44**	.45**	.46**	.46**

p*<.05, p**<.01.

Subsequently, a stepwise multiple regression analysis was run with the English writing performance as the criterion variable, and the prewriting strategy use as the predictor variable in step 1, and revising strategy use as the predictor variable in step 2. As shown by Table 9 below, both models were significant. In the first step, the prewriting strategy use accounted for a significant amount of variance in the English writing scores (R^2 = .383, F[1, 83] = 51.475, p<.01). However, in the second step, the revising strategy use accounted for a nonsignificant amount of additional variance of English writing scores after controlling the variance explained by the prewriting strategy use (R^2 = .092, R^2 change = .005, ΔF[1, 82] = .650, p>.05). This suggests that Korean students' prewriting strategy use could serve as a stronger predictor for their English writing performance, than their revising strategy use.

TABLE 9

Prediction by Writing Strategy Use on English Writing

Model	Variable	*B*	*SEB*	*β*	R^2	ΔR^2
1	Prewriting	30.276	4.220	.619**	.383**	
2	Prewriting	27.318	5.599	.558**	.388**	
	Revising	5.233	6.492	.092		.005

p*<.05, p**<.01.

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3) Effects of Writing Anxiety and Writing Strategy Use on Writing Performance

To delve into the relationships among the subscores of writing strategy use and of writing anxiety, a series of correlation analyses were performed. As indicated by Table 10, the participants' English writing anxiety was negatively correlated with their prewriting (r = -.35, p <.01) and revising strategy use (r = -.30, p <.01), but not with while-writing strategy use (r = -.03, p >.05). This suggests that Korean students' use of while-writing strategies have little to do with their levels of English writing anxiety. Among the three components constituting writing anxiety, yet, only the avoidance behavior was significantly associated with writing strategy use (r = -.39, p <.01).

TABLE 10

Correlations among the Subscores of Writing Anxiety and Writing Strategy Use

	Writing Anxiety			
		Somatic	Avoidance	Cognitive
Writing Strategy Use	-.26**	-.14	-.39**	-.18
Prewriting	-.35**	-.24**	-.41**	-.27*
While-writing	-.03	-.10	-.07	-.03
Revising	-.30**	-.16	-.45**	-.18

p*<.05, p**<.01.

The writing anxiety as the predictor was entered into a simple regression model predicting the writing strategy use. As shown in Table 11, the results indicated that the model was significant, F (1, 83) = 6.219, p< .01, but accounted for only 7% of the variance in the writing strategy use (adjusted R^2 = .058).

TABLE 11

Prediction by Writing Anxiety on Writing Strategy Use

Variables	B	SEB	β	t	P
Writing Anxiety	-.142	.057	-.264	-2.494	.015

Note. R^2= .07 (N = 85, p < .01)

To evaluate the impact of the writing anxiety and writing strategy use in combination on English writing performance, another stepwise multiple regression analysis was run with the English writing performance as the criterion variable, and the English writing anxiety as the predictor variable in step 1, and writing strategy use as the predictor variable in step 2. As shown by Table 12 below, in the first step, the English writing anxiety accounted for a significant amount of variance in the English writing performance (R^2 = .253, F [1, 83] = 24.047, p<.01). In the second step, the writing strategy use accounted for a significant amount of additional variance of English writing scores after controlling the variance explained by writing anxiety (R^2 = .416, ΔR^2 change = .164, ΔF [1, 82] = 22.995, p<.01).

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The result indicates that the English writing anxiety and writing strategy use in combination contribute significantly to Korean students' English writing performance.

TABLE 12

Prediction by Writing Anxiety and Writing strategy use on Writing Performance

Model	Variable	*B*	*SEB*	β	R^2	ΔR^2
1	Writing Anxiety	-18.020	3.403	-.503**	.253**	
2	Writing Anxiety	-14.049	3.137	-.392**		
	Writing Strategy Use	28.061	5.852	.419**	.416**	.164**

*p***<.01.

3. Patterns of Writing Anxiety, Writing Strategy Use and English Writing

A hierarchical cluster analysis was conducted to identify patterns of English writing anxiety, writing strategy use, and English writing scores. The technique used to generate the cluster solution was Squared-Euclidian distance and Ward's minimum variance clustering method (Ward, 1963). Upon a careful examination of the dendrogram and fusion coefficients, a range of two to five clusters were examined. After carefully analyzing each solution, the two-cluster solution was chosen. The descriptive statistics of the two-cluster solution are presented in Table 13, along with the results of a multivariate analysis of variance.

TABLE 13

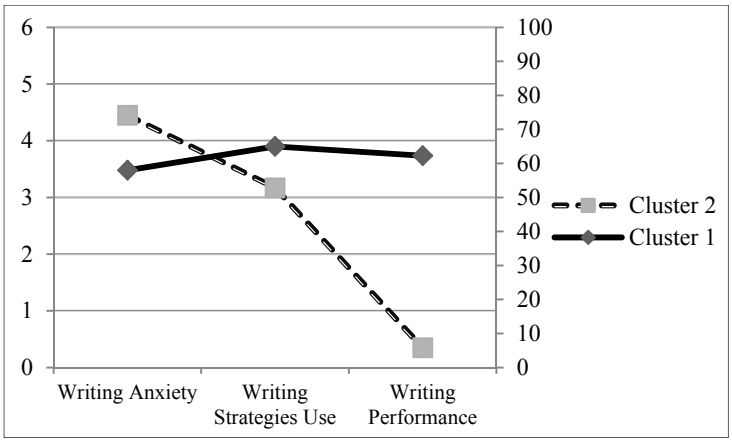
Two-Cluster Solution

Variables	Cluster 1 (*N*=60)		Cluster 2 (*N*=25)		MANOVA results		
	M	*SD*	*M*	*SD*	*F*	*p*	η^2_p
Writing Anxiety	3.36	.83	4.45	.65	78.21	.00	.49
Writing Strategy Use	3.92	.31	3.17	.46	131.22	.00	.61
Writing Performance	62.27	24.23	5.74	6.55	34.85	.00	.30

A multivariate analysis of variance found significant differences between the two clusters in English writing anxiety (F = 78.21, p<.01, η^2_p = .49), writing strategy use (F = 131.22, p<.01, η^2_p = .61), and English writing score (F = 34.85, p<.01, η^2_p = .30). The cluster 1 represented the group of Korean students characterized as low writing anxiety, high writing strategy use, and high English writing performance; the cluster 2, on the other hand, was the group having high writing anxiety, low writing strategy use, and low English writing performance. Figure 1 describes the mean score profiles of the cluster 1 and cluster 2.

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FIGURE 1
Mean Score Profiles for Cluster 1 and Cluster 2



V. DISCUSSION

In this study, the results of descriptive analyses show that Korean high school students experience a moderate level of writing anxiety when they write in English, and their writing anxiety is most likely to be shown in avoidance behavior such as withdrawal or procrastination in completing writing assignments (Kang, 2009; Xiao & Wong, 2014). The results of the descriptive analyses also indicate that Korean high school students rely mostly on while-writing strategies regardless of their degrees of English writing anxiety and English writing ability. The Korean students' most frequently used while-writing strategies were 'using a Korean-English dictionary,' 'simplifying what I want to write,' and 'stopping each sentence to read it again.' These results also support the findings by Chen (2011) and Kim (2008) regarding EFL learners' high reliance on while-writing strategies, presumably to cope with their difficulties of generating English words and sentences.

Regarding the effects of writing anxiety and writing strategy use on writing performance in Korean English learners (RQ 1), the results of the study are generally consistent with those given by some previous studies. Specifically, the Korean students' English writing anxiety was negatively associated with their writing strategy use (Khaldieh, 2000) and English writing performance (Daly, 1978; Faigley, Daly, & Witte, 1981; Lee & Krashen, 1997). And the Korean students' English writing strategy use was positively associated with their English writing performance (Chen, 2011; Chien, 2012; Kieft et al., 2007). Yet, more detailed analyses showed that while the prewriting strategy use and revising strategy use have positive effects on English writing performance, while-writing strategy use does not. This suggests that the Korean English learners' greatest reliance on while-writing

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strategies in fact exerts no effect on enhancing their writing performance. As for the combined impact of English writing anxiety and writing strategy use (RQ 2), the two predictor variables conjointly accounted for approximately 42% of variance of their English writing performance, despite the two variables' offsetting effects on writing performance. More importantly, the writing strategy use could exert a greater positive effect, beyond the negative effect of writing anxiety, on English writing performance.

These results suggest that lowering writing anxiety and facilitating writing strategy use could help enhance Korean English learners' writing performance. Given that several previous studies suggested the positive effect of writing strategy training for alleviating writing anxiety (Choi, 2013; Mohseniasl, 2014; Schweiker-Marra & Marra, 2000), the writing strategy instruction would be helpful for Korean students to cope with their English writing anxiety. It should be noted, however, the aforementioned studies also showed that reduced writing anxiety through writing strategy training did not result in enhanced quality of writing. These seemingly conflicting results may imply that there might be a third variable, perhaps, linguistic knowledge or self-assessed writing competence, which plays a threshold role in determining writing performance, and thus influences the interplays among writing anxiety, writing strategy use, and writing performance. In this aspect, we acknowledge that our study is limited by not including learners' overall English proficiency or self-assessed writing competence. The participants' scores of vocabulary and grammar used in the study were only partial indices for their overall English proficiency. Future research should investigate possible intervening effects of other variables on the interplays among the three variables being investigated in this study.

The results of the cluster analysis in this study revealed that the Korean students were grouped into two clusters (RQ 3): (a) 'high writing anxiety, low writing strategy use, and low writing performance' and (b) 'low writing anxiety, high writing strategy use, and high writing performance.' A group such as 'high writing anxiety, high writing strategy use, and high writing performance' or 'low anxiety, low writing strategy use, and low writing performance' did not emerge from the participants of the present study. This raises a question: What if we facilitate Korean students' awareness of writing strategies and their ability to use writing strategies adequately? Could we find a group of students who possess high writing anxiety yet still produce high quality of writing through their employment of writing strategies? If this is the case, English writing teachers could help improve their students' English writing competence by providing adequate writing strategy training even when their increased writing strategy use might not decrease their levels of writing anxiety. We suggest that it deserves further research.

교보문고 KYOBO Book Centre

VI. CONCLUSION

Some important pedagogical implications to emerge from our findings foreground teachers' responsibility for lowering L2 learners' anxiety toward writing. Use of L1, cooperative environment, positive feedback and encouragement from teachers may lower the intensity of anxiety and frustration of L2 learners and help them develop self-confidence in L2 writing. The results of this study also suggest that L2 learners such as Korean high school students should receive adequate training in writing strategy use. As shown in the effects of writing strategy use in this study, training prewriting and revising strategies in particular could help L2 learners manage their writing anxiety as well as develop their L2 writing skills. As a closing note, the emphasis on pedagogical assistance with writing anxiety and writing strategy training in the present study does not diminish in any sense the importance of developing learners' English linguistic knowledge, given the suggested large dependence of learners' vocabulary and grammar knowledge on their writing performance. Yet an assumption that increased linguistic knowledge would necessarily result in decreased writing anxiety and increased writing strategy use also calls for investigation.

A limitation of the study is that the possible effects of the participants' perceived degrees of difficulty about the given writing topic on their writing anxiety, writing strategy use, and writing performance were not considered. If the participants were given a simpler topic, the study results might be different. In addition, the three variables investigated in this study might show different interplays in the context of a computer-based or internet-based writing. This awaits future research.

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APPENDIX A

Samples of Vocabulary Level Test and Grammaticality Judgment Test

< Vocabulary Level Test>

※오른쪽에 주어진 설명에 해당되는 단어를 왼쪽에서 찾아, 그 번호를 쓰시오.

(12)

1 abandon		
2 dwell		
3 oblige	____	live in a place
4 pursue	____	follow in order to catch
5 quote	____	leave something permanently
6 resolve		

<Grammaticality Judgment Test>

※ 다음 문장이 문법적으로 맞으면 ○, 틀리면 X표시 하세요.

2. She asked a question to the class. ( )

……

20. She repeated me the word. ( )

APPENDIX B

Samples of Participants' Essays

<Sample A>

Nowadays, lots of high school students in Korea want to be slender and lighter. I think this results from the country's social atmosphere to think about others perspective a lot. People in Korea tend to think being in a group with others is safe and important, so they try hard to follow me society's unspoken rules. The problem is that one of those unspoken rules is being slim. This is why people start to wonder what others think about their appearance, their style, and everything related to them. They want to be in the majority's group. In this Korean society, where being slender is valued high, students try diet. However, I disagree with this action of trying diet. Not only this kind of diet harms student's health but also gives wrong diet about beauty to students. Students do diet just by not eating lunch or dinner and they rarely consider exercise and nutrition. Also by doing diet, students tend to think that being slender is the absolute standard of beauty. Of course this isn't true and students need to learn how to accept others standard of health and they should be tolerant about others appearance. Therefore, I think student's diet isn't a good action and I hope that our society can develop wider ideas about people's beauty.

<Sample B>

I disagree this problem.
many people increased stress because of weight. other country is uninterested this problem. Although over weigh people increased, They wear suitable clothes. But korea is adverse. There aren't thing for their. So they are stressed-out. And talents are thin. This is generattation.(??) Addition to, students are sensitive pretty, tall, thin etc are very important for students. They willing to diet. For pretty. But student' diet method is not good at.

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Applicable Languages: English
Applicable Levels: Secondary

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