



## Conceptualization of Second Language Writing Strategies and their Relation to Student Characteristics

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This study investigated second language (L2) writing strategies in which categories were chosen through deductive reasoning of strategies pertaining to planning, problem-solving, and corrective feedback. The relationships among strategy categories with self-reported L2 writing skill, writing anxiety and major were also identified. Items selected for inclusion into the questionnaire emanated from established L2 writing strategy research. A group of 127 English and 100 non-English majors participated in this questionnaire study. The three writing strategy categories were isolated through a combination of exploratory and confirmatory factor analysis. Structural equation modeling (SEM) was used to identify the association the three writing strategy categories have with L2 writing skill, anxiety and English/non-English majors. Results revealed that problem-solving strategies were most popular followed by planning strategies, while corrective feedback strategies were reported least. Self-perceived L2 writing skills had a positive association with each strategy category. SEM identified positive path coefficients from L2 writing anxiety to all three strategy categories when controlling for writing skill, suggesting moderate levels of L2 writing anxiety have a positive influence on strategy use. English majors had a greater propensity for planning strategies than non-English majors. Results driven pedagogical implications for administering L2 writing strategy training are given.

**Keywords:** L2 writing strategies, L2 writing anxiety, L2 writing, ESL, EFL, corrective feedback

### Introduction

The current study explored and validated a second language writing strategy survey and then investigated the relationship writing strategy groups have with writing skill, anxiety, and major. Correctly using L2 writing strategies are essential for students attempting to master composition goals. However, lack of vocabulary knowledge, low exposure to the target language, and differences between the L1 and L2 produce challenges for second language writers (Graham, 2006; Hyland, 1996; Stapa & Abdul, 2006). Writing strategies can help students mitigate these challenges and find effective ways to accomplish writing objectives often through deliberate practice that focuses on improving writing skills. These strategies are specifications, behaviors, steps, or techniques used by students to enhance their own learning (Scarcella & Oxford, 1992) and become useful tools for active, conscious, and purposeful self-regulation.

Writing strategy research continues to stay relevant because strategy-training programs must adapt to evolving L2 writing environments. For instance, education technology in the language-learning classroom increases the convenience for pedagogy rich in corrective feedback. Sharing composition and commenting on writing with peers and instructors through platforms like online forums, wikis, social network sites, and blogs allow students to engage in computer-assisted writing strategies related to

planning, organizing, composing, sharing, and reflecting (Miyazoe & Anderson, 2010). Furthermore, online writing tools give L2 writers new strategies to improve composition through data-driven learning (Crosthwaite, 2017), automated writing evaluation (Stevenson & Phakiti, 2014), and online translation websites (Goves & Mundt, 2015).

The three strategy categories under investigation here are planning (before writing), problem-solving (when writing), and corrective feedback (after writing). Planning and problem-solving categories are regarded here as metacognitive and cognitive strategies respectively. Metacognitive strategies refer to methods used to help students understand the way they learn or think about their thinking. Metacognitive writing strategies often involve planning, monitoring, and evaluation and help students develop appropriate plans for increasing writing skills (Wenden, 1998). In the context of L2 writing, metacognitive strategies benefit students by helping them set appropriate learning goals and choose the correct strategies to help them achieve those goals.

Cognitive strategies are mental processes that are consciously implemented to regulate thought and content in order to achieve goals or solve problems (Cameron & Jago, 2013). Cognitive writing strategies can direct attentional focus through the use of online dictionaries, online translation software, reading written text aloud or other acts that explicitly focus attention on accomplishing writing. Corrective feedback strategies can be a combination of indirect and direct strategies and often entail what Oxford (2011) calls a strategy-chain because students must socially engage one another (i.e., social strategy) and then give or negotiate received feedback (i.e., cognitive strategies). Indirect feedback strategies include reflection, comparison, and discussion of writing compositions while direct feedback strategies can entail *giving* or *receiving* explicit written corrective feedback. Benefits of corrective feedback on L2 writing quality have been well documented but little is known on how students perceive these feedback strategies compared to planning or problem-solving strategies. The current study hopes to better understand how these three strategy categories compare to one another overall and with respect to important student characteristics.

While there are a great number of student characteristics (e.g., task value, self-efficacy, self-regulation, etc.), for the sake of feasibility, only the association among writing strategies with L2 writing skills, L2 writing anxiety and English/non-English majors were analyzed in the current study. L2 proficiency has consistently shown a positive relationship with language learning strategies in general (Lan & Oxford, 2003; Oxford, 2003) and this is also true in the context of L2 writing (Cassidy & Bailey, 2018; Kao & Reynolds, 2013; Wenden, 1998; Zhang & Qin, 2018). Because learning strategies are defined as specific behaviors and thought processes used by the learner to facilitate the acquisition, storage, or retrieval of information (Weinstein & Mayer, 1986), it is expected students who perceive their writing skills as good will also use more writing strategies. The next student characteristic under investigation here is L2 writing anxiety. Numerous studies have recognized negative correlations with language anxiety and academic performance in the L2 speaking classroom (Horwitz, 2001; Horwitz, Horwitz, & Cope, 1986; Kim, 2009), and in L2 writing context (Cheng, 2004; Kim, 2006; Pae, 2012), but no study to this researcher's knowledge has investigated the relationship between L2 writing anxiety and L2 writing strategies. The final student characteristic measured here is university major. English majors practice more L2 writing due to extra English related courses and therefore may differ in strategy-use from non-English majors.

## Literature Review

The following literature review first explores common categorizations of L2 writing strategies and then builds relatedness and connectivity among these strategies with L2 writing skills, writing anxiety, and English/non-English majors.

## Categorizations of L2 Writing Strategies

Researchers have extensively studied L2 writing strategies (Kao & Reynolds, 2017; Luoma & Tarnanen, 2003; Mu & Carrington, 2007; Wendon, 1998). Kao and Reynold's (2017) survey systematically reclassified Oxford's (1990) strategy taxonomy by "focusing on writing skills in the EFL setting and then determined whether there was any relationship between strategy use and perceived writing ability and writing difficulty" (p. 31). In the context of L2 writing, Kao and Reynolds (2017) uncovered cognitive, social, compensation strategies used most, and affective strategies (e.g., self-rewards) used least. Applying Oxford's (1990) strategy inventory for language learning (SILL) in the context of L2 writing is considered controversial here because the majority of SILL items refer to language learning in general and not English writing specifically.

Other studies categorized L2 writing strategies according to the chronological order they occur during the writing process (Maarof & Murat, 2013; Zhang & Qin, 2018). These strategies happen before (e.g., brainstorm, outline, schedule time), during (e.g., dictionary use, translate from the L1 to the L2, stop to re-read each sentence), and after writing (e.g., read aloud, edit, ask for feedback). Following a chronological ordering, Maarof and Murat (2013) also followed a before-during-after categorization of writing strategies when they examined strategies used in essay writing among high-intermediate and low proficiency ESL secondary school students. They found students of different levels employ different strategies in the three stages of writing. High proficient writers simplified what they wrote while lower proficient ones began by writing ideas down in their L1 and then translating to the L2. Overall, writing strategies were moderately used by students and no difference was found in strategy use between high and low L2 proficient students. At the individual strategy-item level, low proficiency students used more translation strategies which is in line with what Baker and Boonkit (2004) found when investigating differences in writing strategy use across proficiency levels. Specifically, they discovered that students who planned their ideas using outlines or visual aids (e.g., mind maps) performed better in writing. The current study suggests that the recursive nature of L2 writing makes the chronological ordering of strategies problematic when implementing strategy-training activities because the process of planning, monitoring, and evaluating are not mutually exclusive to before, during, and after writing a composition. For instance, a student can monitor themselves when writing an outline and then evaluate the quality of the outline. Chronological ordering of strategies factor nicely into distinct categories but strategy-training becomes difficult because an instructor must approach multiple aspects of writing simultaneously, such as asking students to think about their planning, monitoring, and evaluating, and this risks overloading students with too many writing goals.

Strategy items from the questionnaires reviewed (Cassidy & Bailey, 2018; Maarof & Murat, 2013; Sasaki, 2000; Zhang & Qin, 2018) all referenced some form of corrective feedback. The current study is unique because feedback strategies were isolated into their own group. While benefits for corrective feedback are overwhelming (Cassidy & Bailey, 2018; Jang, 2013; Jeong, 2010; Wooley, Was, Schunn, & Dalton, 2008), they are still found to be scarcely utilized in writing classrooms and this may be attributed to corrective feedback strategies being poorly understood (Baker & Boonkit, 2004).

Jeong (2010) compared the effect of a peer-feedback group to a non-feedback group using computer-mediated communication and found that peer feedback produced meaningful revisions and provided students with the opportunities to learn from their peers and negotiate meaning with each other. Students become more autonomous and produce higher quality compositions when using corrective feedback strategies (Cassidy & Bailey, 2018; Han, 2012; Tan & Manochphinyo, 2017; Wooley et al., 2008). Wooley et al. (2008) hypothesized that students who provided peer feedback on specific dimensions of writing during peer review would "lead to stronger cognitive organization for reviewers which, in turn, would translate to stronger writing of their own" (p. 2378). Their elaboration group (i.e., wrote feedback notes and rated their peers' compositions) outperformed the number-rating only group suggesting that "mere exposure to peer writing was much less powerful than when it involved the articulation of comments" (p. 2378). Peer to peer research has continued to grow over the past three decades (Hedgcock

& Lefkowitz, 1992; Mendonca & Johnson, 1994; Villamil & De Guerrero, 1996), yet acknowledgment of such corrective feedback strategies remains poorly represented in L2 writing strategy surveys (Cassidy & Bailey, 2018).

Cassidy and Bailey (2018) sought to map out and account for the benefits afforded by both *giving* and *receiving* corrective feedback through the students' own perceptions and practice of peer review. When it came to the perceived benefits resulting from the process of giving peer feedback, students reported a wide range of improvements related to "gains in their awareness and use of cognitive, metacognitive, affective, and social learning strategies" (Cassidy & Bailey, 2018, p. 23). Overall, students were able to focus on a wide range of different grammar, content, and organizational aspects of their peer's work and employed affective strategies (e.g., praising one another in their written peer feedback) when helping each other improve their writing.

### **Student Characteristics: Writing Skills, Writing Anxiety, and Major**

The positive relationship between L2 proficiency and language learning strategies (Oxford, 1990, 2003, 2011) has also been recognized in the relationship between L2 writing skills and L2 writing strategy use (Cassidy & Bailey, 2018; Kao & Reynolds, 2017). Writing strategies are behaviors and thought processes that are goal-oriented, consciously deployed, amenable to change, and can be observable or non-observable (Wenden & Rubin, 1987) and therefore commonly associated with higher L2 writing skills. However, once writing skill reaches a certain climax, strategy use may not be essential because the writing process occurs effortlessly. In other words, strategies and L2 proficiency produce a latent curve (Gu, 2002; Oxford, 1990) in which the relationship stays positive to a point where the learner no longer requires strategies to use the target language. Once this occurs, the frequency and selection of strategies decrease. Oh, Lee, and Moon (2015) explored the contributions of planning strategies (e.g., scheduling extra time for writing) and L2 linguistic knowledge on Korean EFL students' argumentative essay. Their findings indicated that the quality of content of student outlines (i.e. pre-writing strategy) had a statistically significant contribution to L2 writing (21.4% explanatory power). Planning strategies contributed to the quality of the L2 writing content, grammar, mechanics, and vocabulary.

Spielberger (2010) defines anxiety as "the subjective feeling of tension, apprehension, nervousness, and worry associated with arousal of the autonomic nervous system" (p. 1). L2 writing anxiety negatively correlates with writing skills (Bailey, 2019) but little is known about the relationship between anxiety and strategy use. L2 writing anxiety is apprehension one feels when writing in a second language and can be in the form of mental anguish (e.g., fear) which emanates into physiological responses (e.g., cold sweats) and behavioral tendencies such as avoiding L2 writing. Numerous studies have investigated methods that mitigate language anxiety because it contributes to the cause of low L2 proficiency (Horwitz, 2001; Jiang, 2015). Horwitz et al. (1986) found a significant moderate negative correlation between L2 anxiety and academic outcomes, indicating that students with lower levels of foreign language anxiety received higher grades than their higher anxious counterparts. Most studies investigated the relationship between language anxiety and academic outcome (Horwitz et al., 1986; Kim, 2006; MacIntyre & Gardner, 1991; Pae, 2012) but there is a dearth of research that investigates the relationship between L2 writing anxiety and L2 writing strategies.

Academic major is often seen as a major factor that influences language learning and motivation (Oxford & Nyikos, 1989), and English majors consistently show greater L2 proficiency and strategy use than non-English majors (Liu & Rao, 2011). Students who major in English, by all likelihood, use a set of writing strategies that differ from those who choose non-English majors because English is often crucial for success in future employment. Empirical studies on academic major and learning strategies tend to focus on general L2 communication and not L2 writing (Abjullah & Alireza, 2010; Ghadessy, 1998; Gu, 2002; Oxford & Nyikos, 1989). Differences in strategy use across academic majors repeatedly emerge. Engineers were found to rely most on metacognitive strategies and least on social strategies, while political science majors used social strategies the most and memory strategies least (Abjullah & Alireza,

2010). Gu (2002) found that art students outperformed science major in general L2 English proficiency and had larger language learning strategy repertoires. Fewell's (2010) English majors used more strategies than non-English majors which were attributed to English majors perceiving English proficiency critical for future employment while business majors viewed English classes a means to graduation. The objective of "completing a four-month semester course is certainly different from that of entering a lifelong English related career" (Fewell, 2010, p. 169). There is a lack of research investigating the differences in writing strategies between English and non-English majors. While all students are required to take English courses in South Korea, English majors are expected to have higher motivation and participate in substantially more English courses than non-English majors and this extra attention to English may influence L2 writing strategy choice and frequency of use.

The first aim of this study was to validate a second language writing strategy survey. By adopting and modifying items from established L2 writing strategy research (Cassidy & Bailey, 2018; He, Chang, & Chen, 2011; Kao & Reynolds; Maarof & Murat, 2013; Sasaki, 2000; Zhang & Qin, 2018), three distinct categories were expected to emerge: planning, problem-solving, and corrective feedback. The second aim of this study identified the influence L2 writing skill, L2 writing anxiety, and English/non-English majors have on strategy-use. To achieve these two research goals, the following questions were asked:

1. What are the frequencies of strategy-use for planning, problem-solving, and corrective feedback strategies?
2. What effects do L2 writing skill, L2 writing anxiety, and major have on planning, problem-solving, and corrective feedback strategies?

## Methodology

First, this study used a combination of exploratory and confirmatory factor analysis which identified planning, problem-solving, and corrective feedback strategy categories associated with L2 writing. The study next used structural equation modeling to measure the influence L2 writing skills, L2 writing anxiety and English/non-English majors have on these three strategy categories.

## Participants

A total of 227 (Male = 97, Female =130) students were recruited from two South Korean universities (four instructors and 10 classes) to participate in this questionnaire study. There were 127 English and 100 non-English majors. While all South Korean university students are required to attend English communication courses, English majors must attend advanced English courses that entail considerably more L2 writing. Table 1 displays student demographic information. Students had moderate levels of L2 proficiency as indicated by their Test of English for International Communication (TOEIC) and self-reporting. Self-evaluation of writing skill was used here to identify L2 writing skill beliefs because it has shown strong validity in previous L2 writing strategy research (Kao & Reynolds, 2013; Wharton, 2000).

Students were given thirty minutes to complete the questionnaire and the option to opt out if they did not want to participate. Prior to administering the questionnaire, an explanation sheet describing the research was provided to students in their native language (i.e., Korean). Questionnaires were administered electronically using Google Forms ([www.forms.google.com](http://www.forms.google.com)). All students had Smart Phone devices and were familiar with completing online questionnaires. Students had to respond to all items before submitting the Google Form survey which resulted in no missing data.

TABLE 1  
*Demographic Information*

	<i>n</i>		<i>n</i>		<i>n</i>
Male	97	TOEIC Scores		Writing Skill*	
Female	130	0-300	35	1	17
English Major	127	300-500	57	2	15
Non-English Major	100	500-700	51	3	41
L2 Proficiency*		700-850	38	4	48
1-3	59	850+	14	5	48
3-4	57	N/A	32	6	31
4-5	44	Years Studying English		7	15
6-7	29	1-4	83	8	11
7-8	22	5-7	98	9	1
9-10	15	8+	46	10	0

Note. \* self-rated L2 writing skill and L2 proficiency scores: 1 (low) to 10 (high)

## Materials

### Writing Strategy Scales

Originally 16 items were entered into the survey but two were removed during factor analysis. A resulting 14-item writing strategies questionnaire was created. The items emanated from existing questionnaires (Cassidy & Bailey, 2018; Kao & Reynolds; Maarof & Murat, 2013; Zhang & Qin, 2018) and were placed in the planning, problem-solving, and corrective feedback categories. Some items were modified to simplify meaning. For example, an original item from Kao and Reynolds (2017) reads, "I brainstorm to generate ideas for writing to bring out my own existing ideas and start expanding them as preparation for the future writing task" while a simplified version reads, "I organize my thoughts (e.g., brainstorm) before I begin writing in English." The simplification was done to avoid overloading single items with too much information. Table 1 displays items for the three writing strategy scales.

TABLE 2  
*Writing Strategy Items*

Planning	
1.	I set aside time in advance when writing in English.
2.	I organize my thoughts (e.g., brainstorm) before I begin writing in English.
3.	I plan my schedule so I will have enough time to write in English.
4.	I give myself extra time when writing in English.
5.	I look at writing examples (e.g., models) to help my writing.
6.	I make an outline or write notes before writing in English.
Problem-solving	
7.	I simplify what I want to write if I don't know how to express my thoughts in English.
8.	If I don't know a word in English, I stop writing and look up the word in the dictionary.
9.	I use Internet tools when writing in English (e.g., translator, and grammar checker).
Corrective Feedback	
10.	I ask others for help with my English writing.
11.	I compare my English writing to my friends' English writing.
12.	I ask others for feedback on my English writing.
13.	I use peer comments to improve my English writing.
14.	I make changes to my English writing after receiving feedback.

Due to the idiosyncratic nature of writing strategies, this is hardly an exhaustive list. Reliability analysis for the planning, problem-solving, and corrective feedback strategies resulted in sufficient Cronbach alphas of .901, .707, and .926 respectively.

## L2 Writing Anxiety Scale

Four items related to cognitive anxiety were taken from Cheng's (2004) second language writing anxiety instruments. The four items were: *I am anxious that I will make grammar mistakes when writing in English*, *I am worried that my grade will be low when writing in English*, *I am confused when writing in English within a time limit*, and *I am worried that I will make mistakes when writing in English*. The Cronbach alpha for anxiety items was .931. Demographic and student characteristic information were collected through the survey. Students were asked to give their gender, academic major, L2 proficiency, L2 writing skills, and years studying English. Items were translated from English to Korean by a professional translator and then checked by a second translator. Discrepancies in translations were discussed and resolved.

## Data Analysis

The data collected through the survey were subjected to both EFA and CFA using structural equation modeling. Data analysis was carried out using the statistical software packages SPSS 23.0 and AMOS 24.0. The data analysis section begins by describing the data screening process and factor analysis used in this study. Figure 1 illustrates the hypothesized path directions for the study variables.

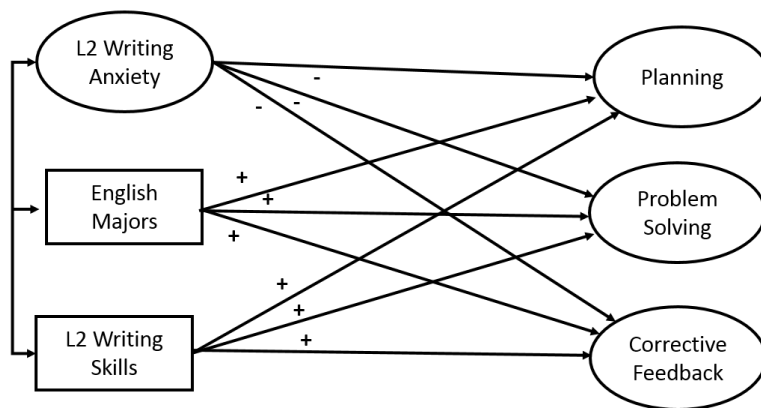


Figure 1. Proposed relationship directions for study variables.

## Data Screening

Linear regression of the study variables was used to generate Mahalanobis and Cook's distance values to look for outliers in which nine existed and were consequently removed leaving 227 total respondents. Normal distributions were observed for the indicators of the latent factors concerning kurtosis and skewness. No value of Kurtosis was outside the range of -2 to +2 and no value of skewness outside the range of -1.96 to 1.96 indicating acceptable levels of normal univariate distribution (George & Mallery, 2010). To test for multicollinearity, the study next examined variable inflation factors on our variables and observed no VIF greater than two which is far less than the threshold of ten.

## Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) was one of the statistical methods used in this study. Factors for the three components were extracted through the maximum-likelihood method with Varimax rotation. Several well-recognized criteria for the factor analysis were used. The Kaiser-Meyer-Olkin Measure (KMO) of sampling adequacy was .91, above the recommended value of .6, and Bartlett's Test of

Sphericity was significant ( $c^2(300) = 3334.67, p < .001$ ). No commonality was observed below .50. After running factor analysis, one item (*I read my writing aloud*) loaded below the decided cutoff point of .400 and was consequently removed. A second item showed double loading (*I first write in my L1 then translate to the L2*) on both planning and problem-solving categories. It was decided that this item could pertain to both planning (e.g., writing an outline in the L1) and problem-solving (e.g., translating composition from the L1 → L2) and was therefore removed. An analysis was run once more and resulted in items loading in their respective categories. Table 3 displays the pattern matrix.

TABLE 3  
*Pattern Matrix for Strategy*

	1	2	3
Planning 1	.903		
Planning 2	.866		
Planning 3	.809		
Planning 4	.725		
Planning 5	.697		
Planning 6	.643		
Problem-solving 1		.838	
Problem-solving 2		.608	
Problem-solving 3		.589	
Peer Feedback 1			.841
Peer Feedback 2			.829
Peer Feedback 3			.778
Peer Feedback 4			.717
Peer Feedback 5			.695

Confirmatory Factor Analysis (CFA) is a standard statistical technique for testing a theoretical model (Kline, 2011). The study proceeded to measure the model validity. Composite Reliability (CR), Average Variance Extracted (AVE) and Cronbach's Alpha values were calculated to address the convergent validity of measures (Table 4). All AVE values were at or above the recommended value of 0.50. All CR values were above .70.

TABLE 4  
*Composite Reliability (CR) and Average Variance Extracted (AVE) Values*

	CR	AVE	1	2	3
1 Peer Feedback	.89	.52	.79		
2 Planning	.91	.59	.63	.77	
3 Problem-solving	.72	.50	.34	.37	.69

The initial data computation also revealed that the data demonstrated homogeneity of variance and met the assumption of linearity. Requirements for CFA were satisfied.

## Results

The current study investigated L2 writing strategy categories and their relation to learner characteristics. The correlation matrix for the study variables along with means scores are presented in Table 5. As expected, strategy categories correlated positively with one another and L2 writing anxiety had a negative correlation with L2 writing skills. Regarding research question one, students reported using corrective feedback strategies least, followed by planning strategies. Problem-solving strategies were reported most frequently used.



TABLE 5  
Correlation Matrix for Study Variables

Variable	1	2	3	4	5
1. Planning					
2. PS	.422**				
3. CF	.667**	.324**			
4. Anxiety	.035	.095	.081		
5. WS	.378**	.228**	.227**	-.342**	
Mean	4.32	4.78	3.67	4.44	4.35
SD	1.36	1.05	1.19	1.32	1.78
Skewness	-.335	-1.301	-.205	-.641	.068
Kurtosis	-.439	1.940	-.373	-.153	-.370

Note. Alpha level .05\*, .01\*; Writing proficiency ranged from 1(low) to 10(high); Abbreviations are Problem-solving (PS), Corrective Feedback (CF), and Writing Skill (WS)

For research question two, structural equation modeling was used to investigate the effect L2 writing skill, L2 writing anxiety, and major have on planning, problem-solving, and corrective feedback strategies. Initially, a three-factor correlated model was used to validate the three L2 writing strategy categories. The results of the first round CFA ( $\chi^2 = 169.57$ ;  $df = 87$ ;  $p < .001$ ;  $\chi^2/df = 1.949$ ; RMSEA = .057; GFI = 0.909; CFI = 0.954; PCLOSE = .048) suggested that the model fit indexes were insufficient. Upon checking modification indices, it was recommended that items four and six (M.I. = 11.67), and items four and five (M.I. = 10.51) covary. Adequate model fit was achieved after running the model again ( $\chi^2 = 148.13$ ;  $df = 85$ ;  $p < .001$ ;  $\chi^2/df = 1.743$ ; RMSEA = .053; GFI = 0.919; CFI = 0.965; PCLOSE = .209), indicating planning, problem-solving and corrective feedback strategies are conceptually unique.

The next step in answering research question two investigated the relationship L2 writing anxiety, perceived L2 writing skills, and academic major (English/non-English) have with the three strategy categories. L2 writing anxiety, English/non-English major, and L2 writing skill beliefs were added as exogenous variables to the model. Figure 2 displays the path coefficients with non-significant paths removed. L2 writing anxiety had a positive path coefficient with all three strategy categories, with problem-solving strategies containing the highest path coefficient (.25). English major differed from non-English majors in planning strategy use, suggesting the added motivation and English experience associated with English majors has a positive effect on metacognitive writing strategies related to pre-writing activities. Finally, as expected, L2 writing skill beliefs had a positive path coefficient with all three strategy categories.

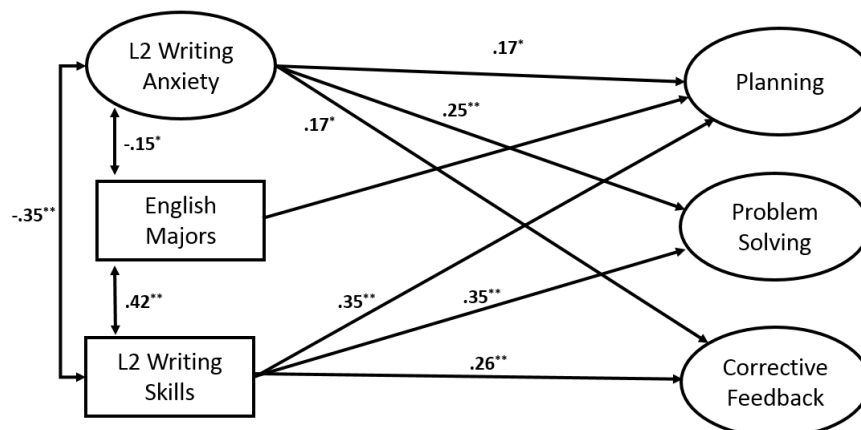


Figure 2: Study model with student characteristics.

## Discussion

This study first attempted to explain L2 writing strategies through the viewpoint of planning, problem-solving, and corrective feedback strategies. The second aim investigated the relationship L2 writing skill, L2 writing anxiety, and English/non-English majors have with the three strategy categories. The CFA on the 14-item survey produced a three-factor solution in terms of planning, problem-solving, and corrective feedback strategies. Strategy categories were held as dependent variables with L2 writing skills, L2 writing anxiety, and major as independent variables. As revealed in the results section, L2 anxiety had positive path coefficients to each of the strategy categories while English majors were more prone to using planning strategies than non-English majors. Self-reported L2 writing skill beliefs showed a positive relationship with all three writing-strategy categories which is consistent with previous research on writing strategies in South Korea (Jong & Kim, 2016).

The first category (planning) was composed of six writing strategies related to time (Item 1, 3 and 4), organization (Item 2), outlining (Item 5), and discourse planning (Item 6). Findings recognized that these strategies were favored by English majors, indicating they tended to plan ahead and organize their thoughts and materials when writing in English. Non-English majors may not require a powerful grasp on L2 writing skills for future employment and therefore more sophisticated writing strategies are not essential. Metacognitive writing strategies are associated with self-regulated learning behavior and favored among higher performing learners. Well prepared students are “ones with strong metacognitive awareness about their writing and [have] clear goals to complete their writing tasks” (Zhang & Qin, p. 168).

The second factor (problem-solving) contained three items related to simplifying (Item 7), translating (Item 8), and online tools (Item 9). Students, overall, had a propensity to use these strategies most. English and non-English majors showed no difference in the frequency use of problem-solving strategies. L2 writing skill had the greatest positive path coefficient towards problem-solving strategies. This is interesting because problem-solving strategies could be thought of as avoidance strategies in which students avoid composing ideas on their own by resorting to outside resources like dictionaries and online translation tools.

The third and final category (corrective feedback) contained five items: asking others for help (Item 10 and 12), comparing writing (Item 11), and using feedback (Items 13 and 14). This strategy category was least popular among all students and showed no statistically significant difference between English and non-English majors. An overwhelming body of evidence continues to show the benefits of corrective feedback and collaborative writing, however, students appear to hold little motivation in practicing corrective feedback strategies. The low enthusiasm for feedback strategies is likely due to the time and work-intensive responsibilities related to corrective feedback. Furthermore, corrective feedback strategy training is not popular in test-heavy countries like South Korea where L2 writing skill is often overshadowed by test performance on multiple choice tests like the TOEIC which assess language properties related to grammar and listening (Bailey & Judd, 2018).

With the inclusion of self-perceived L2 writing skills, a positive path coefficient was witnessed on the relationship between anxiety and each strategy category, with the most positive influence on problem-solving strategies. This positive relationship suggests moderate levels of writing anxiety compliment writing strategy use. This makes sense because strategies are mechanisms for accomplishing writing tasks. If students wrote effortlessly, without anxiety, then writing strategies would not be necessary. Instead, students are faced with challenges which produce varying levels of L2 writing anxiety and this anxiety leads successful students to engage in L2 writing strategies to help achieve their writing objectives. Furthermore, many L2 writing strategies are a form of L2 writing in and of themselves so it would be expected that certain L2 writing strategies, like writing outlines in English, would also elicit some amount of L2 writing anxiety.

## Pedagogical Implications and Conclusion

This study revealed a number of pedagogical implications. First, L2 writing anxiety may not be as debilitating to the writing process as previously thought (Bailey, Lee, Vorst, & Crosthwaite, 2017; Pae, 2012). Writing anxiety predicted strategy use when controlling for writing skills. This finding makes the argument for more strategy training in L2 writing classrooms with low proficient learners regardless of their apprehension to writing in English. Oxford (1990) outlines a useful sequence to follow for the instruction of strategies that explicitly emphasize 1) strategy awareness, 2) functional practice with the strategies, and 3) demonstrations of the transferability of the strategies to new tasks. The current study posits that the writing strategies under investigation here are ideal for this type of strategy training.

Emerging technology can assist students with high writing anxiety. Lower proficient L2 writers with anxiety can benefit from problem-solving strategy training with online writing tools like Google Translate © and online dictionaries because the software compensates for their lack of L2 knowledge. Free versions of automated writing evaluation platforms like Grammarly ([www.grammarly.com](http://www.grammarly.com)) are becoming increasingly more accurate and this provides low skilled writers opportunity to self-evaluate their writing before having to share composition with others.

A second pedagogical finding from this study pertains to the frequency of writing strategy use. Cognitive strategies are instant actions that often occur during the writing process and therefore are more quickly accessible than planning strategies that entail the time-consuming contemplation of ideas. With that being said, many planning strategies are less time-consuming than certain corrective feedback strategies because they do not require sharing writing with others or rewriting compositions. In other words, the time involved with using a corrective feedback strategy can take days or even weeks (e.g., first draft → review → receive corrective feedback → apply changes), and often only occurs when attending an L2 writing course. Writing instructors should recognize the time-dependent nature of writing strategies and plan training programs accordingly. Less time required for the strategy may equate to more practice, and hopefully mastery, of the writing strategy. Students appear to be sensitive to the instant gratification rewarded by writing strategies. Because of this, automatic writing evaluation software (e.g., Grammarly) may elicit more frequent use of corrective feedback strategies than corrective feedback from a teacher or peer.

There were a number of limitations in this study. The sample size of 227 was on the lower end of acceptable levels for using CFA and SEM. Next, the problem-solving strategy category only consisted of three items, which was considered low. An attempt to identify a more robust category of problem-solving strategies should be made in future studies. No intervention with students was carried out in the current study. Future research may wish to administer a pre-post-survey design that attempts to investigate the effect writing strategy training has on strategy choice and frequency of use. Future studies may also wish to investigate the influence other student characteristics like self-efficacy and task value have on L2 writing strategies. Finally, researchers may wish to investigate the strategy training efficacy of websites like [www.grammarly.com](http://www.grammarly.com). Sites like these specialize in providing instant corrective feedback and continue to become more accurate with time. Assuming strategy use is dependent on the time needed to carry out the strategy, such websites can prove to be valuable in promoting more corrective feedback strategy use.

Three writing strategy categories and their relation to writing skill, L2 writing anxiety, and English/non-English majors were explored. The following findings emerged: (1) self-perceived L2 writing skills predicted strategy use, (2) when controlling for writing skill, L2 writing anxiety had a positive influence on L2 writing strategy use, (3) English majors had a stronger propensity for planning strategies than non-English majors, and (4) students, overall, preferred problem-solving strategies the most, followed by planning and corrective feedback strategies respectively.

English is visible in the linguistic landscape across the world and English writing skills are perceived by many to be a necessary tool in helping non-native English students gain a competitiveness in today's globalized world. As English writing becomes more necessary for international communication, so does

the need to better understand L2 writing strategies. Findings from this study helped meet that need by contributing to our understanding of L2 writing strategies and their relationship to student characteristics.

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