Strategy, Affect, and L2 Ability in Integrated Writing

Minyoung Cho*
(Korea University)
On-Soon Lee
(Korea University)


Along with the increasing interest in integrated writing in L2 instruction, many studies have investigated language skills and cognitive processes involved in the task. However, relatively less is known regarding the roles of strategic and affective variables in predicting writing performance. The current study, therefore, investigates (a) how strategy, attitudinal, affective, and ability variables are related, and (b) how these variables predict performance in integrated writing. Predictor variables include proficiency, reading comprehension, vocabulary size, L2 strategy use, and attitudes toward reading and writing, and anxiety. Forty-three participants completed an L2 reading-writing integrated task, in which they read reading texts and wrote an essay summarizing the source text and arguing their opinions on the issue. Results showed that proficiency was positively related to reading-to-write strategies, and vocabulary size negatively to reading anxiety; however, ability-related variables generally had no or weak relationships with affective variables. Furthermore, only reading comprehension and reading anxiety were found to be significant predictors of performance in integrated writing.

**Keywords**: integrated writing, reading-and-writing, reading comprehension, strategy use, L2 anxiety, attitudes

1. INTRODUCTION

Integrated writing has become increasingly popular in instructional contexts and testing settings, and it, more often than not, has replaced or complemented the traditional writing-
The authentic nature of integrated writing has made it a popular genre of writing in L2 instruction (Carson, 2001; Feak & Dobson, 1996; Read, 1990; Weigle, 2004), because much academic work, either written or spoken, requires students to use others’ sources, respond to others, or reflect on their own works (Carson, 2001; Leki & Carson, 1997). Increasingly more L2 curricula integrates different language skills, for example, combining reading and writing skills together, and listening and speaking in concert (Cumming, 2013; Grabe, 2003; Woltersberger, 2013). These instructional practices also parallel with gradual adoption of integrated tasks in assessment arenas such as integrated writing tasks in TOEFL iBT. The adoption of integrated writing in TOEFL, as the Educational Testing Service intended, has had “positive washback on teaching and learning” (Cumming et al., 2006, p. 1), drawing on much interest from researchers and teachers.

Despite its popularity in educational contexts, however, integrated writing has been opposed by some researchers due to inconsistencies in defining its nature and construct validity (e.g., Knoch & Sitajalabhorn, 2013). Some have argued that integrated writing is nothing but a subset of the writing task, which is not largely different from independent writing because it essentially measures one’s writing skills (Brown, Hilgers, & Marsella, 1991). Others, however, have shown that integrated writing is, though related, considerably different from independent writing (Cumming et al., 2005), in that integrated writing involves much complex cognitive skills and strategies that help coordinate the needs between reading and writing, while synthesizing information from source materials (e.g., Knoch & Sitajalabhorn, 2013). While both perspectives hold true, it seems necessary to consider various skills and strategies to better understand integrated writing.

As the term “integrated” denotes, various language skills and strategies are involved in integrated writing, or reading-to-write tasks1. L2 learners have to handle shifting needs between reading and writing, in addition to managing linguistic demands, by selecting, evaluating, and interpreting source texts to produce a new text. These heightened cognitive demands can direct learners to adopt strategies, which can also influence learners’ task performance. The use of strategy has been shown to affect L2 reading or L2 writing performance (He, 2005; Sheorey & Mokhtari, 2001), but the influence of strategy use on integrated writing has received scant attention (cf., Li, 2014). Additionally, it remains unclear how strategies that specifically address reading, writing, or reading-to-write are related to L2 integrated writing performance.

Furthermore, the field has not paid enough attention to how affective and attitudinal

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1 While the scope of source texts varies to encompass both aural and written input (i.e., listening and reading), in this study, integrated writing will be used in a narrow sense only to refer to reading-to-write tasks.
variables influence performance of integrated writing, despite copious research findings on the relationship between affective variables and general L2 performance outcomes (Kormos, 2012; Kormos & Dönyei, 2004; MacIntyre, 2002; Yashima, Zenuk-Nishide, & Shimizu, 2004). It seems necessary to consider multiple variables to better understand the nature of integrated writing. Little is known about the relationships among ability and strategy, and affective and attitudinal variables, as they are situated within integrated writing. Understanding these relationships will help us observe potential interactions among variables and infer indirect influences of variables on writing performance. Therefore, the current study investigates the relationships among ability, strategy, and affective and attitudinal variables on reading and writing and further examines how these variables predict performance in L2 integrated reading-to-write tasks.

2. LITERATURE REVIEW

2.1. Integrated Writing

Integrated writing, in brief, can be described as “skill amalgamation and source use” (Knoch & Sitajalabhorn, 2013, p. 301). From a pedagogical perspective, integrated writing refers to “instructional tasks that combine reading and writing for various educational purposes” (Delaney, 2008, p. 140). Cumming et al. (2005) provided a more sophisticated definition of integrated writing as follows: “written compositions that display appropriate and meaningful uses of and orientations to source evidence, both conceptually (in terms of apprehending, synthesizing, and presenting source ideas) and textually (in terms of stylistic conventions for presenting, citing, and acknowledging sources)” (p. 34). Cumming et al.’s definition indicates that integrated writing is not a mere sum of different language skills, but incorporates such skills as mining, selecting, synthesizing, organizing, and connecting ideas as well as transforming the language used in the source text by appropriating stylistic conventions (Knoch & Sitajalabhorn, 2013).

To date, pedagogical approaches to the research on integrated writing have focused on how integrating reading practices enhances writing improvement or literacy development (Ferris & Hedgcock, 1998; Kim, 2012). Some studies have shown that reading-focused instruction only (i.e., extensive reading) can help L2 writing development (Ferris & Hedgcock, 1998), while other studies have shown that instruction merely focusing on reading may not necessarily be beneficial for L2 writing development (Spivey & King, 1989). Kim’s (2012) study adopted reading instruction focusing on integrated writing (i.e., reading-for-writing practices), which had a positive impact on the development of L2 writing, although reading-for-writing practices alone failed to help writing development in
terms of language use, such as grammar and fluency. These pedagogical approaches offer a valid basis for integrating reading and writing in L2 curricula.

Moreover, understanding theoretical implications of integrated writing bears particular importance to understanding underlying abilities involved in the task and to offering justifications for adopting integrated approaches in L2 instruction. Delaney (2008) provided the theoretical significance of reading-to-write tasks from three perspectives. First, from the reading perspective, by engaging in reading, either to learn (Carver, 1997; Kintsch, 1998) or to integrate information (Grabe & Stoller, 2002), a reader can create a text model or text structure and selectively and critically evaluate the source text for writing. Second, from the writing perspective, source texts enable writers to readily access existing knowledge, to understand tasks, and to assess and revise the written work. Third, from the constructive viewpoint in which the process of writing is seen as a meaning-making process, writers engage in textual operations of organizing, selecting, and connecting ideas, while appropriating source texts (Spivey, 1990). This literate act of meaning-making, through the concerted function of reading and writing, is central to literacy development (Spivey, 1990). These theoretical accounts indicate that integrated writing can incorporate linguistic and cognitive skills and knowledge that may fall in the domain of reading, writing, or other constructive domain in order to create a new text.

Plakans (2008) provided the integrated writing process model, which consists of the preparing to write phase and the writing stage. In the preparing to write phase, writers read prompt, instructions, and interact with source texts, using various strategies. In the writing stage, writers’ preparation is realized in written form by employing knowledge of grammar, lexis, and styles, and writers also monitor and evaluate their written products. Her interview data indicated that integrated writing engages writers more in re-reading the prompt of the writing and makes them spend more time thinking about and interpreting tasks than independent writing, indicating a more recursive nature of integrative writing compared to independent writing.

Again, one distinctive feature of integrated writing pertains to the extent to which reading-related skills or variables are incorporated, compared to independent writing skills. Past research on the role of reading and writing skills in integrated writing has generally supported the crucial role of writing ability, but findings on the role of reading skills are inconsistent. For example, high correlations were generally found in the relationship between writing skills and integrated writing scores (Brown et al., 1991). For reading skills, however, some studies have shown a strong correlation between general reading comprehension scores and scores for a reading-to-write integrated task (Sawaki, Quinlan, & Lee, 2013; Trites & McGroarty, 2005), while other studies have shown weak relationships (Asención, 2008; Watanabe, 2001).

The inconsistent findings on the role of reading ability in integrated writing can be partly
due to the amount of source texts used in integrated writing. For example, if writing involves a substantial degree of reading comprehension, for example, as in summary writing, the role of reading skills might be more important, compared to writing tasks where the understanding of source texts becomes relatively less important, as in a reflective essay. Moreover, as reading comprehension can also be affected by topic familiarity or background knowledge (Lee, 2011), learners’ general reading skills used to predict integrated writing can be different from actual reading skills adopted for comprehending the source texts in integrated writing. These explanations raise the question about the role of understanding source material in integrated writing, in contrast to previous studies that have examined the role of general reading skills in integrated writing. Understanding the contribution of source text understanding to integrated writing is important, in that it can provide insights to teachers as to what language skills they can assess through integrated writing.

2.2. Strategy, Affect, and L2 Ability in Integrated Writing

2.2.1. Strategy

Studies have shown that integrated writing requires, in addition to language skills, complex cognitive and metacognitive strategies (Li, 2014; Plakans, 2008; Spivey & King, 1989; Yang & Plakans, 2012), yet relatively little research interest has been shown in strategy use in integrated tasks. Insomuch as reading skills are involved in integrated writing, reading strategies may have some influence on integrated writing (Sheorey & Mokhtari, 2001). Similarly, as writing strategies have been widely associated with writing performance and writing development (He, 2005), it is likely that writing strategies can also influence performance in integrated writing to some extent.

Li (2014) examined how reading and writing strategies influence integrated summarization writing. She found that L2 learners use word- and sentence-level strategies for reading source texts (i.e., identifying and skipping unknown words) than intra-sentential level strategies (i.e., checking for inferences). She also compared the importance of reading and writing strategies in summary writing, finding a superior role of writing strategies. Her study further showed no role of proficiency in determining participants’ use of reading and writing strategies in integrated writing, contrary to other studies that showed such relationships (Plakans, 2008).

Similarly, strategies relevant to integrated writing have been identified (e.g., Nussbaum, 2008; Nussbaum & Schraw, 2007). Yang and Plakans (2012) identified three composite strategies for integrated writing: (a) discourse synthesis strategy use including organizing and selecting skills, (b) self-regulatory strategy use pertaining to monitoring, and (c) “test-
wiseness” strategy use concerning copying, using writing models and patchwriting. They found that self-regulatory strategy controls the use of other strategies, and discourse synthesis strategy use had a direct and positive impact on test performance. Test-wiseness strategy had a direct but negative impact on performance.

In addition, Spivey and King (1989) proposed that three major discourse synthesis processes are involved in writing from source texts, which were organizing, selecting, and connecting. Other strategies include monitoring and evaluating, whereby writers identify goals and make strategic plans to achieve the task goals (e.g., Asención, 2004; Stein, 1990). Plakans (2008) also demonstrated that learners used various reading strategies as a means of interacting with source texts such as summarizing, reacting to ideas and phrases, and identifying rhetorical structures. Li’s (2014) study showed that in integrated writing, the writing strategy of planing content from sources (cf. the preparation phase in Plakans’s (2008) writing integrated model) was the most frequently used writing strategy amongst the various types of reading strategies (i.e., checking for inferences, rereading instructions) and writing strategies (i.e., reorganizing source patterns, and editing for punctuation). These findings show that L2 learners coordinate various skills and strategies in integrated writing to handle and interact between reading and composing needs.

2.2.2. Affect

Positive motivation or affect have also been considered as catalysts for developing writing skills (Hayes, 1996; Troia, Shankland, & Wolbers, 2012). Hayes’s (1996) writing model shows that motivational and affective factors such as goals, dispositions, beliefs and attitudes, and cost/benefit estimates also influence cognitive processes involved in writing, including text interpretation, reflection, and text production. Research findings have consistently shown that learners’ positive attitudes towards writing affect students’ writing development and achievement (Albin, Benton, & Khramtsova, 1996; Graham, Berninger, & Fan, 2003). Similarly, learners’ attitudes and beliefs toward reading and writing have been found to serve as a filter through which a certain task is interpreted, shaped and represented in learners’ minds (Mateos et al., 2011).

In the same line, L2 anxiety has generally been negatively associated with L2 performance and development (Cheng, Horwitz, & Schallert, 1999; Horwitz, 2001; Horwitz, Horwitz, & Cope, 1986), although positive roles have been occasionally reported (i.e., overstudying). Many studies have shown that L2 anxiety is a skill-specific construct, which means that L2 learners’ apprehension toward the L2 depends on the specific language skills involved (i.e., L2 speaking anxiety, L2 writing anxiety, L2 reading anxiety, and L2 listening anxiety) (Cheng et al., 1999; Pae, 2013). Nevertheless, this affective domain of L2 anxiety has not been addressed in the study of integrated writing, and
considering its role in L2 performance, the influence of L2 anxiety in integrated writing warrants further research investigation.

2.2.3. L2 Ability

In discussing predictors of integrated writing, it seems reasonable to consider the role of general L2 ability variables such as L2 proficiency and L2 vocabulary. As the role of reading comprehension was discussed in the previous section, this section will be devoted to discussing proficiency and vocabulary size. First, L2 proficiency, as is prevalent in many other performance domains, appears to influence integrated writing in various ways. Less proficient learners’ lack of linguistic knowledge or resources (i.e., grammar, vocabulary) can cause difficulties in reading or writing processes involved in integrated writing. Also, the lack of linguistic sophistication can cause difficulties in smooth integration of information (Campbell, 1990), resulting in poor performance in integrated writing. At the same time, proficiency is associated with other individual differences variables such as strategy and motivation (Cho, 2013), so that its influence on integrated writing can be seen as indirect and mediated via other strategies and motivational variables (Cho, 2013; Sasaki, 2000; Sheorey & Mokhtari, 2001). Plakans (2008) showed that students’ strategy use in integrated writing and independent writing depends on their proficiency and motivation. Students with higher proficiency and stronger interest in writing adopt writing strategies in integrated tasks that differ from those in writing-only tasks, but less experienced writers adopt similar strategies for both types of writing tasks. Spivey and King (1989) also showed that learners with higher proficiency levels tend to spend more time in organizing, selecting, and connecting ideas from source texts than less proficient learners of English.

Additionally, though findings are inconsistent, some studies have shown significant relationships between reading abilities and performance of integrated writing (Trites & McGroarty, 2005; Sawaki et al., 2013). These findings, along with the generally accepted strong and positive relationship between reading abilities and L2 vocabulary (e.g., Qian, 1999, 2002), in turn suggest that L2 vocabulary can indirectly influence integrated writing performance through the mediation of reading comprehension. Research findings have shown a strong positive relationship between receptive vocabulary size and writing ability (Stæhr, 2008). It is also likely that vocabulary size can directly affect L2 writing performance, as the size and depth of vocabulary knowledge can enable L2 writers to have diverse and appropriate lexical selection, producing lexically rich texts. Sawaki et al.’s (2013) study showed that integrated writing performance was also related to learners’ productive vocabulary knowledge.

In summary, the increasing popularity of integrated writing in educational contexts and
assessment venues have raised a question over the nature of integrated writing with respect to the language skills and non-linguistic variables involved in integrated writing. Studies have suggested that, in addition to reading and writing skills, various affective and attitudinal factors as well as strategy use can explain performance in integrated writing. Understanding these skills and other related affective and attitudinal variables seems necessary to interpret performance on the task, and to provide pedagogical insights into using integrated writing as instructional and assessment tasks. Furthermore, an understanding of the relationships among variables may be necessary as a preliminary step so as to better predict variables explaining integrated writing. Also, some underlying relationships between these variables and integrated writing performance can be inferred from the relationships among predictor variables. This study, therefore, addressed the following research questions:

1) What relationships exist among potential predictor variables for integrated writing including strategy (reading strategy, writing strategy, reading-to-write strategy), affect (attitude towards L2 reading and writing, L2 reading anxiety, and L2 writing anxiety), and L2 ability variables (L2 proficiency, reading comprehension, vocabulary size)?

2) Among the variables, what predicts performance in L2 integrated reading-to-write tasks?

3. METHOD

3.1. Participants

Forty-three Korean EFL university students who enrolled in a course on English reading and writing participated in the study. A C-test adopted from Schulz (2006) assessed participants’ general proficiency. The C-test asked students to fill out blanks in a reading passage, with each blank provided with the first half of the letter of the correct word. There were 40 items, and participants scoring between 27-40 were considered advanced learners, those between 16-27 as intermediate learners, and those below 16 as beginners (Schulz, 2006). Following these criteria, 15 students were advanced learners ($M = 13, SD = 2.23$), 15 were intermediate ($M = 19.07, SD = 2.97$), and 13 were classified as beginners ($M = 30.07, SD = 2.10$). This suggests that participants in the study had a wide range of proficiency levels. Participants had less than a year of study abroad or experience living abroad.
3.2. Instruments

A set of tests and questionnaires was administered, which include (a) a vocabulary size test, (b) a questionnaire on strategy use, (c) a questionnaire on reading and writing attitudes and anxiety, and (d) an integrative task that consisted of reading comprehension and integrated writing.

3.2.1. Vocabulary size

To measure students’ vocabulary size, Nation and Beglar’s (2007) vocabulary size test was adopted, which was made available in Korean. This test includes a total 140 multiple-choice questions; a learners’ total score is multiplied by 100 to find the learners’ total vocabulary size (e.g., 35 out of 140 means that a learner’s vocabulary size is 3,500 word families). On the test, students read a target word that was presented within a sentence and choose one of four meanings provided in Korean. Students could skip unknown words. This task took approximately 30 minutes.

3.2.2. Questionnaires

Two sets of questionnaires were administered on a six-point Likert scale. One set of questionnaires investigated learners’ anxiety and attitudes towards reading and writing (four items on reading anxiety, four on writing anxiety, five on attitudes toward reading and writing). These questionnaire items were developed based on previous studies (Papi, 2010; Taguchi, Magid, & Papi, 2009). The other set of questionnaires asked about learners’ strategy use in reading, writing, and reading-to-write. Twenty reading strategy items were adopted from Mokhtari and Reichard’s (2002) Survey of Reading Strategies (SORS). The original set included 30 items, but some repeated items were removed to reduce the number of items (e.g., Park, 2015).

For writing strategies, although various frameworks exist that delineate writing strategies, the current study used writing strategies based on Riazi (1997) with a minor modification. This was because constituents of the composing strategies found in Riazi’s study appeared to be comparable to Mokhtari and Reichard’s reading strategies. In total, 12

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2 The original questionnaire included more survey items, but through a preliminary factor analysis, the most highly loaded four to five items were chosen to represent the respective construct. Also, originally, separate constructs were assumed for attitudes towards reading and writing, respectively, but the factor analysis revealed that these items loaded on one factor. Thus, this factor was labeled to represent attitudes towards reading and writing, and the five most highly loaded items were selected and used for further analysis.
items were developed, but based on pilot results, only eight items were selected to represent writing strategies. Five strategies for reading-to-write were identified, based on the recursive nature of integrated writing as presented in Plakans’s (2008) integrated writing model. Questionnaires were presented in English, but participants were allowed to ask the meaning of a word or a sentence on the questionnaires.

3.2.3. Integrated reading-to-write task and reading comprehension

In an integrated reading-to-write task, participants first read two argumentative essays on “overpopulation and problems in world,” (Boyle & Warwick, 2014) which present different perspectives. The second article mainly refutes the first author’s opinions, so that a good understanding of the first reading was necessary to understand the second article. Students read the first article and completed comprehension questions, and then read the second passage and answered comprehension questions. Reading comprehension included various types of questions (i.e., identifying the main idea and author’s tone, inferencing, finding the meaning of a word), and scores on this test were used for learners’ reading comprehension scores. Participants were given twenty minutes to read the two passages and answer a total of 12 comprehension questions. The ratio of correct answers was converted to 100 percent. The highest possible score was 100. Upon completing the reading section, the participants were given writing instructions which asked students to summarize the second passage and provide their opinions on the issue. The writing task was in pencil-and-paper format, and participants were given 30 minutes to complete the task (Appendix).

Participants’ writing performance was assessed based on Plakans’s (2009) reading-to-write scoring rubric. As the current writing task asked participants to both summarize the source text and present their opinions on the issue provided, Plakans’s rubric assessing both aspects was considered appropriate. Two raters evaluated all students’ writings and assigned scores ranging from zero to five, and the raters reached 84% agreement. Discrepancies were resolved by averaging the scores, as all discrepancies fell within a one-point gap, except for one case, in which two-point difference was resolved by discussion.

4. RESULTS AND DISCUSSIONS

4.1. Relationships Among Predictor Variables

The first research question explores the relationships among eight predictor variables of integrated writing. Proficiency was also included to examine how proficiency is related to
other predictor variables (RQ1), but proficiency was excluded from the predictors for integrated writing (RQ2). This was because although the relationships between proficiency and other variables are deemed important, proficiency as overall assessment of learners’ ability essentially accounts for a large portion of integrated writing, a subset of language ability, so that its impact may obscure the effects of other related variables.

Table 1 presents a list of variables, descriptive statistics, and Cronbach’s alpha for the selected scales. Cronbach’s alphas show high internal consistency among survey items for their respective scale, except for reading-to-write strategies (α = .490). Mean scores of the survey items for the respective construct were calculated and used for further analysis.

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<th>α</th>
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<tbody>
<tr>
<td>C-test</td>
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<td>7.46</td>
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<tr>
<td>Reading comprehension</td>
<td>N.A.</td>
<td>74.98</td>
<td>12.95</td>
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<tr>
<td>Vocabulary size (n = 20)</td>
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<td>Reading strategy (n = 8)</td>
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<td>Writing strategy (n = 8)</td>
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<td>Reading-to-write strategies (n = 4)</td>
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<td>Attitudes towards reading and writing (n = 5)</td>
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<td>Reading anxiety (n = 4)</td>
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<tr>
<td>Writing anxiety (n = 4)</td>
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Table 2

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First, correlations between predictor variables were examined and the results appear in Table 2.

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Note. 1 = C-test; 2 = reading comprehension; 3 = vocabulary size; 4 = reading strategy; 5 = writing strategy; 6 = reading-to-write strategy; 7 = attitudes toward reading and writing; 8 = reading anxiety; 9 = writing anxiety

*p < 0.05, **p < 0.01

In the relationship between proficiency and other affective variables, proficiency was moderately related to ability variables such as reading comprehension (r = .443) and
vocabulary size ($r = .384$). These findings were somewhat expected, as proficiency as a general representation of one’s language skills encompasses domain-specific aspects of language ability including reading and vocabulary.

However, for the relationship between proficiency and strategy use, only reading-to-write strategies were found to be positively related to learners’ proficiency, but the magnitude of the relationship was small ($r = .344$). These results mean that although more proficient learners tend to use more reading-to-write strategies than less proficient learners, learner proficiency has no relationship with learners’ strategy use in either reading or writing. The current study’s findings run counter to previous studies that suggested general positive relationships between strategy use and proficiency (Park, 2015; Purpura, 1997). These contradictory findings are possibly due to methodological differences in measuring proficiency (e.g., TOEFL vs. C-test), the levels of participants, or learner goals and motivation. The current study’s findings of no relationships between proficiency and strategy use and between strategy use and reading comprehension suggest that strategy use is independent of one’s proficiency level, and even suggests the possibility that less proficient learners may also have developed their own strategies to compensate for their lack of language skills as skilled learners have developed their own (i.e., compensatory strategies) (e.g., Oxford, 1990). That is, from the study, it remains unclear whether proficiency determines the types of strategies adopted by students (e.g., Wi & Joh, 2010), but it clearly shows that proficiency is not necessarily related to the frequency of strategy use.

The findings, however, showed that proficiency was related to reading-to-write strategies, which are in line with other studies (Plakans, 2008; Spivey & King, 1989). A remaining question concerns why proficiency was only related to reading-to-write strategies, but not to other reading or writing strategies. This can be explained in connection with the claim that reading-to-write is suitable for learners with above-intermediate proficiency, who have developed certain levels of skills in reading and writing (e.g., Kirkland & Saunders, 1990). It seems that learners with low proficiency levels may not have been exposed to integrated writing much, so that they have not developed reading-to-write strategies, unlike their relatively developed reading or writing strategies.

Reading comprehension had a positive relationship with vocabulary size ($r = .351$), which is expected, in that reading comprehension subsumes vocabulary knowledge. Reading comprehension was also positively related to writing strategy use ($r = .320$), which can be interpreted in accordance with the general relationship between general language skills and strategy use, whose significance runs across linguistic domains. The magnitude of these relationships indicates that the strengths of the relationships were not strong. No correlations between proficiency and reading or writing strategy use make this explanation tenuous. Furthermore, vocabulary size was strongly and negatively associated with reading anxiety ($r = -.462$), which conforms the widely reported negative relationship between anxiety and
ability variables (e.g., Cheng et al., 1999; Horwitz, 2001; Horwitz et al., 1986).

For the relationships among learner strategies and affective variables, moderate positive correlations were found between reading strategies and other strategy variables such as writing strategies ($r = .540$) and reading-to-write strategies ($r = .552$). These findings suggest that in general those who use more strategies in one domain of language (i.e., reading) tend to use more strategies in other domains (i.e., writing skills, or reading-to-write strategies). It is also possible that strategy use is one of the general individual differences variables one develops and applies across language skills, allowing strategy transfer across different curricular domains (Shanahan, 1997). Nevertheless, this explanation requires empirical investigation (Pae, 2013).

Another significance lies the relationship between reading strategies and attitudes toward reading and writing ($r = .515$). Similarly, writing strategies were found to be positively associated with reading-to-write strategies ($r = .561$) and with attitudes towards reading and writing ($r = .370$). These findings conform to findings of previous research (e.g., Hashemian & Heidari, 2013), indicating that positive attitudes towards reading and writing in general can lead learners to develop and use more reading strategies and writing strategies. However, the strength of the relationship ranged from small to moderate, so that the generalization of these findings needs to be made with caution.

For the role of anxiety, different findings were observed depending on modality. Reading strategies were not significantly related to reading anxiety ($r = .036$, $p < .05$), but writing anxiety was negatively yet moderately related to writing strategies ($r = -.474$) and reading-to-write strategies ($r = -.362$). As anxiety has generally been reported to play a negative role in language development, these findings can also be viewed in light of the general negative role of anxiety in L2 development (Cheng et al., 1999; Horwitz, 2001; Horwitz et al., 1986). The finding that only writing anxiety, but not reading anxiety, was related to strategy variables can be explained in terms of learners’ learning history. Until recently, as Korean university entrance exams have traditionally focused on assessing learners’ reading comprehension, so that reading has received much more attention than writing in English education contexts. As a corollary, much of reading education has been centered around teaching and practicing strategies (e.g., main ideas, guessing, skimming, scanning), whereas writing strategies have not been at the forefront of Korean English education to date. In this sense, it is possible that learners’ reading strategies have developed, regardless of reading anxiety, while learners’ writing strategies have not been fully developed, and are affected by writing anxiety.

4.2. Predictors of Integrated Writing Task

The second research question investigates how the eight predictor variables explain
learners’ performance in the integrated writing task. A multiple regression analysis was conducted with the stepwise method, as there was no expected order of significance among predictor variables. Table 3 shows a summary of analysis of variance for regression models for predicting integrated writing scores.

### Table 3

<table>
<thead>
<tr>
<th>Model</th>
<th>Variable</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$\Delta R^2$</th>
<th>$\Delta F$</th>
<th>$B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RdCom</td>
<td>.255</td>
<td>N.A</td>
<td>.255</td>
<td>12.354</td>
<td>.454</td>
<td>.445</td>
<td>3.180</td>
<td>.003</td>
</tr>
<tr>
<td>2</td>
<td>Rd Anxiety</td>
<td>.342</td>
<td>.304</td>
<td>.086</td>
<td>4.598</td>
<td>-.414</td>
<td>-.300</td>
<td>-2.144</td>
<td>.039</td>
</tr>
</tbody>
</table>

Note: RdCom = reading comprehension, Rd Anxiety = reading anxiety

As Table 3 shows, among the eight predictor variables, only reading comprehension scores and L2 reading anxiety were found to be significant predictors for integrated writing scores. The two variables together accounted for 30.4% of variance of writing scores ($F(2, 35) = 9.093, p = .001, R^2 = .342, \text{adjusted } R^2 = .304$). First, reading only explained 25.5% of the variance of integrated writing scores ($F(1, 36) = 12.354, p = .001, R^2 = .255$). Next, the contribution of reading anxiety to writing scores was assessed after controlling for the reading comprehension scores. As Table 3 indicates, there was a significant $F$-value change ($p = .039$) when reading anxiety was entered as an additional variable after reading comprehension. This means that reading anxiety was also a significant predictor of integrated writing performance, explaining additional 8.6% of the variance of writing scores. No other variables were found to be significant predictors of writing scores.

Standardized beta coefficients were examined to determine whether it plays a positive or negative role in predicting writing scores. First, for reading comprehension, as the positive beta weights indicate, an increase in reading comprehension scores led to better writing scores in the integrated writing task ($\beta = .505, t = 3.515, p = .001$). In contrast, anxiety played a negative role in integrated writing scores, as the negative standardized beta weights ($\beta = -.300, t = -2.144, p = .039$) suggest.

The current study’s finding that reading comprehension of the source text is considerably important for integrated writing tasks is somewhat predictable. In integrated writing, especially one that requires a summary as the major component of their written arguments, displaying one’s argument without understanding source texts seems highly unlikely. Interestingly, however, is the amount of variance explained by reading comprehension. Considering many previous findings that showed that integrated writing is largely dependent on writing skills and reading plays a minor role (Brown et al., 1991; Risemberg, 1996; Trites & McGroaty, 2005; Watanabe, 2001), this study suggests that reading comprehension plays a crucial role in integrated writing performance.
The crucial role of reading comprehension in integrated writing found in the current study can be attributed to the degree of direct involvement of the source texts used in writing when assessing reading comprehension. In this study, reading comprehension assesses participants’ understanding of “the source text,” unlike past studies measuring general reading abilities. Although reading comprehension of a source text may also represent participants’ general reading skills, this assumption may not be true because reading comprehension is also affected by topic familiarity and background knowledge of a particular topic (e.g., Akyel & Erçetin, 2009). Similarly, the importance of source text understanding may vary depending on writing prompts or genre of writing. In the current study, a summary of the source text is required, and as a corollary, a comprehensive understanding of the source text became particularly important. However, other writing tasks that do not directly address summaries in the written texts (i.e., selecting pieces of information) may produce different findings on the role of reading comprehension of source texts. Furthermore, this large effect of reading comprehension could be due to the fact that writing ability variables were not included in the current study. If writing variables had been examined, the results might have been different.

Secondly, the finding that reading anxiety—but not writing anxiety—significantly predicted scores of integrated writing is somewhat unexpected, because previous studies showed that performance of integrated writing tasks is more likely to be affected by writing-related variables rather than reading-related variables (Brown et al., 1991; Risemberg, 1996; Trites & McGroaty, 2005; Watanabe, 2001). It is likely that L2 anxiety influenced L2 comprehension, which in turn affected L2 performance. However, it should be noted that the relationship between L2 anxiety and L2 comprehension was not significant in this study; this may make the findings somewhat questionable. At the same time, it should be remembered that L2 comprehension in the current study was based on the source texts on a particular topic, such that it may not be comprehensive enough to represent participants’ overall reading comprehension skills. In other words, the link between L2 anxiety and L2 comprehension failed to emerge due to the methodological constraints of reading comprehension in the current study. Taking all these into account, while potential explanations for the observed link between reading anxiety and integrated writing performance remain tentative, it is at best to assume the indirect influence of reading anxiety on integrated writing via L2 reading comprehension.

Third, the study also showed that strategy and attitudinal variables do not impact scores for integrated writing, except for reading anxiety, which contradict the findings of previous research (He, 2005; Li, 2014; Sheorey & Mokhtari, 2001). Indeed, previous studies have shown a relatively weak influence of affective and attitudinal variables on immediate language performance, yet their influence has generally been shown to be indirect, including via learner effort that appears throughout one’s language development (Cheng et
Therefore, while the findings showed no direct influence, this does not preclude their indirect relationship.

5. CONCLUSIONS AND IMPLICATIONS

The current study investigated how various L2 ability, strategy-related, and affective variables are related to each other, and further examined how these variables explain performance in integrated writing. The findings indicated generally weak relationships between ability-related variables and affective variables (e.g., proficiency and anxiety). The study also showed that reading comprehension and reading anxiety were two important predictors of performance in integrated writing tasks.

Some pedagogical implications can be drawn from the current study. The highlighted roles of reading in integrated writing call for increased attention and reading practices in order to enhance learners’ writing performance. Similarly, incorporation of various language skills across curricula seems desirable in ESL classrooms. For example, both reading and writing skills could be improved by engaging in reading practices in connection to writing. Pedagogically, it might be suggested that teachers focus on integrated writing tasks or text summaries to improve learners’ comprehension and to further develop their writing performance (e.g., Kim, 2013). Moreover, writing instruction that incorporates integrated writing should employ activities that also help enhance reading ability (e.g., Renandya, 2006). For example, providing pre-reading activities that support students’ understanding of the source materials will help them produce better pieces of writing in the integrated task. Finally, the finding of the negative role of reading anxiety in integrative writing suggests that teachers should consider learners’ emotions in assessing task performance, as one’s language performance is not a mere product of one’s ability, but can be affected by learners’ affect including anxiety. Teachers’ efforts should be made to lower learner anxiety and further to help students produce better writing.

Limitations of the present study should be acknowledged. Although vocabulary size as an ability factor was included, the current study focused on examining the roles of affective- and strategy-related variables in integrated writing, so general writing ability was not included as a predictor variable. However, it would be interesting to compare, in addition to these affective and strategy variables, the influence of writing ability and of reading ability in writing performance. In addition, while integrated writing tasks involve active reading skills such as selecting skills and evaluating skills (Spivey & King, 1989), reading skills included in the present study were only receptive in nature (i.e., reading comprehension and vocabulary). Therefore, future research could highlight such active reading skills as viewpoint recognition (i.e., the ability to notice contrasting views provided
in the source texts), and text engagement (i.e., the ability to appropriately use the information of source texts according to the purpose of writing) (cf., Shin & Ewert, 2015). Future research can also include other affective variables such as confidence and learning experience and can further examine the direct and indirect influences of these affective variables in integrated writing. To this end, the current study hopes to shed light on expanding our understanding of the nature and the predictors of integrative writing performance.

REFERENCES


Carver, R. (1997). Reading for one second, one minute, or one year from the perspective of the reading theory. Scientific Studies on Reading, 1, 3-43.


Cumming, A. (2013). Assessing integrated writing tasks for academic purposes:
Kim, Y. (2013). Students’ learning process and outcomes through text summary as a


Pae, T. I. (2013). Skill-based L2 anxieties revisited: Their intra-relations and the inter-


Shanahan, T. (1997). Reading-writing relationships, thematic units, inquiry learning: In
pursuit of effective integrated literacy instruction. The Reading Teacher, 51(1), 12-19.

**APPENDIX**

**Questionnaires**

L2 Reading Strategies
1. I have a purpose in mind when I read.
2. I stop from time to time and think about what I am reading.
3. I use context clues to help me better understand what I am reading.
4. I try to picture or visualize information to help remember what I read.
5. I critically analyze and evaluate the information presented in the text.
6. I go back and forth in the text to find relationships among ideas in it.
7. I try to guess what the content of the text is about when I read.
8. I check to see if my guesses about the text are right or wrong.
9. When I read, I guess the meaning of unknown words or phrases.
10. When I have hard time understanding contents, I translate from English into my native language.
11. I use reference materials (e.g., a dictionary) to help me understand what I read.
12. I take notes while reading to help me understand what I read.
13. I paraphrase (restate ideas in my own words) to better understand what I read.
14. I think about what I know to help me understand what I read.
15. I take an overall view of the text to see what it is about before reading it.
16. I read slowly and carefully to make sure I understand what I am reading.
17. I review the text first by noting its characteristics like length and organization.
18. I adjust my reading speed according to what I am reading.
19. When reading, I decide what to read closely and what to ignore.
20. I use tables, figures, and pictures in text to increase my understanding.
L2 Writing Strategies
1. When I write, I prefer to use various transition words to show my writing structure more clearly.
2. When I write, I prefer to look up the dictionary to choose better words.
3. When I write, I try to use words or sentences that are different from words used in speaking.
4. When I write, I frequently check whether my writing fits to the purpose of writing.
5. When I write, I check whether my sentences or organizations are clear to understand.
6. When I write, I try to recall and use knowledge on L2 composition I learned from English classes.
7. When I write, I think of potential audience (= reader) of my writing.
8. I prefer to have somebody else to read my writing before I submit it.

L2 Reading-to-Write Strategies
1. When I write an essay based on a reading, I try to find new words to express my understanding rather than using the same word shown in the reading.
2. When I write, I stop from time to time to read what I have read.
3. When I write, I prefer to read related materials.
4. When I write after reading, I frequently re-read the given materials even while writing.

Attitudes Towards Reading and Writing
1. I generally enjoy reading in English.
2. I believe reading a lot would help me improve my English skills.
3. After reading English materials, I generally feel successful and good.
4. If I practice writing more, this will benefit my future career.
5. I want to be a good at English writing.

L2 Reading Anxiety
1. I get anxious when I had to read a text that I am not familiar with.
2. I start to feel nervous when I encounter unfamiliar words when reading.
3. I feel anxious when time is set for reading, as I feel that my reading speed is really slow.
4. I would feel nervous, if I have to complete reading with time limit.
5. When I read, I feel worried that I miss important information from the text.

L2 Writing Anxiety
1. I have a terrible time organizing my ideas in an English composition course.
2. I’m not good at writing in English.
3. I never seem to be able to clearly write down my ideas in English
4. People seem to enjoy what I write in English. (reverse coding)
5. I don’t think I write in English as well as most other people.

Applicable levels: Tertiary

Minyoung Cho  
Department of English Language and Literature  
College of Liberal Arts, Korea University  
145 Anam-ro, Seongbuk-gu  
Seoul 02841, Korea  
Email: mycho27@korea.ac.kr

On-Soon Lee  
Department of English Language and Literature  
College of Liberal Arts, Korea University  
145 Anam-ro, Seongbuk-gu  
Seoul 02841, Korea  
Email: onsoon@gmail.com

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