

A Study on the Correlation between Self-Efficacy Beliefs and Strategies in English Reading*

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Shim, Jaewoo, Lee, Heechul & Jin, Seunghee. (2016). A Study on the Correlation between Self-Efficacy Beliefs and Strategies in English Reading. *The Linguistic Association of Korea Journal*, 24(2), 101-125. The purpose of the study was to investigate the relationship between reading strategies and reading self-efficacy beliefs. A total of 219 Korean EFL middle school students completed the questionnaires on L2 reading strategies and reading self-efficacy beliefs. Canonical correlation analysis was conducted to examine the correlation between two sets of dependent variables and independent variables. The dependent variable set consisted of Global, Support, and Problem-Solving Strategies underlying reading strategies, and the independent variables were Initiative, Effort, Performance, and Persistence within reading self-efficacy beliefs. The study results showed that 32.9% of the variance between the dependent variable set of reading strategies and independent variable set of reading self-efficacy beliefs was explained by the canonical variate. Pedagogical implications based on the findings are discussed.

Key Words: Reading Strategies, Reading Self-Efficacy beliefs, Reading Comprehension, Canonical correlation

1. Introduction

In research in the area of reading of second and foreign language (L2), it is

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generally acknowledged that reading comprehension is a complex process, requiring interaction of a variety of factors and skills. Much research was conducted to identify predictive variables to influence reading proficiency of L2 learners (Shin & Kim, 2012; Song, 2001; Sparks, Patton, Ganschow, & Humbach, 2012). Koda (2005) stated that reading comprehension should be discussed considering a variety of factors. Quite a few previous studies have shown that various first and second language linguistic knowledge and reading strategies contribute to L2 reading comprehension (Kim, 2015).

L2 learners' strategy use had been considered one of the important and influential predictors of reading comprehension across multiple studies (Barnett, 1988; Carrell, 1989, 1991). Basically strategies refer to learning techniques, behaviors, problem-solving, or study skills leading to more effective and efficient learning (Oxford, 2003), which are called learning strategies in the context of L2 learning. On the other hand, reading strategies concern about how readers conceive of a task, how they understand what they read, and what they do in the face of adversity in reading (Singhal, 2001).

According to Grabe (2009), reading is a strategic process in that a number of the skills and processes are needed on the part of the reader to anticipate text information, select key information, organize and mentally summarize information, monitor comprehension, repair comprehension breakdowns, and match comprehension output to reader goals. Therefore, one of the important goals for reading instruction should be to help students become more strategic readers (Hudson, 2007).

Researchers studying about reading comprehension and monitoring among skilled and unskilled readers have strongly admitted the importance of reading strategy because it distinguishes between skilled and unskilled readers (Mokhtari & Reichard, 2002). For example, Pressly and Afflerbach (1995) noted that strategic readers deal with the reading task with some general tendencies such as being aware of what they are reading, why they are reading, and using a set of strategies to handle potential problems or to monitor their understanding of reading text. However, unskilled readers tend to be limited in reading strategy use. They rarely monitor their own memory, comprehension, and other cognitive tasks (Flavell, 1979; Markman, 1979).

However, strategy training does not guarantee that unskilled readers will

continue to use the strategy when not required to do so any more (Paris, Cross, & Lipson, 1984; Raphael & McKinney, 1983, as cited in Schunk & Rice, 1987). To enhance their continued strategy use, researchers have suggested that teachers should provide students with strategy value information or information that strategy use can improve performance, and that this strategy value information affects learners' perceived self-efficacy (Schunk & Rice, 1987).

Self-efficacy refers to "personal beliefs about one's capabilities to organize and implement actions necessary to attain designated levels of performance" (Bandura, 1997). According to Bandura, self-efficacy beliefs influence one's choice of activities, effort expenditure, persistence, and achievement. Knowing about strategies can increase self-efficacy beliefs in using strategies. In turn, having self-efficacy beliefs combined with knowledge of strategies can provide learners with the "will" and the "ways" in the face of challenging tasks (McCrudden, Perkins, & Putney, 2005). Higher self-efficacy beliefs are related to the use of more active cognitive strategies (e.g., elaboration, paraphrasing) and willingness to develop skill proficiency (Schunk, 2003, as cited in McCrudden, Perkins, & Putney, 2005).

Despite the clearly detailed roles that reading strategies and reading self-efficacy beliefs seem to play in enhancing learners' reading proficiency, there remains a relatively limited amount of research examining the relationship between reading strategies and reading self-efficacy beliefs. Moreover, the limited extant studies dealing with reading strategies and reading self-efficacy beliefs lean too much toward first language reading studies.

Thus, there is still unclear relationship between reading strategy and self-efficacy in English as an Foreign language contexts. Even some research investigating the relationship between two constructs such as studies by Schunk and Rice (1987) or Burrows (2012) has been dedicated merely to investigating the effect of reading strategies on reading self-efficacy beliefs, rather than the effect of reading self-efficacy beliefs on the use of reading strategies.

Furthermore, the previous studies about reading self-efficacy beliefs used the total score of self-efficacy beliefs to investigate the its relationship with reading strategies without specifying the variable into subfactors. Compared to those studies, this research subdivided reading self-efficacy beliefs into four sub-variables to analyze how they influence three factors of reading strategies

simultaneously using canonical correlation analysis.

Therefore, the purpose of the present study was to examine the correlation between independent variable set of reading self-efficacy beliefs and the dependent variable set of reading strategies. The research question to be addressed in the study is as follow: Is there the correlation between a variable set of reading self-efficacy beliefs and a variable set of reading strategies?

2. Literature Review

2.1. Reading Strategies

What distinguishes proficient readers from non-proficient readers is the use of strategic reading (Janzen, 1996). Successful readers constantly change their behaviors to adjust to the text or task, and this is considered an important characteristic that good readers should hold (Ma, 2013). It is regarded as strategic competence, and it is defined as the “ability to use a variety of language strategies to communicate successfully,” (Aebersold & Field, 1997, p. 23).

According to Hudson (2007), a reading strategy can be defined as any interactive process for the purpose of obtaining meaning from connected text, and reading skills operate within the context of such reading strategies. Strategies operate to reduce demands on working memory by facilitating comprehension processing. Cohen (1986) also referred to reading strategies as mental processes that readers consciously choose to use in accomplishing reading tasks. To sum up various definitions from many reading researchers, reading strategies can be defined as the comprehension processes that readers select consciously and use actively with a particular purpose of constructing meaning in reading (Brantmeier, 2002; Block, 1986; Cohen & Macaro, 2007; Garner, 1987; Mokhtari & Reichard, 2002; Carrell, Gajdusek & Wise, 1998).

Researchers in reading strategy studies have utilized different strategy types to categorize reading strategies. The classification scheme used in the present study is based on Sheorey and Mokhtari (2001). They developed a survey called Survey of Reading Strategies (SORS) to measure reading strategy use. SORS

aims at discovering the reading strategies purportedly used by post-secondary students who are native and non-native speakers of English. It is based on the Metacognitive Awareness of Reading Strategies Inventory (MARSI) originally developed by Mokhtari (1998) as a tool to measure native English speaking students' awareness and use of reading strategies while reading. Sheorey and Mokhtari described each SORS category in brief as follows:

1. Metacognitive Strategies are those intentional, carefully planned techniques by which learners monitor or manage their reading. Such strategies include having a purpose in mind, previewing the text as to its length and organization, or using typographical aids and tables and figures (13 items). They are called global strategies.
2. Cognitive Strategies, also called problem solving strategies, are the actions and procedures readers use while working directly with the text. These are localized, focused techniques used when problems develop in understanding textual information. Examples of cognitive strategies include adjusting one's speed of reading when the material becomes difficult or easy, guessing the meaning of unknown words, and re-reading the text for improved comprehension (8 items).
3. Support Strategies are basically support mechanisms intended to aid the reader in comprehending the text such as using a dictionary, taking notes, or underlining or highlighting the text to better comprehend it (9 items). (Sheorey and Mokhtari, 2001, p. 6)

In the L2 literature, the studies on the relationship between L2 reading strategies use and reading comprehension have been conducted. Studies have shown that L2 learners' use of strategy and perception of their own reading process and strategy use (i.e., metacognitive awareness) are necessary components for successful reading comprehension (Barnett, 1988; Carrell, 1989; Ham, 2002; Song, 1999).

2.2 Reading Self-Efficacy Beliefs

Self-efficacy is defined as perceived abilities to learn or perform actions at

designated levels (Bandura, 1997). It has been shown to be a great impact on individuals' motivation, achievement, and self-regulation (Bandura, 1997; Multon, Brown, & Lent, 1991; Pajares, 1997; Stajkovic & Luthans, 1998, as cited in Schunk & Pajares, 2009).

Schunk (1987) stated that in education, self-efficacy has been shown to influence students' choices of activities, effort, persistence, interest, and achievement. Compared with students who are suspicious of their capabilities for learning or performing well, students who have high self-efficacy participate more readily, work harder, persist longer, show much more interest in learning, and achieve at higher levels (Bandura, 1997).

In educational contexts, teachers have been required to foster students' maximum reading capabilities by enhancing their motivations. To help teachers better address the role of affect in reading, Henk and Melnick (1995) introduced an important psychological construct, reading self-efficacy, which is one dimension of multi-faceted construct of motivation.

In addition, students' perceived self-efficacy has been reported to be highly predictive of performance in reading comprehension (Schunk & Rice, 1993; Shell, Murphy, & Bruning, 1989), writing (Graham & Harris, 1989; Pajares & Johnson, 1996; Schunk & Swartz, 1993a, 1993b; Shell et al., 1995, as cited in Smith, Wakely, Kruif, & Swartz, 2003). Perceived self-efficacy mediate performance in these areas, in large part, due to its impact on choice of activities, goal setting, strategy selection, task persistence, and help-seeking behaviors (Bandura, 1986; Schunk, 1991; Zimmerman & Martinez-Pons, 1990, as cited in Smith, Wakely, Kruif, & Swartz, 2003).

There are some studies conducted to examine the relation of self-efficacy beliefs in language, but only few can be found especially in a reading domain. Nevertheless, there are some notable studies which discussed the relationship between reading self-efficacy and reading proficiency. Casteel, Isom, and Jordan (2000) presented a practical plan for improving reading comprehension and reader self-efficacy through transactional strategies instruction. There are three phases of instruction describing and providing specific instructional strategies. They asserted that concerning reading comprehension, self-efficacy is an especially important construct, given that attention to strategy instruction alone is not sufficient to produce maximum reading growth.

Shaw (2008) examined the role of reading and writing self-efficacy beliefs in the reading and writing performance of high school students. Results revealed that reading self-efficacy beliefs significantly mediated the effects of high school English scores. Solheim (2011) examined whether perceived reading self-efficacy and reading task value predicted reading achievement scores in two different item formats in a sample of fifth-grade students. The study results demonstrated that reading self-efficacy was a significant positive predictor of reading comprehension scores.

2.3 Previous Research on Reading Strategies and Reading Self-Efficacy Beliefs

Self-efficacy beliefs also provide students with a sense of agency to motivate their learning by using self-regulatory processes such as goal setting, self-monitoring, self-evaluation, and learning strategy use (Zimmerman, 2000). With regard to learning strategy use, Zimmerman and Martinez-Pons (1990) studied with fifth, eighth, and eleventh grade students. They asked students to describe their use of 14 self-regulated learning strategies and to estimate their verbal and mathematical efficacy. The result showed that there was a considerable relation with 16 to 18% shared variance between efficacy beliefs and strategy use across the three grade levels of schooling.

The relationship between L2 reading strategies and reading self-efficacy beliefs have been examined in the L2 literature. Schunk and Rice (1987) conducted two experiments to investigate how providing less proficient readers with information that strategy use improves performance affected their self-efficacy and comprehension skills. The study found that multiple sources of strategy value information may be necessary to enhance self-efficacy and comprehension skills.

Schunk and Rice (1993) investigated the effects of strategy fading and progress feedback on self-efficacy and comprehension among students receiving remedial reading services. They found that reading self-efficacy was positively related to reading strategy use with post-test self-efficacy, explaining 23% of the variance in post-test skills.

McCrudden, Perkins and Putney (2005) examined the effect of reading

strategy instruction on self-efficacy, interest, and comprehension of fourth graders from at-risk environments. The results indicated that self-efficacy and interest increased while comprehension remained stable. The results suggest that explicit strategy instruction and practical activities can be integrated with existing classroom curriculum and can affect student motivation in a relatively short period of time.

Tobing (2013) investigated the relationship between reading strategies, reading self-efficacy beliefs and the reading comprehension of high school students in Indonesia. The results demonstrated that the use of reading strategy use had a significant relationship with reading comprehension and that self-efficacy had a significant relationship with reading comprehension, contributing 20% to the prediction of reading comprehension.

In Korean EFL setting, there has been only little research to investigate the relationship between reading strategies and reading self-efficacy. For example, Jung (2015) examined the impact of reading strategies, self-efficacy, motivation, and prior knowledge on English reading comprehension. The results showed that all four variables had a positive impact on English reading comprehension. Particularly, reading strategy has a strongest impact on English reading comprehension followed by prior knowledge.

3. Research Design

3.1. Participants

219 third grade students of middle school in Jeonju, Korea were the participants in this study. They had started learning English from the third grade of elementary school, and thus they had been studying English as a compulsory school subject for at least eight years through their elementary and middle school education. Their English level is considered to be relatively high because the average scores of their English test in 2015 State-Run Achievement Test was above the average of the total scores. Basically, most of the studies exploring reading strategies or self-efficacy beliefs are conducted using a self-report measure. Thus, participants of those studies are expected to have a

certain level of metacognitive ability to perceive their use of the strategies and self-efficacy beliefs. Because students' with too low level of English tend not to know whether they use reading strategies or not (Carrell, 1989), this study sampled students with mid-to-high level of English proficiency. Demographically, about 51.8% (N=113) were male and 48.2% (N=106) were female. They take four hours of English lesson per week for 45 minutes per class.

3.2 Instruments

The modified version of the Reader Self-Perception Scale (RSPS) (Henk & Melnick, 1995) was chosen to assess students' perceptions of reading self-efficacy. The Survey of Reading Strategies (SORS) was used in this study to measure the students' reading strategies (Sheorey and Mokhtari, 2001). Also, the final items in those questionnaires were confirmed by a confirmatory factor analysis using the AMOS 23 program. For example, if an item had a low factor loading or large modification index, it was excluded from the subscales. A total of 17 items from 24 of Survey of Reading Self-Efficacy remained in the model of reading self-efficacy beliefs, and 19 items from 30 items of SORS remained in the model of reading strategies.

Therefore, reading self-efficacy scales gained a 17 item version of scale with four subscales: 6 items for willingness to expend effort in initiating the behavior; 'Initiative' (e.g., "When I begin to read, I can understand most of a reading passage"); 3 items for willingness to expend effort in completing the behavior, 'Effort' (e.g., "I keep trying to understand a reading passage until I can understand it even though it is complicated to comprehend"); 5 items for the expected efficacy to reading performance, 'Performance' (e.g., "I am confident about my comprehending while reading a text"); and 3 items for persistence in the face of adversity, 'Persistence' (e.g., "I can overcome difficulties however hard it is to understand").

Reading strategy scales obtained a 19 items with three subscales: 8 Global Strategy items (e.g., "I have a purpose in mind when reading"), 3 Support Strategy items (e.g., "I underline or circle to remember information"), and 8 Problem-Solving items (e.g., "When text becomes difficult, I re-read to increase my understanding").

Both models fit the data well. The χ^2 was significant in both models (reading self-efficacy model, χ^2 (df = 113) = 255.672, $p < 0.01$); reading strategy model, χ^2 (df = 321) = 276.804, $p < 0.01$). Other fit indices showed good fits for both models. Comparative Fit index was high for both models (CFI = 0.927 and 0.928 respectively) as was Incremental Fit Index (IFI = 0.928 for both models). The Root Mean Square Error of Approximation also suggested a good fit to the data (RMSEA = 0.076 and 0.064, respectively). Non-normal Fit Index and Normed Fit Index confirmed these good fits (NNFI = 0.902 and 0.915, NFI = 0.880 and 0.858).

To assess the internal consistency of the subscales, scale (construct) reliability was computed for each subscale. All values of scale reliabilities for both models were high enough (> 0.7). Wang (2012) have recommended scale reliability should be above 0.7 (0.6~0.7 acceptable). Both models satisfied this recommendation as a reliable scale.

3.3 Data analysis

3.3.1 Data Collection

Data collection was carried out in a regular English class by the researcher in the middle of the second semester in 2015. Participants were informed of the purpose of the study and asked to complete an informed consent and to answer two kinds of questionnaires to measure reading self-efficacy beliefs and reading strategies.

At first, students were asked to read a narrative reading passage as the material to test which reading strategies were used while performing the reading task. After completing the reading task, students were asked to complete the revised version of SORS to investigate their strategy use. They circled the number which best described their comprehension, behavior or thoughts while reading.

Then, students were asked to answer the questionnaire for reading self-efficacy beliefs. Students were also provided with a brief explanation on how they should complete the reading self-efficacy questionnaire and were asked to circle the number best describing their perceived capability about

reading. The entire data collection process took approximately 30 minutes. 219 questionnaires from all participants were collected.

3.3.2 Data Analysis

A canonical correlation analysis was conducted to investigate if there was an overall relationship between two sets of variables from reading self-efficacy beliefs and reading strategies. Canonical correlation analysis was chosen because it allows the researcher to examine the relationship between sets of multiple criterion (dependent) and multiple predictor (independent) variables. That is, multiple regression analysis predicts a single dependent variable from a set of multiple independent variables, while canonical correlation analysis predicts multiple dependent variables from multiple independent variables at the same time. SPSS 20 program was also utilized for canonical correlation analysis (Hair, Anderson, Tatham, Babin & Black, 2006). Table 1 illustrates the predictor and criterion variables used in the canonical correlation analysis of this study.

Table 1. Variable Sets for Canonical Correlation

Predictor Variables (Reading Self-Efficacy Beliefs)	Criterion Variables (Reading Strategy)
Initiative	Global Strategy
Effort	Support Strategy
Performance	Problem-Solving Strategy
Persistence	

4. Results

This study examined the multivariate relationships between two sets of variables from reading self-efficacy beliefs and reading strategies using canonical correlation analysis. Descriptive statistics were conducted to explore and analyze the distribution of each variable in the study. The reading self-efficacy variables ranking from highest to lowest were Initiative ($M=19.15$, $SD=4.55$), Performance ($M=10.29$, $SD=3.97$), Effort ($M=10.28$, $SD=2.47$), and

Persistence ($M=10.04$, $SD=2.0$). Table 2 provides the descriptive statistics for the variables. In reading strategy variables, the results ranking from highest to lowest were Problem-Solving Strategy ($M=27.22$, $SD=5.95$), Global Strategy ($M=23.32$, $SD=5.19$), and Support Strategy ($M=7.93$, $SD=2.52$).

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Independent Variables					
Initiative	219	6.00	29.00	19.1507	4.55044
Effort	219	3.00	15.00	10.2877	2.47082
Perform	219	5.00	24.00	15.2192	3.97554
Persistence	219	3.00	15.00	10.0365	1.99966
Dependent Variables		3.00	15.00	10.2877	2.47082
GLO	219	7.00	35.00	23.3242	5.19173
SUP	219	3.00	14.00	7.9315	2.51780
PRO	219	9.00	40.00	27.2192	5.95928
Valid N (listwise)	219				

* GLO is global strategies, SUP is support strategies, and PRO is problem-solving strategies.

Table 3 shows the bivariate intercorrelation matrix for all variables used in the canonical correlation analysis. As shown in table 3, there are statistically significant multiple correlations that are all positive. The largest positive correlation was between Performance and Problem-Solving Strategies (0.601). The lowest correlation was noted between the Effort and Support Strategy variables (0.345), which was a moderate correlation. In addition, it should be noted that there were no negative indices. This suggests that the higher scores on reading self-efficacy beliefs were indicative of more reading strategy use.

Table 3. Bivariate Correlations

		INI	EFF	PERF	PR SIS	GLO	SUP	PRO
INI	Pearson Correlation	1						
	Sig.(2-tailed)							
	N	219						
EFF	Pearson Correlation	.804**	1					
	Sig.(2-tailed)	.000						
	N	219	219					
PERF	Pearson Correlation	.849**	.763**	1				
	Sig.(2-tailed)	.000	.000					
	N	219	219	219				
PR SIS	Pearson Correlation	.753**	.657**	.691**	1			
	Sig.(2-tailed)	.000	.000	.000				
	N	219	219	219	219			
GLO	Pearson Correlation	.555**	.518**	.595**	.492**	1		
	Sig.(2-tailed)	.000	.000	.000	.000			
	N	219	219	219	219	219		
SUP	Pearson Correlation	.406**	.345**	.439**	.389**	.577**	1	
	Sig.(2-tailed)	.000	.000	.000	.000	.000		
	N	219	219	219	219	219	219	
PRO	Pearson Correlation	.595**	.551**	.601**	.547**	.814**	.545**	1
	Sig.(2-tailed)	.000	.000	.000	.000	.000	.000	
	N	219	219	219	219	219	219	219

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

Canonical correlation analysis derives one or more canonical functions. The maximum number of canonical variates (functions) equals the number of variables in the smallest data set. As shown in table 4, three canonical functions were extracted. The canonical correlation coefficient (Rc) of function 1 was 0.661 (Rc²=0.437) with a Wilk's λ of 0.550, Chi-square of 128.123, DF of 12.0, and p=.00. The second canonical correlation coefficient was .119 (Rc²=0.14) with a Wilk's λ of .997, Chi-square of 5.011, DF of 6.00, and p=.542. The third canonical correlation coefficient was 0.095 (Rc²=0.009) with a Wilk's λ of 0.991, Chi-square of 1.943, DF of 2.00, and p=.378. The results indicated that the first function was

the only significant function in this canonical correlation model and that the shared variance out of the first function was 43.7%.

In other words, there was the shared variance of 43.7% between the independent canonical variate scores derived from the independent variable set (i.e., Initiative, Effort, Performance, Persistence) and the dependent canonical variate scores derived from the dependent variable set (i.e., Global, Support, Problem-Solving). Subsequently, other variances, 1.4% and 0.9% explained by the other two functions were ignored because of their non-significances.

Table 4. Canonical Correlations

Canonical Function	Canonical Correlation	Wilk's	Chi-SQ	DF	Sig.
1	.661	.550	128.128	12.000	.000 *
2	.119	.977	5.011	6.000	.542
3	.095	.991	1.943	2.000	.378

* $p < 0.05$

Table 5 provides the summary of canonical correlation analysis. In particular, Canonical Variate 1, which is the only statistically significant variate, was interpreted. Standardized canonical weights that are shown in the 'b' column are used to form the linear combinations of the independent variable and dependent variable sets. In the statistically significant independent variate 1, Performance was the most important variable ($b = -.522$), Persistence ($b = .253$) the second most important, Initiative ($b = -.183$) the third, and Effort ($b = -1.54$) the least important. In the statistically significant dependent variable variate, Problem-Solving strategy was the most important variable ($b = -.595$), Global Strategy the second most important ($b = -.349$), and Support Strategy the least important variable ($b = -.154$).

Structure coefficients were also examined to identify or name the Canonical Variate 1. In Table 5, coefficients in 's' column are the structure coefficients. They are interpreted like factor loadings in common factor analysis, and the squared structure coefficients, shown in the column of 's-squared' reflect the variance that the observed variable shares with the canonical variate (Hair, Black, Babin, Anderson, & Tatham, 2006, p. 337). The rule of thumb is that

structure coefficients equal to or greater than 0.30 be treated as meaningful in each variate.

As shown in Table 5, independent (predictor) variables displayed high correlations with the independent Canonical Variate 1, -0.928, -0.850, -0.958 and -0.842, respectively. These high loadings indicated that the independent Canonical Variate 1 carried information about each of the original independent variables. The percentage of the variance for each of the variables explained by the independent Canonical Variate 1 was calculated by squaring these numbers. The results showed that 86.0% of the variance in Initiative, 72.0% of the variance in Effort, 92.0% of the variance in Performance, and 71.0% of the variance in Persistence were explained by the independent Canonical Variate 1.

As for the dependent (criterion) variables' structure coefficients, it was observed that each dependent variables loaded high on the dependent Canonical Variate 1, -.922, -.677, and -.696, respectively. These high loadings indicated that the dependent Canonical variate carried information about each dependent variable. Also it was found that the variance in Global, Problem-Solving, and Support variables were explained by the dependent Canonical Variate 1, 85.0%, 48.0%, and 46.0%, respectively.

In addition, PV or proportion of total variance of the dependent variables extracted by all of the canonical variates were calculated as a part of equation in calculating the total redundancy. This PV of .747 was multiplied by $Rc2(1)$ of 0.437 to yield total redundancy of .329, which is similar to the average of the squared multiple correlation coefficients for each of the dependent variables with all of the variables in the independent variable set. As a result, 32.9% of the variance of the dependent variable set (reading strategies) was explained by the independent variate (reading self-efficacy beliefs).

Table 5. Summary of Canonical Correlation Analysis

Variables	Canonical			Canonical		Canonical	
	Variate 1			Variate 2		Variate 3	
	b	s	s ²	b	s	b	s
For Dependent Variable Set							
GLO	-.349	-.922	0.85	1.433	.317	-1.012	-.220
SUP	-.154	-.679	0.46	-.368	.306	1.174	.063
PRO	-.595	-.696	0.48	-1.632	-.265	.142	-.004
PV		.747			.008		.165
	R _c ² (1)=0.437			R _c ² (2)=0.14		R _c ² (3)=0.009	
For Independent Variable Set							
INI	-.183	-.928	0.86	-.355	-.103	-.349	-.116
EFF	-.138	-.850	0.72	-.724	-.246	-1.215	-.432
PERF	-.522	-.958	0.92	1.694	.284	.381	-.029
PR SIS	-.253	-.842	0.71	-.804	-.377	1.177	.379
PV		.802			.074		.086
Rd		.327			.001		.001
Total Rd							.329

* b=standardized canonical coefficients (weights); s=structure coefficients; s²=squared structure coefficients; PV=proportion of variance explained; Rd=redundancy; Total Rd=total redundancy.

4. Discussions and Conclusion

Canonical correlation analysis was conducted to examine the correlation between two sets of variables of reading self-efficacy beliefs and reading strategies. The first set of independent variables included Initiative, Effort, Performance and Persistence, and the second set of dependent variables contained Global, Support, and Problem-Solving Strategies. Specifically, in independent variable set, Initiative refers to willingness to expend effort in initiating reading task, and Efforts refers to willingness to expend effort in completing the reading task. Also, Performance is regarded as the expected efficacy to reading performance, and Persistence represents persistence in the face of adversity (Henk & Melnick, 1995).

As for the dependent variable set of reading strategies, Global Strategies refer to carefully planned techniques by which learners monitor or manage their

reading. Support Strategies are the actions and procedures readers employ while working directly with the text. Problem-Solving Strategies are considered support mechanisms to help readers to comprehend the text.

Canonical analysis of two variable sets yielded the total redundancy of 0.329, which indicated 32.9% of the variance of the dependent variable set (reading strategies) was explained by the independent variate (reading self-efficacy beliefs). It means that students who are highly efficacious in reading comprehension tend to use more reading strategies.

These results of the current study is consistent with those of previous research on the relationship between reading self-efficacy beliefs and reading strategies. Schunk and Rice (1993) studied the effects of strategy fading and progress feedback on self-efficacy and comprehension of students receiving remedial reading services. The result showed that reading self-efficacy had positive relationship with reading strategy use. Similarly, Zimmerman and Martinex-Pons (1990) found that self-efficacy beliefs also motivate students' use of learning strategies, and there was a considerable relationship (16 to 18% share variance) between efficacy beliefs and strategy use.

From this view, it can be drawn that the higher level of reading self-efficacy belief learners have, the more strategies they use, and thus reading self-efficacy beliefs are an essential factor to enhance students' reading strategy use. In the same vein, according to Pajares (2003), most difficulties that students suffer from in learning tend to result from students' lack of self-efficacy beliefs. The same may be true of EFL reading contexts. Students' low reading self-efficacy belief can be the reason for their low levels of reading motivation, participation, performance, and achievement.

Therefore, teachers should pay more attention to the effective ways to enhance students' self-efficacy beliefs, not just attributing their reading failure to their lack of knowledge about reading and adequate strategies for performing their reading tasks. That is, in addition to providing effective strategic reading instruction that helps students to become strategic and metacognitive readers, teachers should make efforts to help students develop high levels of reading self-efficacy beliefs.

One possible way to raise reading self-efficacy beliefs is to develop students' self-regulatory competence. In this study, Performance, which was one of the

constructs of reading self-efficacy beliefs, was reported to make the most contribution to its canonical variate. This construct is similar to the concept of self-reaction asserted by Bandura (1986) in social cognitive theory.

According to Bandura, self-reaction involves making evaluative responses to judgments of one's performance and also includes student's beliefs about their progress. Subsequently, the enhancement of self-reaction may be achieved through modeling. Modeling is the important source to convey self-regulatory skills and to develop self-efficacy for using these skills effectively on their own. In educational settings, observing similar peers succeed can improve observers' efficacy and motivate them to try the task because they may believe that if other peers can succeed they can do as well (Schunk, 1987).

Although adult models can teach students self-regulatory skills, students' self-efficacy beliefs for learning may be assisted better by observing similar peers (Schunk & Zimmerman, 1997). For this purpose, teachers are required to conduct small group student-centered instruction in EFL reading classrooms. It can provide students with the opportunities to develop self-regulatory competence by playing their own roles in small cooperative groups and feeling sense of achievement as well as to promote their self-efficacy beliefs by modeling peers' performance.

In conclusion, the goal of English teachers with regard to students' reading comprehension should be to help students maintain sufficiently high but generally accurate self-efficacy beliefs about their reading performance. However, most studies of reading instructional method with remedial students have focused narrowly on reading strategies. Little is research addressing those students' motivational and affective characteristics such as reading self-efficacy beliefs leading to more reading strategy use. Therefore, the results from this study may shed some lights on how reading strategies are affected by reading self-efficacy beliefs of students.

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Appendix 1.

Reading Strategy Questionnaire

1. 전혀 그렇지 않다, 2. 그렇지 않다, 3. 보통이다, 4. 그렇다, 5. 매우 그렇다

1	마음속에 목적을 가지고 있었다.	1	2	3	4	5
2	읽기 전에 어떤 내용의 글인지 알아보기 위해 쪽 훑어 보았다.	1	2	3	4	5
3	지문의 이해를 돕기 위해 내가 이미 알고 있는 지식을 연관시켰다.	1	2	3	4	5
4	지문의 길이와 구성을 먼저 파악하였다.	1	2	3	4	5
5	내용에 따라 자세히 읽을 것인지 무시하고 지나갈 것인지 파악하며 읽었다.	1	2	3	4	5
6	지문의 내용이 나의 독해 목적에 합당한지 생각해보았다.	1	2	3	4	5
7	지문의 이해를 돕기 위해 문맥상의 단서를 사용하였다.	1	2	3	4	5
8	지문의 내용이 무엇에 관한 것인지 추측해보았다.	1	2	3	4	5
9	지문에 대해 내가 추측한 것이 맞았는지 확인하였다.	1	2	3	4	5
10	지문 속에 새로운 정보가 나왔을 때 잘 이해하고 있는지 점검하였다.	1	2	3	4	5
11	내용이 어려워 질 때 소리 내어 읽어보았다.	1	2	3	4	5
12	밑줄을 치거나 동그라미 등을 표시하며 내용을 기억하려고 하였다.	1	2	3	4	5
13	지문의 이해를 돕기 위해 메모하며 읽었다.	1	2	3	4	5
14	지문의 이해를 돕기 위해 지문의 내용을 다른 말로 바꾸거나 요약해보았다.	1	2	3	4	5
15	지문 내용간의 관계를 파악하기 위해 지문의 앞뒤를 살펴 피며 읽었다.	1	2	3	4	5
16	의문이 나는 부분을 나에게 질문해 보았다.	1	2	3	4	5

17	지문을 읽을 때 우리말로 번역하며 읽었다.	1	2	3	4	5
18	지문을 우리말과 영어 두 가지 언어로 생각하면서 읽었다.	1	2	3	4	5
19	흥미 있고 중요하다고 생각하는 개념에 밑줄을 쳤다.	1	2	3	4	5
20	집중력을 잃었을 때 집중하려고 노력하였다.	1	2	3	4	5
21	지문내용을 정확하게 이해하기위해 천천히 주의 깊게 읽었다.	1	2	3	4	5
22	지문이 어려워질 경우 더 집중해서 읽었다.	1	2	3	4	5
23	독해 중 가끔 멈추고 읽고 있는 내용에 대해 생각해보았다.	1	2	3	4	5
24	지문이 어려워지면 이해를 돕기 위해 다시 읽었다.	1	2	3	4	5
25	모르는 단어나 표현의 의미를 문맥 속에서 추측하려고 노력했다.	1	2	3	4	5
26	읽은 내용을 잘 기억하기위해 지문의 정보를 머릿속에 그리거나 시각화 하였다.	1	2	3	4	5
27	읽고 있는 내용에 따라 독해 속도나 방법들을 조절하며 읽었다.	1	2	3	4	5
28	나는 글을 읽을 때 이해를 돕기 위해 표, 그래프, 그림 등을 사용한다.	1	2	3	4	5
29	나는 중요한 내용을 찾기 위해 볼드나 이탤릭 같은 도구를 이용한다.	1	2	3	4	5
30	내가 읽은 내용을 기억하기위해 내용을 그림이나 표 등으로 시각화 시키려고 노력한다.	1	2	3	4	5

Appendix 2.

Reading Self-Efficacy Beliefs Questionnaire

1. 전혀 그렇지 않다, 2. 그렇지 않다, 3. 보통이다, 4. 그렇다, 5. 매우 그렇다

1	나는 영어 독해 학습이 시작되면 대부분의 내용을 잘 학습할 수 있다고 생각한다.	1	2	3	4	5
2	나는 영어 읽기 내용이 복잡하더라도 이해 할 때 까지 계속해서 노력한다.	1	2	3	4	5
3	나는 영어 읽기 학습을 시작하면 계획한 만큼은 꼭 끝을 내려고 노력한다.	1	2	3	4	5
4	나는 어렵다고 생각되는 내용이라도 읽고 이해할 수 있는 자신이 있다.	1	2	3	4	5
5	나는 영어 읽기 학습을 할 때 내가 세운 목표를 이룰 때 까지 끝까지 노력한다.	1	2	3	4	5

6	나는 별로 학습하고 싶지 않는 내용이라도 그것을 끝까지 읽는다.	1	2	3	4	5
7	나는 영어 독해를 잘 해야겠다고 일단 마음먹으면 즉시 시작한다.	1	2	3	4	5
8	나는 영어 읽기 학습을 할 때 대부분의 내용에서 자신감이 있다.	1	2	3	4	5
9	나는 영어 읽기 학습을 할 때 대체로 언제 어떻게 공부하면 효과적인지 잘 알고 있다.	1	2	3	4	5
10	내가 이용하는 영어 읽기 학습 방법은 대부분 효과가 있다고 생각한다.	1	2	3	4	5
11	내가 노력만 한다면 어려운 내용도 영어 독해를 잘 할 수 있다고 믿는다.	1	2	3	4	5
12	나는 영어 읽기 학습을 할 때, 내가 어려움을 느끼는 이유를 대개는 알 수 있다.	1	2	3	4	5
13	나는 영어 읽기 학습을 할 때 아무리 어려운 상황에 생겨도 그런 상황을 잘 이겨낸다.	1	2	3	4	5
14	나는 새로운 영어 읽기 학습내용이 나오면 대개는 이해를 빠르게 하는 편이다.	1	2	3	4	5
15	나는 새로운 영어 읽기 내용을 배울 때 처음에 어려움을 느끼면 더욱 흥미가 생기는 편이다.	1	2	3	4	5
16	나는 복잡한 영어 읽기 학습 내용을 공부할 때면 대개 어떻게 공부를 해야 할지 스스로 정한다.	1	2	3	4	5
17	나는 공부할 때, 어려운 영어 독해 내용이 나오면 반드시 이해하고 넘어가고자 노력한다.	1	2	3	4	5
18	나는 영어 읽기 학습을 잘 할 수 있다고 생각한다.	1	2	3	4	5
19	나는 새로 배운 영어 읽기 학습 내용이 어렵다고 생각되면 이해할 때까지 노력을 계속한다.	1	2	3	4	5
20	나는 다른 사람의 도움 없이도 스스로 영어 읽기 학습을 시작할 수 있다.	1	2	3	4	5
21	나는 지금보다 앞으로 영어 읽기 성적을 더 올릴 수 있다고 생각한다.	1	2	3	4	5
22	나는 영어 읽기를 할 때 성적을 올리는 방법을 계속적으로 시도하려고 노력한다.	1	2	3	4	5
23	나는 영어 읽기 성적을 올리는 방법에 대해 잘 알고 있다고 생각한다.	1	2	3	4	5
24	내가 영어 읽기에서 나쁜 성적을 받더라도 남의 탓으로 돌리지 않는다.	1	2	3	4	5

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