Exploring the Relationship between EFL Proficiency Level and Reading Strategy Use

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Abstract

When students in Taiwan enter into higher education, the reading demands placed upon them often lead them to select ineffective and inefficient strategies with little strategic intent. To investigate how reading strategy use affects the development of Taiwanese EFL learners' reading comprehension, the aim of this study was to investigate the relationship and differences of four reading strategy uses (cognitive, metacognitive, compensatory, and testing strategies) between EFL readers with different proficiency levels on their reading outcomes. Based on the purpose of the present study, three main research questions were addressed: (1) What is the most frequent use of reading strategy reported by individual students? (2) Is there any significant relationship between students' self-reported reading strategy use and English reading performance? (3) What is the difference existing between EFL proficiency level and reading strategy use? Results of the study showed that students frequently employed various reading strategies in English reading process. Readers with the high proficiency level particularly used more testing strategies than readers with the low proficiency level to reach a higher level of reading comprehension performance. Implications of these findings for implementing effective reading strategy instruction in a Taiwanese EFL context are discussed.

Keywords: Cognitive strategy; metacognitive strategy; compensatory strategy; testing strategy; EFL reading comprehension

Introduction

Recent research on the subject of reading has shown that reading exists as a complex cognitive activity indispensable for adequate functioning and for obtaining information in contemporary society (Alfassi, 2004; Zhang, 1993). To enter any literate society, students must know how to learn from reading in order to succeed. However, when students in Taiwan enter higher education for the reading demands that are placed upon them, they often select ineffective and inefficient strategies with little strategic intent (Ko, 2002). Cheng (2000) and Feng and Mokhtari (1998) found that when reading easy English and Chinese texts, Taiwanese students' use of reading strategies is similar; but when they are presented with difficult Chinese and English texts, their use of strategies in reading the Chinese text is more meaning-focused or global; in contrast, when they read the English text, they employ more low-level or local processing strategies.

Many Taiwanese EFL students assume that the intended author's meaning lies within the printed words, leaving the reading process no more than obtaining meaning from the words on the page. EFL students in Taiwan approach reading passively, relying heavily on the use of a bilingual dictionary, thereby spending countless hours laboring over direct sentence-by-sentence translations. Despite all the efforts made, students' reading comprehension remains poor. Investigations of reading strategies in second/foreign language acquisition have further identified the reading strategy use by effective and poor readers (Chamot, 2005; Chamot & Kupper, 1989; Kang, 1997). For example, effective EFL/ESL readers know how to use a variety of appropriate strategies to reach their learning goals; while less effective readers not only use strategies less frequently, but often do not employ the appropriate strategies for the tasks.

To enhance the reading comprehension ability in English, Alfassi (2004) stated that students should "understand the meaning of text, critically evaluate the message, remember the content, and apply the new-found knowledge flexibly" (p. 171). Using reading strategies appropriately may be of great help to non-native readers because it can serve as an effective way of overcoming language deficiency and obtaining better reading achievement on language proficiency tests (Zhang, 2008). As EFL educators, it is essential to explore how Taiwanese students learn to read in English and understand more the problems they have encountered in reading strategy use, so that teachers can help them acquire better strategies. To get a clear picture regarding different proficiency-level readers' use of specific strategies, this study employed four major reading strategies including cognitive, metacognitive, compensatory, and testing strategies, to analyze which strategy use might result in a higher level of reading comprehension.

The reason for selecting these four strategies was that in the instructor's (who was also the researcher) teaching experiences, they were the most important learning strategies resulting in successful reading. Based on the purpose of the present study, three main research questions were addressed as follows:

1. What is the most frequent use of reading strategy reported by individual students?
2. Is there any significant relationship between students' self-reported reading strategy use and English reading performance?
3. What is the difference existing between EFL proficiency level and reading strategy use?

Literature Review

Reading Strategy Use

Reading is an interactive process combining top-down and bottom-up processing (Barnett, 1989); as a result, it is very important for students to use appropriate reading strategies to increase their comprehension. According to Barnett, the term "strategy means the mental operations involved when readers purposefully approach a text to make sense of what they read" (p. 66). In other words, reading comprehension requires the integration and application of multiple strategies or skills. Those strategies involve memory, cognitive, compensation, metacognitive, affective, social, and test-taking strategies (Chamot, 2005; Oxford, 1990, 1996; Zhang, 1993). For the research purpose, cognitive, metacognitive, compensation, and testing strategies were selected and described as below:

Cognitive strategy. According to Chamot and Kupper (1989), cognitive strategies are approaches "in which learners work with and manipulate the task materials themselves, moving towards task completion" (p. 14). Examples of cognitive strategies include the skills of predicting based on prior knowledge, analyzing text organization by looking for specific patterns, self-questioning, making a summary, taking notes by writing down the main idea or specific points, translating, inferencing, and transferring (Chamot & Kupper, 1989; Oxford, 1990). Weinstein and Mayer (1986) characterized those cognitive learning strategies into three main sets: rehearsal, elaboration, and organizational strategies. Rehearsal strategies involve underlining the text, saying a word or phrase aloud, or using a mnemonic. Elaboration strategies include paraphrasing or summarizing the material to be learned, creating analogies, generative note-taking, explaining ideas to others, asking and answering questions about the text. The other type of deeper processing strategy, organizational, includes behaviors such as selecting the main idea from text, outlining the text to be learned, and using a variety of specific techniques for selecting and organizing the ideas in the material. According to Weinstein and Mayer, all of these organizational strategies can be used to test and confirm the accuracy of learner's deeper understanding of the text.

Metacognitive strategy. Students' metacognitive knowledge and use of metacognitive strategies can have an important influence upon their achievement. According to Chamot and Kupper (1989) and Wenden (1998), metacognitve strategies involve thinking about the learning process, planning for learning, monitoring the learning task, and evaluating how well one has learned. Oxford (1990) proposed that metacognitve strategies include three strategy sets: Centering, arranging and planning, as well as evaluating the learning. A similar model of metacognitve strategies proposed by Pintrich (1999) included three general types of strategies: Planning, monitoring, and regulating. Planning activities include setting goals for studying, skimming a text before reading, generating questions before reading a text, etc. Monitoring strategy is an essential aspect of self-regulated learning. Weinstein and Mayer (1986) regard all metacognitive activities as partly the monitoring of comprehension where students check their understanding against some self-set goals. Monitoring activities include tracking of attention while reading a text, self-testing through the use of questions about the text material to check for understanding, etc (Pintrich, 1999). The other type of metacognitive strategies is regulatory strategy which is closely tied to monitoring strategies. Regulatory activities may include asking questions to monitor students' comprehension, slowing the pace of reading with more difficult texts, reviewing examination materials, and postponing questions. Several studies have shown that all these strategies can enhance second/foreign language reading by correcting their studying behavior and repairing deficits in their understanding of the reading text (Carrell, 1989; Pintrich, 1999; Whyte, 1993).

Compensation strategy. According to the literature, another factor resulting in successful reading is the development of vocabulary knowledge (Yang, 2004). However, many EFL readers often encounter the problem of unfamiliar vocabulary and unknown concepts so as to interfere the comprehension (Zhang, 1993). Several researchers suggest teaching students active compensation strategies to achieve comprehension (Oxford, 1990; Sinatra & Dowd, 1992; Zhang, 1993). Sinatra and Dowd proposed a comprehension framework for the use of context clues: syntactic clues (related to grammatical structures) and semantic clues (involved intra- and inter sentence meaning relationship).

Sinatra and Dowd argued that readers should not only understand how the writer used grammar, but also use semantic clues such as restatement, use of examples and summary clues in order to guess the meaning of a new word. In addition, to guess the meaning of words intelligently, Oxford (1990) clustered 10 compensation strategies into two sets: linguistic clues (guessing meanings from suffixes, prefixes, and word order) and other clues (using text structure such as introductions, summaries, conclusions, titles, transitions, and using general background knowledge). These decoding skills can not only help readers overcome a limited vocabulary, but also help them guess about the theme of an article. Such learning strategies can significantly increase the speed and raise reading efficiency (Winstead, 2004; Zhang, 1993).

Testing strategy. A number of test-taking strategies have been recommended by reading researchers. This is in line with the wide use of multiple-choice items in standardized testing (Zhang, 1993). Jacobs (1985) made two suggestions for test takers: (1) test takers should first read the questions and answers before reading a passage (skimming); (2) test takers should answer each question through a process of elimination (for multiple-choice questions). The same testing strategies were recommended by Oxford (1990) with the assumption made that reading with a purpose would significantly improve both efficiency and test results.

EFL Proficiency Level, Reading Strategy Use, and EFL Reading Comprehension

Numerous studies have addressed the goal of understanding the range and type of learning strategies used by good EFL readers and the differences in reading strategy use between more and less effective learners (Carrell, 1989; Chamot & Kupper, 1989; Jacobs, 1985; Lau & Chan, 2003; Oxford, 1990; Pintrich, 1999; Sinatra & Dowd, 1992; Weinstein & Mayer, 1986; Wenden, 1998; Whyte, 1993; Winstead, 2004; Yang, 2004; Zhang, 1993). For example, good EFL/ESL readers know how to use a variety of appropriate strategies to reach their learning goals in both retrospective and productive tasks, while less effective readers not only use strategies less frequently, but often do not choose the appropriate strategies for the tasks. According to Botsas and Padeliadu (2003), poor readers often use "surface" strategies, which are not suitable for their reading experiences, or they use fewer strategies, less complex in a maladaptive way. On the contrary, good readers possess a well developed repertoire of strategies to successfully comprehend texts.

Although reading strategy research has produced sufficient evidence to inform language teaching and learning practices, reports directly addressing Taiwanese EFL learners' reading strategies are insufficient (Oxford, 1996; Wenden, 1998; Zhang, 2008). Cheng (2000) found that when reading easy English and Chinese texts, Taiwanese students' use of reading strategies is similar; but when they are presented with difficult Chinese and English texts, their use of strategies in reading the Chinese text is more meaning-focused or global; in contrast, when they read the English text, they employ more low-level or local processing strategies. To investigate the differences in reading strategy use between good and poor readers, Lau and Chan (2003) compared 83 good readers and 76 poor readers on their ability to use reading strategies in Chinese reading comprehension. The results showed that poor readers scored lower than good readers in using all reading strategies, especially in using sophisticated cognitive and metacognitive strategies. It is suggested that poor readers might have deficiencies in higher-order cognitive ability. Besides, Jie and Xiaoqing's (2006) study focused on the relationship between learning styles and language learning strategies in the EFL context in China.

The analyses showed that learning styles had a significant influence on learners' reading strategy choices. Compared with low achievers, high achievers were more capable of exercising strategies that were associated with their non-preferred styles. Based on the research results, it is proposed that learning styles may influence learners' language learning outcomes through their relationship with learning strategies. Carrell (1989) conducted a study of ESL readers in the USA, whose results showed that there was a difference between strategy perceptions associated with good L1 readers and those associated with good L2 readers. She pointed out that there was a consistent difference according to L2 proficiency level, with low-proficiency readers tending to report more local strategies than higher-proficiency readers, suggesting that L2 proficiency could intercept readers' perceived use of strategies.

To examine learners' metacognitive knowledge of L2 learning strategies in order to establish possible links between readers' knowledge and use of strategies in context, Zhang (2001) examined 10 Chinese EFL readers' metacognitive knowledge of strategies in learning to read EFL in the People's Republic of China (PRC). His findings showed that the PRC EFL readers' metacognitive knowledge of reading strategies had close links to their EFL proficiency, with high scorers showing clearer awareness of strategy use; that is, they knew better which strategies could be used more effectively in order for comprehension to occur. In contrast, the low scorers did not realize that reading EFL required them to adopt different reading strategies to solve the problems they might encounter. This suggests that readers' L2 proficiency level and L2 reading ability interact with each other.

Based on the literature mentioned above, a good reader becomes an active participant in the reading process; one who requires the integration and application of multiple strategies while reading. This is also where good and poor readers can be distinguished from each other in terms of their control over strategy use (Oxford, 2001; Rubin, 2001; Wenden, 1998).

Purpose of the Study

Although investigations of learning strategies in second/foreign language acquisition have identified the strategy use by good and poor readers (Chamot & Kupper, 1989; Zhang, 2001, 2008), yet until recently there have been fewer studies focusing on EFL learners' reading strategy use in a Taiwanese learning context. As mentioned earlier, university students in Taiwan often have poor English reading ability partly due to their level of reading strategy knowledge and a lack of control over strategy use, so they often select ineffective and inefficient strategies with little strategic intent (Cheng, 2000; Ko, 2002; Lau, 2006; Oxford, 2001; Rubin, 2001; Wenden, 1998; Zhang, 2008). To enhance EFL learners' reading comprehension, O'Malley et al. (1985) and Chamot (2005) mentioned that there is a need for teachers to provide more structure in students' self-report, so that teachers can understand whether students can apply the specific strategies for the reading tasks and whether students can be critically reflective about the language learning activities. Once a learning strategy becomes familiar through repeated use, it may be used with some automaticity; particularly less successful readers can be taught new strategies, thus helping them become better English readers (Chamot, 2005; Grenfell & Harris, 1999).

Nevertheless, a review of the literature shows that although language-learning strategy research has produced sufficient evidence to inform language teaching and learning practices (Oxford, 1996; Wenden, 1998; Zhang, 2008), reports directly addressing Taiwanese EFL learners' reading strategies are insufficient. To examine the strategies used by Taiwanese EFL learners during the reading process, the purpose of the present study was to investigate the following research questions: (1) What is the most frequent use of reading strategy reported by individual students? (2) Is there any significant relationship between students' self-reported reading strategy use and English reading performance? (3) What is the difference existing between EFL proficiency level and reading strategy use? The aim of this study was to investigate the relationship and difference of current reading strategy use (cognitive, metacognitive, compensatory, and testing strategies) between different proficiency-level readers on reading performance. It is hoped that the research results of this study can provide more basic information about a range of effective reading strategies for the improvement of reading instruction in an EFL context, so as to enhance Taiwanese EFL learners' reading comprehension.

Methodology

Subjects

One hundred and eight sophomores majoring in English from one university in Taiwan participated in the study. A demographic questionnaire was administered to gather information about the subjects' backgrounds. Results from the questionnaires showed that the subjects of this study ranged in ages from 19 to 22 years old, with an average of 20.8 years old. All of the subjects had experienced some formal instruction in English for an average of 6.8 years by the time they came to study at the University. Eighty-three percent of the subjects performed various kinds of practices to improve their English language proficiency during their free time, such as listening to English songs and radio programs, by watching American movies or CNN news, and by reading English magazines for personal pleasure. However, 17% of them did not do any practice at all. Subjects were asked to take a comprehension test at the end of the semester as a part of the regular class activities. Subects' reading comprehension was assessed using the Reading Comprehension section of the simulated TOEFL test (Phillips, 1996). Five reading passages were selected, each passage followed by 9 to 11 multiple-choice reading comprehension questions, with the total number of 50 questions in a given test. The test lasted for exactly 55 minutes.

Time is a definitive factor in the reading comprehension test. Many students who took the TOEFL test before noted that they were unable to finish all of the questions in this section. Therefore, they needed to make the most efficient use of their time by using effective reading strategies to get the highest score in a limited amount of time. In addition, greater care went into the choice of passages so that the passage type would match the reading strategies taken. All test papers were scored by the researcher, whereby the subjects received one point if they chose the correct answer. The test results which provided the basis for assigning the subjects into three proficiency groups ranged from 16 to 50 points, with a mean of 36.94 and a median of 37. Thirty-eight subjects (top 27%) whose scores ranged from 40 to 50 were labeled as "high"; 37 subjects (46%) whose scores ranged from 35 to 39 were labeled as "intermediate," and 33 subjects (bottom 27%) whose scores ranged from 16 to 34 were labeled as "low."

There was a significant difference at the .05 probability level (t = 14.97, p = .000) between the high and low groups' means, indicating that the number of subjects in each group was appropriate. The detailed information regarding the distribution of subjects is shown in Table 1.

Table 1 The Distribution of Subjects for Each Group

Group	N	Score	Mean	Median	SD
High	38 (27%)	40-50	42.87	42	3.07
Intermediate	37 (46%)	35-39	37.27	37	1.41
Low	33 (27%)	16-34	29.73	31	4.16

Learning Contexts

A guided reading course, which was designed in terms of a completely formal instruction class, lasted in the Fall 2008 semester. The required textbook for the course was "Mosaic 1: Reading" (Kirn & Hartmann, 2002). The objective of the reading course was to help students with intermediate to high intermediate levels understand the contents of the reading materials and mostly develop various reading skills needed to succeed in their academic studies. In the reading class, students were engaged in practicing a variety of reading skills/strategies, such as previewing vocabulary, predicting reading contents, identifying main ideas, skimming for main ideas, scanning for information, making inferences, etc. The course emphasized the reading of various topics of expository texts, such as education, city life, business, jobs, lifestyles around the world, global trade, medicine, language and communication, etc. The course aimed to enhance students' reading comprehension in English through direct teaching on various reading strategies. Based on the interactive model of the reading process and the information offered by Weinstein and Mayer (1986), Pintrich (1999), and Oxford (1990), 10 sets of reading strategies were selected as essential for EFL students in Taiwan to enhance their English reading comprehension. These reading strategies were categorized into four groups (see Table 2): cognitive (items 1-13), metacognitive (items 14-25), compensation (items 26-35), and testing (items 36-43) strategies.

Table 2 Ten Sets of Reading Strategies

Strategy	Sets of Reading Strategies	Number of Items	Total
Cognitive	● Rehearsal	3 (items 1-3)	13
	● Elaboration	5 (items 4-8)	
	● Organizational	5 (items 9-13)	
Metacognitive	● Planning	3 (items 14-16)	12
	● Monitoring	4 (items 17-20)	
	● Regulating	5 (items 21-25)	
Compensation	● Linguistic	5 (items 26-30)	10
	● Semantic	5 (items 31-35)	
Testing	● Skimming	4 (items 36-39)	8
	● Eliminating	4 (items 40-43)	

Instrumentation and Procedures

In this study, the subjects' strategy-using effect was evaluated based on a reading strategy questionnaire adopted from Oxford's (1990) *Strategy Inventory for Language Learning* (SILL, ESL/EFL version 7.0), Carrell's (1989) *Metacognitive Questionnaire*, Pintrich et al.'s (1991) *The Motivated Strategies for Learning Questionnaire* (MSLQ), Baker and Boonkit's (2004) *English Reading Strategies Questionnaire*, and the researcher's own teaching experiences was integrated and employed to elicit subjects' reported frequency of using the selected reading strategies. The questionnaire was distributed to all the subjects who were invited to complete it within 15 minutes of having taken the reading comprehension test at the end of the semester. The questionnaire (see the Appendix), containing altogether 43 items, consisted of four major categories of general use of reading strategies: cognitive, metacognitive, compensatory, and testing strategies. Subjects were asked to rate certain statements on a 5-point Likert scale ranging from 1 (never or almost never true of me) to 5 (always or almost always true of me). To form a pilot test, three sophomores (English majors) were asked to comment on the contents of the questionnaire. Immediately after the pilot testing, the researcher took time to discuss with the students their concerns related to the meaning and clarity of the statements found in the questionnaire. Minor adjustments were made to the wording in some of the learning contexts as a result of these solicited comments.

Data Analysis

The means and standard deviations of the strategy use scores were computed to investigate the frequency of strategy use. To test the instrument validity, the result showed that there were significant differences (p < .05) in each questionnaire item, indicating that the items were reasonable and appropriate.

To examine the reliability, the cronbach internal consistency coefficients for categories of cognitive, metacognitive, compensatory, and testing strategies were .80, .83, .79, and .81 respectively, suggesting that the final-version questionnaire achieved a high degree of internal consistency reliability in this study. To investigate the relationship of strategic use and students' reading performance, Pearson Product-Moment Correlation was employed for the purpose of this study. Additionally, a one-way ANOVA technique was used to examine the mean differences between EFL proficiency level (independent variable) and reading strategy use (dependent variable).

Results

Research question 1: What is the most frequent use of reading strategy reported by individual students?

The descriptive statistics regarding the means and standard deviations of the four strategies (see Table 3) show that the most frequent use of reading strategy was found to be testing strategy (M = 3.98, SD = .62), followed by compensatory strategy (M = 3.61, SD = .55), followed by metacognitive strategy (M = 3.54, SD = .59), and then followed by cognitive strategy (M = 3.51, SD = .52). In addition, the overall mean score of the four strategies was 3.66 (SD = .60). These findings indicate that the overall frequency of reading strategy use is almost "usually"; that is, students generally have a clear awareness to use the combination of strategies frequently, particularly using testing strategy, in order to get a high reading score.

Table 3 Mean Scores of Reading Strategy Use for each Proficiency Level

N	Cognitive	Metacognitive	Compensatory	Testing
108	M (SD)	M (SD)	M (SD)	M (SD)
	3.51 (.52)	3.54 (.59)	3.61 (.55)	3.98 (.62)
Rank	4	3	2	1

Research question 2: Is there any significant relationship between students' self-reported reading strategy use and English reading performance?

To examine the relationship between the measures of strategy use and reading comprehension, Pearson Product-Moment Correlation was conducted in the study. Results in Table 4 show that both cognitive and testing strategies were significantly correlated (correlation coefficients ranged from .25 and .26, $p < .01$) with reading scores, indicating the weak and positive correlations of cognitive and testing strategies on reading comprehension. This finding shows that to reach a higher level of reading performance, students generally used more cognitive and testing strategies in reading achievement. No significant correlation was found between the usage of metacognitive and compensatory strategies on reading outcomes in this study.

Table 4 Correlations between Reading Strategy and Reading Score

	Cognitive	Metacognitive	Compensatory	Testing
Reading Score				
R	.250**	.164	.128	.261**
p	.009	.090	.186	.006

** $p < .01$

Research question 3: What is the difference existing between EFL proficiency level and reading strategy use?

A one-way analysis of variance (1 X 4 ANOVA) was conducted to compare the means of three English proficiency levels on strategic use. Results in Table 5 show that a significant difference existed at the .05 probability level between different proficiency-level learners and testing strategy use [F (2, 105) = 3.95, p = .022].

Scheffé post hoc comparison procedure was further employed to examine multiple comparisons among the three level means on testing strategy use. Findings in Table 6 reveal that readers with the high proficiency level scored significantly higher than readers with the low proficiency level in the variable of testing strategy use (mean difference = .355, p = .05). Although there were no significant differences among the proficiency levels on the other three strategy uses, it is still of importance that the scores of high proficiency level are all higher than those in the low proficiency level (see Table 7), thus indicating that low group is less capable than high group in using the reading strategies to comprehend English texts.

Table 5 Results of One-Way ANOVA among Proficiency Levels in the Reading Strategy Use

	Sum of Squares	df	Mean Square	*F*	*p*
Cognitive Strategy					
Between Groups	1.61	2	.80	3.03	.052
Within Groups	27.82	105	.27		
Total	29.42	107			
Metacogntivie Strategy					
Between Groups	.96	2	.48	1.38	.256
Within Groups	36.54	105	.35		
Total	37.50	107			
Compensatory Strategy					
Between Groups	.87	2	.44	1.48	.233
Within Groups	30.96	105	.30		
Total	31.83	107			
Testing Strategy					
Between Groups	2.85	2	1.43	3.95	.022*
Within Groups	37.87	105	.36		
Total	40.72	107			

* $p < .05$

Table 6 Post Hoc Comparison among the Three Proficiency Levels on Testing Strategy Use

Testing Strategy		Mean Difference	SD Error	*p*
H	I	.006	.139	.999
	L	.355*	.143	.050
I	H	-.006	.139	.999
	L	.350	.144	.056
L	H	-.355*	.143	.050
	I	-.350	.144	.056

* $p = .05$

Table 7 Mean Scores of Reading Strategy Use for each Proficiency Level

	N	Cognitive	Metacognitive	Compensatory	Testing
Group	108	M (SD)	M (SD)	M (SD)	M (SD)
High	38	3.61 (.53)	3.63 (.58)	3.67 (.60)	4.09 (.65)
Intermediate	37	3.56 (.55)	3.57 (.66)	3.67 (.46)	4.09 (.56)
Low	33	3.33 (.45)	3.40 (.52)	3.48 (.56)	3.74 (.58)

Discussions and Conclusion

To investigate how reading strategy use affects the development of Taiwanese EFL learners' reading comprehension, the aim of this study was to examine the relationship and differences of four reading strategy uses (cognitive, metacognitive, compensatory, and testing strategies) between readers with different proficiency levels on their reading outcomes. Several key findings emerge from this study. First, regarding the frequency of reading strategy use, results of the present study demonstrate that students usually employ various reading strategies in English reading process. Such results support findings in the literature (Chamot, 2005; Grenfell & Harris, 1999; Wenden, 1998; Zhang, 2008), suggesting that it is more effective for students to reach their learning goals if they have a higher frequency of employing a variety of strategies in their reading process.

Another finding of the study indicates that students particularly use more testing strategies to reach a higher level of reading comprehension performance. Such a result is not surprising since Taiwanese students have been traditionally branded "rote" learners, who seem to master testing strategies to overcome language deficiency and obtain better reading achievement on language proficiency tests (Zhang, 2008). Second, regarding the differences in the strategy use between good and poor readers' performance, the finding of this study demonstrates that good readers seem to have distinguished themselves from poor readers in their reported frequency of having the strategic knowledge. This frequency is reflected in their understanding of how to use these strategies (Chamot & Kuppter, 1989; Zhang, 2001). That is, students with a higher reading ability frequently use more reading strategies than do students with a poorer reading ability.

This is consistent with the view that a good reader becomes an active participant in the reading process; one who requires multiple strategies while reading (Oxford, 2001; Rubin, 2001; Wenden, 1998). The other possible reason is that good readers are already proficient at using more varied strategies, so that those strategies might unconsciously be applied in their reading process (Chamot, 2005; Chamot & Kupper, 1989; Dole, Duffy, Roehler, & Pearson, 1991; Kang, 1997). Even though the finding of the study demonstrates that students' use of reading strategies did not indicate a strong relationship in EFL reading achievement, such a result is not surprising, particularly because strategy training in the regular class has not been given much emphasis in Taiwan (Ko, 2002; Lau, 2006). In order to enhance EFL reading comprehension, students should be taught to enhance their awareness and ability in using reading strategies in the reading process.

It is especially important to explicitly teach poor readers cognitive and metacognitive strategies in the classroom since students reported to use fewer cognitive and metacognitive strategies while reading. This seems to be an expected outcome of EFL students' poor cognitive knowledge reported in the literature (Lau & Chan, 2003), and their lower level of metacognitive control in reading process (Cheng, 2000; Zhang, 2001, 2008). In order to enhance both strategic awareness and comprehension skills, students need to go through a lot of practice before they can master and apply these strategies in reading (Ko, 2002). It is, therefore, advisable to integrate various strategies into regular classroom teaching and practice, so that less effective readers are allowed to have a relative period of time to employ these new-learned skills until they have acquired the strategies necessary for independent or autonomous learning (Zhang, 2008). In conclusion, to help students become strategic readers, teachers should raise students' strategic awareness, allowing them to become more aware of strategy use while reading (Ko, 2002).

It is essential for teachers to help EFL learners build a repertoire of reading strategies and then provide various reading materials for students to try out different reading strategies through explicit explanation and modeling (Chamot, 2005; Wong, 2005). Demonstration (modeling) is seen as one of the most useful techniques for explaining strategies for reading achievement (Houtveen & van de Grift, 2007). Making it explicit in this way helps poor readers make clear what they should be doing and what they were not doing before, or what they were doing wrong (Rosenshine & Meister, 1997). Furthermore, teachers should encourage students in applying the strategies to an expanded range of learning activities and materials, so that the strategies can be transferred to new activities and are used by students independently of the teachers' support (O'Malley et al., 1985). Finally, it is also important that the teacher checks what students have understood and gives them feedback on their use of the strategies. Students must be given the opportunity and skills to discuss the text and the use of strategies with their fellow students in small groups so as to check individual students' reading comprehension and strategy use (Kindsvatter, Wilen, & Ishler, 1988).

Limitations of the Study

Although the study has preliminarily investigated how reading strategy use affects the development of Taiwanese EFL learners' reading comprehension, there are several limitations in the research design. First, subjects of the study were 108 undergraduate EFL students in Taiwan. Thus, the generation of the results to other populations with different native languages or educational backgrounds may be limited due in part to the small sampling size. In interpreting the results, we should bear in mind that the subjects' previous academic backgrounds and ages were varied, which might have affected their reading performance. Second, since this study only focused on investigating students' comprehension performance on the TOEFL test, more studies with different types of tests should be conducted in the future to examine major barriers to implementing strategy use in reading English texts. In future research, it is suggested that consideration of individual learner differences such as attitude, gender, previous academic background, and how such variables may promote the use of a reading strategy could lead to future research in other foreign language reading classes.

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Appendix

The following statements are about the strategies you use in reading the passages. Please indicate the frequency of reading strategy you use by circling the following appropriate number.

1. Never or almost never true of me
2. Usually not true of me
3. Somewhat true of me
4. Usually true of me
5. Always or almost always true of me

No.	Statements	Frequency scale
1	I try to remember key words to understand the main idea of the passage.	1 2 3 4 5
2	I memorize key words to remind me of important concepts of the passage.	1 2 3 4 5
3	I underline key words to remind me of important concepts of the passage.	1 2 3 4 5
4	When I read the passage, I make up questions in my mind to help focus my reading.	1 2 3 4 5
5	When I read the passage, I ask myself to look for a common theme in the first line.	1 2 3 4 5
6	When I read the passage, I take notes by writing down the key words.	1 2 3 4 5
7	I pass my eyes quickly over the rest of the passage to check that I really have found the main idea.	1 2 3 4 5
8	I draw a conclusion about the author's purpose for writing the passage.	1 2 3 4 5
9	I do not need to understand every detail in each passage to answer the questions correctly.	1 2 3 4 5
10	I look at the first line of each paragraph to find the main idea.	1 2 3 4 5
11	When I read the passage, I try to relate the material to what I already know.	1 2 3 4 5
12	I try not to translate word-for-word.	1 2 3 4 5
13	I skim/scan in the appropriate part of the passage for the key word or idea.	1 2 3 4 5
14	I plan my schedule so I will have enough time to study English.	1 2 3 4 5
15	I have clear goals for improving my English reading skills.	1 2 3 4 5
16	When reading the passage, I am able to question the significance or truthfulness of what the author says.	1 2 3 4 5
17	I try to find as many ways as I can to comprehend the reading material.	1 2 3 4 5
18	I notice my reading difficulties and try to use other methods to help me understand the passage better.	1 2 3 4 5
19	When I become confused about something I'm reading, I go back and try to figure it out.	1 2 3 4 5
20	When the reading passage is difficult, I neither give up.	1 2 3 4 5
21	I try to find out how to be a better reader of English.	1 2 3 4 5
22	I look for opportunities to read as much as possible in order to improve my reading ability in English.	1 2 3 4 5
23	I ask questions in order to improve my reading ability in English.	1 2 3 4 5
24	I slow the pace of reading when confronting with more difficult texts.	1 2 3 4 5
25	I review the instructed reading skills while studying for an examination.	1 2 3 4 5
26	I find the meaning of an English word by dividing it into parts that I understand.	1 2 3 4 5
27	I skip the words if I don't know the meaning.	1 2 3 4 5
28	I read English without looking up every new word.	1 2 3 4 5
29	To understand unfamiliar English words, I make guesses from suffixes and prefixes.	1 2 3 4 5
30	I look for context clues to help me understand the meanings of vocabulary words.	1 2 3 4 5
31	The thing I do to read effectively is to focus on getting the overall meaning of the text.	1 2 3 4 5
32	I predict what is going to happen next while reading.	
33	I try to predict what the author will say next.	1 2 3 4 5
34	I use my background knowledge to guess the overall meaning of the passage.	1 2 3 4 5
35	I use examples and summary clues to guess the meaning of the passage.	1 2 3 4 5
36	I read questions and answers before reading a passage.	1 2 3 4 5
37	I skim the questions first to determine the main idea and the overall organization of ideas in the passage.	1 2 3 4 5
38	I look ahead at the questions to determine what types of questions I must answer.	1 2 3 4 5
39	I go back to read the details of the passage for the answers of some questions.	1 2 3 4 5
40	I skip questions and return to them later if I am not sure about the right answer.	1 2 3 4 5
41	I eliminate the definitely wrong answers and choose the best answer from the remaining choices.	1 2 3 4 5
42	I choose the best answer to each question from the answer choices carefully.	1 2 3 4 5
	I never leave any answers blank on the answer sheet.	1 2 3 4 5