Taiwanese EFLs' Metacognitive Awareness of Reading Strategy and Reading Comprehension

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Abstract. The study aims to identify the types of metacognitive awareness of reading strategies that Taiwanese EFLs (English as Foreign Language) used at medical junior colleges. In addition, metacognitive awareness of reading strategies were investigated to discover whether or not it affects students' English reading performance, specifically in reading comprehension. A total of 454 junior college students participated in the study. The results indicated that problem-solving reading strategies were used the most, followed by globe reading strategies, whereas support reading strategies were used the least. Regarding of the effects of variables on English reading performance, overall reading strategy use, and problem-solving reading strategies each significantly predicted students' reading comprehension. It's hoped that the finding could be helpful for further study as well as teaching.

Keywords: Metacognitive awareness, reading strategy, reading comprehension.

1 Background

Traditional instruction for reading often stresses on the teaching of vocabulary and grammar. Students are required to spend most of the time memorizing words, structures and grammar. Moreover, it fails to promote students' comprehension but results in their fear and rejection toward reading. During the studying period, the ultimate goal of teachers and students is how to come up with correct answers on exams. Thus, personal opinion and thoughts do not receive lots of attention on students' reading process, and the opportunity of using strategies to enhance reading comprehension is neglected.

A key element to enhance comprehension is metacognition, which is a personal's awareness to manage and monitor the process of cognition. Metacognitive strategic knowledge is a thinking ability involved in the process of reading comprehension. Moreover, students are able to adopt these strategies while reading so as to promote their reading comprehension (Baker & Brown, 1984; Yang, 2002).

In order to investigate the relationship between metacognitve reading strategies and comprehension, the study aims to identify the types of metacognitive awareness of reading strategies that Taiwanese EFLs (English as Foreign Language) used at medical junior colleges. In addition, metacognitive awareness of reading strategies were

investigated to discover whether or not they affect students' English reading performance, specifically in reading comprehension.

In light of intense teaching schedule, it failed to provide students enough time and chance to notice their use of language learning strategies. Thus, it is hoping to offer students and teachers information about students' reading strategies, and to design suitable curriculum for students to cultivate their reading strategies and promote reading comprehension.

2   Literature Reviews

Reading comprehension has been identified as the cognitive skill that people use to comprehend what they read. Although reading in a native language (L1) is not the same as reading in a second language (L2), reading in L1 and L2 still share a similar process that can be influenced by various factors in different patterns (Cook, 2001).

Each student who enters the classroom comes from different family background and possesses different learning style. Several characteristics are synthesized to help obtain concepts about so-called good reader, and that are: (1) be active and positive reader; (2) know how and when to use different strategies in order to help them comprehend what they are reading; (3) tend to make assumption of any unclear or unfamiliar part on reading; (4) monitor how much oneself comprehend the reading; (5) manipulate different strategies to promote comprehension, and adjust strategies to compromise the part which failed to comprehend successfully by using previous strategies; (6) possess linguistic awareness (Celce-Murcia, 2001; Houtveen and Van de Grift, 2006; Maria, 1990 ; Tompkins, 2005).

Although there are various factors that affect the ability of reading comprehension, the key factor is strongly associated with the reader' cognitive skills and metacognition, such as if the reader has enough prior knowledge to link what they have learnt to the new information, using different strategies to help comprehend reading, and so on (Celce-Murcia, 2001; Farley and Elmore,1992). Besides, Flavell (1979) stated that metacognition is a personal's awareness to manage and monitor the process of cognition. Metacognitive strategic knowledge is a thinking ability involved in the process of reading comprehension. Moreover, students are able to adopt these strategies while reading so as to promote their reading comprehension (Baker & Brown, 1984; Yang, 2002).

3   Methodology

3.1   Participants and Population

Participants in this study mainly consisted of students who were learning English as a foreign language. Except for those in the foreign language department, students are required to take English courses for three hours per week their first three school years.

Before attaining junior college status, all students had been taking English courses for at least three years in junior high school.

The data for this study was based on surveys given to the students from different departments. These students contained different levels from basic to advanced English proficiency for the population of approximately 550 students. By removing the un-completed surveys, valid samples were reduced to a total of 454 full-time students, shown in Table 1, including 100 males (22%) and 354 females (78%).

In addition to gender, participants are mainly from the following department: Applied English (34.1%), Nursing (31.5%), Physical Therapy (15.4%), Dental Labor-atory Technology (11.5%), and Occupational Therapy (7.5%). The majority of partic-ipants were first-year junior college students (75.1%) at the age of 16 to 17 years old, whereas the rest students are second- to fourth-year students (24.9%). In addition, Chinese was their native language.

3.2   Research Instrument

The research instruments in the study were surveys that included two sections: Meta-cognitive Awareness of Reading Strategy Inventory (MARSI, Mokhtari and Reichard, 2002), and a reading test called the General English Proficiency Test (GEPT). As for the period used for answering, students were able to complete all within 90 minutes.

Section 1: MARSI. The MARSI, developed by Mokhtari and Reichard (2002), was used to identify 6th- 12th grade students' awareness and perceived use of reading strat-egies while reading academic or relative materialss. It is composed of 30 items in 3 scales: Globe Reading Strategies, Problem-solving Reading Strategies and Support Reading Strategies. In order to reduce difficulty and misunderstanding in responding to the questions, MARSI was translated into a Chinese Version by the researcher.

Section 2: GEPT Test. In order to identify students' English reading comprehension, the reading section of a General English Proficiency Test (GEPT) was used in the study. The GEPT is divided into five levels according to difficulty: elementary, in-termediate, high-intermediate, advanced, and superior. The GEPT elementary level was chosen in the study because it is designed for examinees who have achieved at least a junior high school level proficiency. The GEPT reading test has a total of 35 items dealing with three components of reading: vocabulary and structure, cloze texts, and reading for comprehension. Each item contains a statement that requires exami-nees to choose one answer that best fits its description. The reading test requires 35 minutes for participants to complete, and the maximum score is a total of 120 points.

3.3   Data Collection and Analysis

Participating students were given relevant materials including a copy of the MARSI and the GEPT reading comprehension test. Participants were guaranteed that all data

and information was collected anonymously and would not be accessed by anyone other than the researcher.

The data was gathered from the survey with a five-point Likert scale, and from the GEPT reading scores. Before data analysis, the researcher checked and edited the data from returned questionnaires. The Statistical Package for the Social Sciences (SPSS), Version 16.0, was used for data analysis in this study.

4   Research Findings

The following information, including descriptive statistics and analysis summary, was described by the research questions of the study.

4.1   Students' Reading Comprehension

On average reading scores, as shown in Table 1, revealed that Occupational Therapy groups scored the highest ($M = 67.87$, $SD = 18.926$) on English reading comprehension than the other four groups (N: $M = 39.61$, $SD = 18.236$; PT: $M = 51.28$, $SD = 24.878$; D: $M = 62.18$, $SD = 14.968$; E: $M = 67.75$, $SD = 20.000$).

The results showed that the occupational therapy groups had better English reading scores, followed by applied English groups, dental laboratory technology and physical therapy, whereas nursing groups reported the lowest reading scores.

Table 1. Descriptive Statistic of English Reading Scores with Different Majors

Major	N	M	SD
Overall	454	55.72	23.156
Nursing (N)	143	39.61	18.236
Physical Therapy (PT)	70	51.28	24.878
Occupational Therapy (OT)	34	67.87	18.926
Dental Laboratory Technology (D)	52	62.18	14.968
Applied English (E)	155	67.75	20.000

4.2   Students' Metacognitive Awareness of Reading Strategy Use

As shown in Table 2, on average students' overall and the three types of reading strategies reported medium use of reading strategies when reading materials (M = 2.5~3.4). In term of individual strategy use, students used problem-solving strategies the most ($M = 3.36$, $SD = .807$)，followed by global strategies ($M = 3.30$, $SD = .719$), whereas support strategies are used the least ($M = 3.18$, $SD = .782$). Moreover, the overall frequency of strategy use in the study was in the medium use ($M = 3.28$, $SD = .732$).

Table 2. Descriptive Statistics of the Use of Reading Strategies

Type of strategy	M	SD
Overall	3.28	.732
Global	3.30	.719
Problem-solving	3.36	.807
Support	3.18	.782

Note. $M \leqq 2.4$ indicates low use of strategies while reading; $2.5 < M < 3.4$ indicates medium use of strategies while reading; $M \geqq 3.5$ indicates high use of strategies while reading.

4.3 The Relationship between Metacognitive Awareness of Reading Strategies and Reading Comprehension

A standard regression analysis (see Table 3) was used between the dependent and independent variables. In terms of individual variable, major ($\beta = .334$, p < .001) and overall strategy use ($\beta = .420$, p < .001) both held significant relationships with students' reading scores. According to the results in Table 3 and 5, major difference is a factor that affects students on their English reading achievement. For the use of overall reading strategies, students who used more reading strategies scored better in English reading than those who used fewer strategies.

Table 3. Regression Analysis Summary for Major, Grade, Gender, Overall Reading Strategy Predicting English Reading Scores

Variables	B	SEB	β	t
Major	2.235	.294	.334	7.608***
Grade	1.004	1.639	.026	.613
Gender	-1.775	2.109	-.032	-.841
Overall strategy	13.301	1.231	.420	10.801***

Note. $R^2 = .372$, Adjust $R^2 = .366$. $F_{(4,449)} = 66.425$, p < .001.
*p < .05. ** p < .01. *** p < .001.

Another regression analysis (see Table 4) was employed to determine the relationships of three types of reading strategy use and English reading achievement. In terms of individual variable, major ($\beta = .333$, p < .001) and problem-solving strategy use ($\beta = .263$, p < .001) both held significant relationships with students' reading scores. According to the results in Table 3 and 6, major difference still presented effects on students' English reading achievement. Students in OT, D, and E groups, who used more strategies while reading, achieved higher reading scores than N and PT groups. For the three types of reading strategy, students who used more problem-solving reading strategies scored better in English reading than those who used fewer problem-solving strategies.

Table 4. Regression Analysis Summary for Major, Grade, Gender, Three types of Reading Strategy Predicting English Reading Scores

Variables	B	SEB	β	t
Major	2.229	.294	.333	7.581***
Grade	1.163	1.646	.030	.707
Gender	-2.037	2.123	-.037	-.960
Reading strategy				
Globe	4.064	2.861	.126	1.420
Problem	7.535	2.459	.263	3.064**
Support	1.531	2.272	.052	.674

Note. $R^2 = .375$, Adjust $R^2 = .367$. $F_{(6,447)} = 44.720$, $p < .001$.
   $*p < .05.$ ** $p < .01.$ *** $p < .001.$

5   Conclusion and Implication

5.1   Discussion

Students' Metacognitive Awareness of Reading Strategy Use. The overall frequency of strategy use in the study was in the medium use. In terms of reading strategy use, the strategy that Taiwanese EFL students used the most was problem-solving strategy, and this has been supported by studies (Alsheikh, 2002; Chen, 2007; Chen, 2010; Hu, 2011). Moreover, other results have also reported that support strategy was found to be the least used (Al-Nujaidi, 2003; Chen, 2007; Chen, 2010; Wu, 2005). One possible explanation for problem-solving strategies being the most used strategy could be that instruction of English reading in the first three years of junior colleges emphasizes seeking for the correct answers, and for this purpose, using additional resources (such as library and online information access) or cooperating different realm of information are not required at this stage.

Metacognitive Awareness of Reading Strategy Use Relationship to English reading Comprehension. For the use of overall reading strategies, students who used more reading strategies scored better in English reading than those who used fewer strategies. According various research findings, it was reported that the training of metacognitive reading strategy has positive effect on developing students' reading performance (Tseng, 2009; Wu, 2012). That is, reading comprehension could be promoted through metacognitive reading strategy training which helps increase the use of strategies on reading.

   In terms of individual reading strategy use, students who used more problem-solving reading strategies scored better in English reading than those who used fewer problem-solving strategies. The finding can be explained by a fact that English, instead of reading for fun, is an academic subject which is used to examine students' English performance. Thus, students are taught to seek for the right answers as soon as possible. In addition, intense class schedule could not offer student enough time and opportunity to search supportive information related to the reading materials.

5.2   Implication

Effective Teaching Strategies for Reading Comprehension. In the study, students were reported to possess medium use of strategies on reading. That is, students adapted strategies to help comprehend written text, either intentionally or spontaneously. It comes to an agreement that better readers are often strategic and skillful (Celce-Murcia, 2001; Tompkins, 2005). Besides, since the 1970s, a number of models and strategies of reading comprehension have been developed. Research for the National Reading Panel has identified five effective reading comprehension strategies which are "summarization, self-questioning, story structure instruction, graphic and semantic organizer, and comprehension monitoring" (Taylor, et al., 2006, p.305).

To this point, Brown and Palincsar (1989) provided four reading strategies, called reciprocal teaching (RT), that should be taught to students; summarizing, predicting, clarifying, and asking questions. According to the research findings, reciprocal teaching has been reported a significance on promoting metacognition (Huang, 1996; Yang, 2002) and reading comprehension (Frances & Eckart, 1992; Hsieh, 2010; Lin, 2012; Tsai, 2010; Ya, 2010). Since English reading is often taught as an academic subject in most Taiwanese classes and finding the answer is always the only mission to read. That is, it left no need to students to probe the information behind the written text and then to connect it to their prior knowledge. Therefore, it is necessary to offer students the training and practice about using the four types of RT. Asking questions, for instance, is one of the most common modes to engaging responsively. Different levels of questions lead to different levels of cognitive engagement with text. It is found that teachers who use more high-level questions significantly improve students' reading comprehension (Arends, 1994; Rothenberg & Fisher, 2007; Taylor, Pearson, Clark, & Walpole, 2000; Taylor, et al., 2006; Wilen, 1991).

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