



Vietnamese EFL Learners' Reading Comprehension Affected via Metacognitive Strategy Instruction

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Abstract:

A number of studies around the world have laid focus on investigating the effect of meta-cognitive strategies in EFL learning, specifically in reading comprehension. The findings of these studies suggest that meta-cognitive strategies have a positive correlation with learners' reading comprehension. As an attempt to contribute more empirical evidence to these previous findings, the present study examined the impact of meta-cognitive strategy instruction on Vietnamese EFL learners' reading comprehension. It also aimed at identifying the conscious use of these learners' meta-cognitive strategies concerned. Participants were sixty-four Vietnamese college students, who were taking English courses in Foreign Language Center of Can Tho University, located in Can Tho City, South of Vietnam. The findings showed that the experimental group via a special instructional treatment program had more enhancement than the control group in the reading post-test and the conscious use of the target strategies in the post-questionnaire although their level was not close to that of good readers. As a result, it suggests that apart from other regular cognitive activities (e.g. scanning, skimming, picking up new words, pre-teaching vocabulary, translating), EFL teachers should raise learners' attention to meta-cognitive strategies while conducting reading tasks in particular.

Keywords: *Conscious use, Instruction, Meta-cognitive strategy, Reading, students*

1. Introduction

There is no doubt that different learners seem to approach reading tasks in different ways and some of these ways appear to lead to better comprehension. Up-to-date research has shown that good readers, when encountering comprehension problems, use strategies to scaffold themselves to complete required tasks. As a result, it is believed that if good readers' strategies can be identified and described in details, it may be possible to train poor learners to develop strategies concerned so as to improve their reading comprehension (Tercanlioglu, 2004). Research findings (Zhang & Wu, 2009) confirm that there exists a positive relationship between the use of reading strategies and EFL learners' reading comprehension. Thus, explicit instruction of reading strategies, especially the meta-cognitive ones in class is encouraged. Consequently, the present study made an attempt to investigate the effects of meta-cognitive strategy instruction on EFL students' reading comprehension in Vietnamese context, where EFL reading comprehension is still a challenging task for a majority of non-English college students, and where research in the concerned topic has yet to be comprehensive and systematic (in comparison to that of cognitive strategies, which have been widely studied recently in Vietnam).

2. Research Aims and Questions

The aims of the present study were to (i) measure the effects of the instruction of meta-cognitive strategies, specifically ten meta-cognitive strategies often used by good readers, on EFL students'

reading comprehension, (ii) elicit the target students' conscious use of these strategies in reading classes. To achieve its aims, the present study sought answers to the following questions: (1) *To what extent does meta-cognitive strategy instruction affect EFL students' reading comprehension?* (2) *How conscious are the target students of the use of meta-cognitive strategies in reading tasks?*

3. Literature Review

3.1 Reading Comprehension

A simple definition of reading comprehension is put forward by Carnine et al. (1997) that reading comprehension is *to understand what we read, which is the ultimate goal of any kind of reading*. Meanwhile, the ability to both *decode* and *comprehend* what one reads has been conceptualized in the view of Gough and Juel (1991) that reading equals decoding times comprehension, or $R = D \times C$. According to this formula, if there is no decoding, reading is not taking place. Conversely, if one can decode but cannot comprehend (e.g. when reading a foreign language), reading is still not taking place. Most reading educators would agree that both decoding and comprehension skills are necessary in the reading process. In other words, decoding and comprehension skills make up the two major aspects of reading: *cognition* and *meta-cognition*. Decoding, or reading the words of the text forms the cognitive process, while thoughts about reading to control comprehension are involved in meta-cognitive process (Eriksson, 2000). Therefore, to become successful readers, learners must foster both cognitive and meta-cognitive processes by combining between what they already know and what they discover in the text while comparing the new and the available-in-mind information simultaneously (Yore et al., 2003).

3.2 Meta-cognitive Strategies

Deriving from Flavell's model, meta-cognitive strategies are defined as strategies related to *how we think and how we learn* (Ashman & Conway, 1993). These strategies help students to be aware of how to set reading objectives and how to be effective and independent in learning (Paris & Jacobs, 1984). Basically, meta-cognitive strategies are actions which go beyond purely cognitive devices (Oxford, 1990), and are effective tools which help learners to be consciously aware of what they have learned and recognize situations in which it would be useful. Alderson (2000) strongly agrees that the ability to use meta-cognitive strategies effectively to monitor reading is an important component of skilled reading. Readers who have meta-cognitive awareness know what to do when they do not understand because they have strategies to find out what they need to do. Therefore, the use of meta-cognitive strategies triggers one's thinking and leads to more profound learning as well as improved performance.

Meta-cognitive strategies are classified differently by many researchers. However, they demonstrate several characteristics in common. These include three major meta-cognitive categories: planning, monitoring and evaluation (e.g. Blakey & Spence, 1999; Brown, 1994; Cross & Paris, 1988; Oxford, 1990; Pressley & Afflerbach, 1995).

(1) *Planning strategies* in terms of reading are used before reading. Activating learners' background knowledge to get prepared for reading is an example of planning strategies (Almasi, 2003; Israel, 2007). Also, previewing a title, picture, illustration, heading, or subheading can help readers grasp the overview of the text. Readers may also preview the general information in the text and its structure (Almasi, 2003; Paris et al., 1991). Learners may check whether their reading material has a certain text structure, such as cause and effect, question and answer, and compare and contrast. Further, setting the purpose for reading can also be categorized as a planning strategy (Paris et al., 1991; Pressley, 2002).

(2) *Monitoring strategies* occur during reading. Some examples of monitoring strategies are comprehension of vocabulary, self-questioning (reflecting on whether they understood what they have read so far), summarizing, and inferring the main idea of each paragraph (Israel, 2007; Pressley, 2002). Readers may also identify and focus on key information or key words, including *but*, *however*, *in addition*, *also*, and *in conclusion*. Determining which part of the passage can be emphasized or

ignored based on the purpose of the task is another monitoring strategy (Hudson, 2007).

(3) *Evaluating strategies* are employed after reading. For example, after reading a text, learners may think about how to apply what they have read to other situations. They may identify with the author, a narrative, or main character, and may have a better perspective of the situation in the book than they did at first.

The three categories are subdivided into ten specific meta-cognitive strategies frequently used by good readers as follows:

Table 1: Meta-cognitive strategies used by good readers

| Strategy category | Meta-cognitive strategies |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <i>Planning strategies</i> | (1) Setting a purpose for reading (2) Making prediction (3) Activating prior knowledge |
| <i>Monitoring strategies</i> | (4) Decoding text into words and meaning (5) Visualizing (6) Summarizing (7) Monitoring understanding (8) Self-questioning |
| <i>Evaluating strategies</i> | (9) Reflecting on the meaning (10) Applying |

3.3 Meta-cognitive Strategy Instruction

Roehler and Duffy (1984) pointed out:

Teacher explanations of the processes are designed to be meta-cognitive, not mechanistic. They make students aware of the purpose of the skill and how successful readers use it to actively monitor, regulate, and make sense out of text, creating in students an awareness and a conscious realization of the function and utility of reading skills and the linkages between these processes and the activities of reading (p.266).

However, what constitutes a careful and complete explanation of a reading comprehension strategy instruction? According to Greeno et al. (1996), this should involve teaching learners all types of meta-cognitive knowledge. In addition, meta-cognitive strategy instruction should provide students direct instruction. As such, meta-cognitive knowledge is transferred to the learners when the teacher explains to learners why a strategy is important, when and where to use the strategy, and how to evaluate its effectiveness (Cross & Paris, 1988; Winograd & Hare, 1988). Drawing upon the prior work of a number of other instructional researchers, Winograd & Hare (1988) proposed the following 5 elements as constituting teacher explanation in strategy instruction: (1) *what the strategy is*, (2) *why a strategy should be learned*, (3) *how to use the strategy*, (4) *when and where the strategy should be used*, (5) *how to evaluate use of the strategy*.

3.4 Previous Significant Studies

O'Malley et al. (1998) identified different kinds of strategies used in ESL classrooms, and to examine the relationship between the task and the proficiency level of the ESL students. The research participants were interviewed regarding their English learning experiences, particularly in reading. The findings indicated that the meta-cognitive strategy of planning was most applied (82.3%) by the students compared to other meta-cognitive strategies of monitoring and evaluating (9.4% and 8.3 %, respectively).

Zhang (2001) looked at awareness of meta-cognitive strategies for different English-proficiency levels of Chinese EFL college students. It found that more advanced EFL students tended to use global strategies (e.g. prediction, identifying a text structure, integration, questioning about the text, interpretation, relating, commenting, and monitoring), while less advanced ones depended on local

strategies (e.g. paraphrasing, questioning of clause, questioning of word meaning, and word solving).

In his study, Cubukcu (2008) aimed to determine the effectiveness of systematic direct instruction of multiple meta-cognitive strategies designed to assist students in comprehending text. The findings implied that reading comprehension could be developed through systematic instruction of meta-cognitive language learning strategies because the experimental group achieved significantly better results than the control group.

Similarly, other studies like Ghabanchi and Haji-Mirza (2010) confirmed positive impacts of meta-cognitive strategy instructions/orientations on EFL learners' reading comprehension one way or another.

Obviously, explicit instruction of meta-cognitive strategies is advantageous for EFL/ESL learners. However, this is not always the case. For example, Janzen's (2003) studied the strategic training for third-grade Navajo students. Twenty-one students in the experimental group and 18 students in the control group participated in the study. Data was collected from standardized reading tests, questionnaires about reading behaviors (prior to and following the intervention), and think-aloud protocols (after the intervention). After one year, the post-reading test indicated that there was no significant difference between the two groups. However, from an analysis of the questionnaires, it was discovered that consciousness of reading strategies did increase, and more meta-cognitive strategies were performed during the think-aloud task by the experimental than the other group. In the same line, other cases like Johns and Mayes (1990), and Miciano (2002) did not find a positive correlation between meta-cognitive orientations and reading comprehension.

In Vietnamese context, there is a lack of empirical studies purposely to make evident the impact of meta-cognitive strategy instruction on EFL learners' reading comprehension. Furthermore, the recommendation of instructing ten meta-cognitive strategies used by good readers has not been evaluated in much research so far. Therefore, such studies like the present one are supposed to more or less narrow down the gap concerned, especially in Vietnamese context.

4. Methodology

4.1 Participants

They were students at Foreign Language Center of Can Tho University, located in Can Tho City, South of Vietnam. The total number of participants was 64 EFL students (24 males, 40 females, aged between 19 and 22) who were doing reading courses in the center (at the time of research). These students took that course in order to prepare for the English proficiency test of elementary/basic level. They were chosen for the present study because those students had been instructed virtually nothing about meta-cognitive strategies before, i.e. they were novice students in terms of meta-cognitive strategies awareness. They were non-English major students from several universities/colleges in Can Tho City. They had taken the placement test administered by the center and were then arranged into two classes, 32 students each. The present researchers, under the center manager's permission, randomly appointed one class as the experimental group and the other as the control group

During six successive weeks (2 hours per week) the experimental group experienced meta-cognitive strategies instruction (a special treatment program of reading lessons on purpose), while the other group received regular reading lessons shaped by the textbook related. Both were taught by one of the present researcher, on Monday from 18pm – 20pm for the experimental and on Tuesday from 18pm – 20pm for the control.

4.2 Instruments

The first instrument employed in the present study was a 20-item multiple-choice test of reading skill, taken from several tests of the elementary level prepared by the center. The test consisted of three passages followed by multiple-choice questions. The questions comprised in the test were those which required test-takers to look for words with similar meaning, make references, infer the meaning,

search for author implication, add a sentence into the passage, etc. (see Appendix 1 for more details). Test duration was 30 minutes. The test was used twice, one for the pre-test and the other the post-test, with two versions of dissimilar option order only. Since the test was in multiple-choice form, the Right/Wrong credit was used to score the test. Each item was scored as correct (0.5 point) and incorrect (0 point). The total points for the test were 10.

The second instrument was a meta-cognitive strategy questionnaire. This questionnaire was designed by the researchers for the gathering of data needed in determining the frequency of conscious use of meta-cognitive strategies among participants. The questionnaire consisted of two parts. Part 1 aimed to gather information on the participants' personal data i.e. his/her name, gender, and age. Based on the literature review of 10 meta-cognitive strategies used by good readers (presented above), Part 2 had 20 closed-ended items on 5-point rating scale, i.e. (1) *never*, (2) *occasionally*, (3) *sometimes*, (4) *usually*, (5) *always* (see Appendix 2). The participants were asked to choose the scale that was applicable to them. Then the questionnaire items were translated into participants' native language, Vietnamese, for them to complete the questionnaire at ease. The translation was then examined by three English language teachers and later revised for clarity of the questions asked. The questionnaire content was briefly described below:

Table: 2. Questionnaire Content

| No. | Meta-cognitive Strategies | Descriptive Items | Percent (%) |
|-----|--------------------------------------|-------------------|-------------|
| 1 | Setting a purpose for reading | 1, 2 | 10 |
| 2 | Predicting | 3, 4 | 10 |
| 3 | Activating prior knowledge | 5, 6 | 10 |
| 4 | Decoding text into words and meaning | 7, 8 | 10 |
| 5 | Visualizing | 9, 10 | 10 |
| 6 | Summarizing information | 11, 12 | 10 |
| 7 | Monitoring understanding | 13, 14 | 10 |
| 8 | Self-questioning | 15, 16 | 10 |
| 9 | Reflecting | 17, 18 | 10 |
| 10 | Applying | 19, 20 | 10 |

4.3 Procedures

After the center manager reviewed and approved the research instruments, a pilot study of both the reading test and questionnaire concerned was done in order to assure the reliability. The instruments were piloted with 33 non-English major students sharing the same features with those of the present study. The value of coefficient alpha of the piloted test was .77 and .86 for the questionnaire, indicating the reliability of the instruments. After that the researchers began to conduct the present study. The data was collected during eight weeks, through three stages as follows.

(1) Stage 1: At the first class meeting, both groups were asked to do the pre-test in class and the researchers then administered the questionnaire. The test papers and the questionnaire were collected immediately in class; therefore, 100 percent of the respondents (64) returned the test papers and the questionnaires. No corrective feedback of any mode was given until the whole program was completed, i.e. one week after the post-test and post-questionnaire were done.

(2) Stage 2: For the next six weeks, the experimental group was instructed using different meta-cognitive strategies (focusing on two strategies per week in five weeks and one more week for strategy revision and practice), whereas the other group received regular reading lessons based on the textbook design. The instructional framework for the experimental group encompassed 5 major steps: (i) *Preparation* helped students identify the strategies they used and developed their meta-cognitive awareness of the relationship between their own mental processes and effective learning. The teacher explained the importance of meta-cognitive learning strategies to students; (ii) *Presentation* focused on modeling the learning strategy. The teacher presented in details the characteristics, usefulness, and

applications of the strategy explicitly through examples; (iii) *Practice* - students had chances to practice the learning strategies with authentic learning tasks prepared by the teacher; (iv) *Evaluation* provided students with opportunities to evaluate their observed success in using learning strategies, thus developing their meta-cognitive awareness of their own learning processes; (v) *Expansion* encouraged students to use the strategies that they found most effective, apply these strategies to new contexts, and devise their own individual combinations and interpretations of meta-cognitive learning strategies.

(3) **Stage 3:** At the last class meeting, students were post-tested, followed by completing the questionnaire. All 64 test papers and 64 questionnaires were collected.

The software SPSS (Statistical Package for the Social Science) version 16.0 was used as the major means for data analysis in which the means, descriptive statistics, one sample t-test, pair samples t-test, and independent t-test were exploited to analyze and compare the results of the empirical data.

4.5 Materials

The main textbook was *Interactions 1 – Reading* (Kirn, E. & Hartmann, P., 2007, Silver Edition-McGraw Hill Publisher). As scheduled by the Foreign Language Center, students of the course were expected to accomplish the first three chapters of the textbook during the 6 weeks of treatment: Chapter 1: *Academic Life around the World* (pp. 2–19); Chapter 2: *Experiencing Nature* (pp. 20–39); Chapter 3: *Living to Eat, or Eating to Live?* (pp. 40–59).

In accordance with the textbook, a special meta-cognitive strategies instruction of a 5-step model, addressed above at Stage 2, was purposely applied to the experimental group explicitly.

5. Results and Discussions

5.1 Pre-Test Results

Table: 3. Pre-Test Descriptive Statistics

| Group | N | Min | Max | Mean | SD. | t | df | Sig. (2 tailed) |
|------------------|----|-----|-----|-------|--------|-------|----|-----------------|
| Experimental(EG) | 32 | 2.0 | 8.5 | 4.359 | 1.5823 | | | |
| Control (CG) | 32 | 2.0 | 8.0 | 4.484 | 1.4227 | | | |
| EG vs. CG | | | | | | -.332 | 62 | .741 |

Table 3 reveals that pre-test mean scores, standard deviations, maximums between EG and CG were slightly different, 4.359 (out of 10), 1.5823, 8.5 and 4.484 (out of 10), 1.4227, 8.0 respectively. But, the Independent Samples t-test of $p=.741 > 0.05$ indicated that there was no statistically significant difference between the two mean scores. That is at the beginning of the treatment program the level of EFL reading comprehension between the two groups were almost the same and below the average (less than 5 out of 10).

5.2 Pre-Questionnaire Results

Table: 4. Pre-Questionnaire Descriptive Statistics

| Group | N | Min | Max | Mean | SD. | t | df | Sig. (2 tailed) |
|------------------|----|------|------|--------|--------|-------|----|-----------------|
| Experimental(EG) | 32 | 2.15 | 4.40 | 3.3500 | .60215 | | | |
| Control (CG) | 32 | 2.20 | 4.40 | 3.1766 | .50209 | | | |
| EG vs. CG | | | | | | 1.251 | 62 | .215 |

It can be seen from Table 4 that the mean scores of the strategy use of the two groups were respectively $M=3.35$ (out of 5, $SD=.60$) and $M=3.18$ (out of 5, $SD=.50$) for EG and CG. Like the pre-test results, there was no statistically significant difference between the two mean scores because the Independent Samples t-test of these mean scores indicated that $p=.215 > 0.05$ ($t=1.251$, $df=62$). In other words, it confirms the homogeneity of the two groups in terms of meta-cognitive strategy use before the treatment program. It also indicates that at the current level of between 3.1 and 3.4 out of 5, the concerned students employed meta-cognitive strategies much less than good readers (level 5)

theoretically.

5.3 Post-Test Results

Table: 5. Post-Test Descriptive Statistics

| Group | N | Min | Max | Mean | SD. | t | df | Sig. (2 tailed) |
|------------------|----|-----|-----|-------|--------|--------|----|-----------------|
| Experimental(EG) | 32 | 4.0 | 8.0 | 5.516 | 1.0198 | | | |
| Control (CG) | 32 | 3.0 | 8.0 | 4.844 | 1.2407 | | | |
| EG vs. CG | | | | | | -2.366 | 62 | .021 |

Compared to Table 3, Table 5 displays both groups' mean scores were improved in the post-tests although CG's mean score M=4.844 was still below average (5 out of 10) and EG's M=5.516 was just above average. Additionally, after the treatment program, EG's mean score was significantly higher than that of their counterpart with $p=0.02 < 0.05$ (the Independent Samples t-test of the two mean scores). It proves that the treatment of meta-cognitive strategies instruction generated better gains in the target learners' reading comprehension than the traditional approach.

5.4 Post-Questionnaire Results

Table: 6. Post-Questionnaire Descriptive Statistics

| Group | N | Min | Max | Mean | SD. | t | df | Sig. (2 tailed) |
|------------------|----|------|------|--------|--------|--------|----|-----------------|
| Experimental(EG) | 32 | 3.50 | 4.55 | 3.7328 | .19244 | | | |
| Control (CG) | 32 | 2.15 | 4.40 | 3.2219 | .49789 | | | |
| EG vs. CG | | | | | | -5.415 | 62 | .000 |

Like the post-test results, although both groups' mean scores, M=3.73 for EG and M=3.22 for CG respectively, improved from the pre-questionnaire (Table 4) to the post-questionnaire (Table 6), the score increase in both groups was not remarkable. Yet, there was a statistically significant difference in two groups' post-questionnaire mean scores ($p=.000$), indicating that after the treatment program, EG's meta-cognitive strategy use of the experimental group was significantly higher than that of its counterpart.

Next is EG's conscious use of meta-cognitive strategies in details.

Table: 7. EG's Post-Questionnaire in Strategy Categories

| Strategy Categories | N | Min | Max | Mean | SD. |
|---------------------|----|------|------|--------|--------|
| Planning | 32 | 3.17 | 4.50 | 3.8021 | .31520 |
| Monitoring | 32 | 3.40 | 4.50 | 3.7375 | .19797 |
| Evaluating | 32 | 3.00 | 4.75 | 3.6172 | .40153 |
| Valid N (listwise) | 32 | | | | |

It can be seen that, statistically planning strategies topped the list, followed by monitoring and evaluating strategies respectively. However, the differences of EG's conscious use of these categories were not statistically significant because the result of One-Way ANOVA was $p=.065$ (Table 8). That is to say, all three categories of strategies were equally used by EG.

Table 8. EG's Strategy Categories in Comparison

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|----|-------------|-------|-----------|
| Between groups | .564 | 2 | .282 | 2.820 | .065>0.05 |
| Within groups | 9.293 | 93 | .100 | | |
| Total | 9.856 | 95 | | | |

The above finding was not in line with that of O'Malley et al. (1998), which reported that planning strategies were dominantly applied by the researched learners. This mismatch could be explained that in the present study, the students were intensively exposed to the instructions of the strategies and were given opportunities to practice; therefore they were more aware of the strategies. Meanwhile, the previously mentioned study appeared to be a survey on the students' uses of the strategies without any

notification that the learners had already possessed, to some extent, some knowledge about meta-cognitive strategies. In brief, it can be seen that thanks to the instructions of these strategies, consciousness of these strategies in the experimental group increased, and that more meta-cognitive strategies were more or less performed, which was completely comparable to the finding of Janzen (2003).

The following figure describes the change in each of the 10 meta-cognitive strategies from the pre- to post-questionnaire:

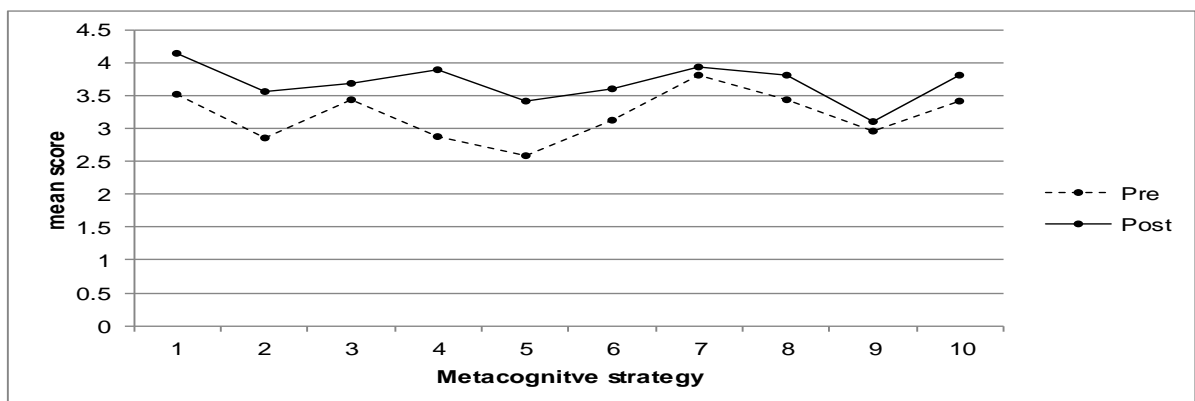


Figure 1. Ten strategies reflected in the pre-post questionnaire of EG

Despite EG's similar increase in conscious use across 3 major strategy categories (i.e. planning, monitoring, evaluating), Figure 1 indicated that the increase of each specific strategy use was slightly different from one another. Specifically, decoding text into words-meaning (strategy 4) and visualizing (strategy 5) were best improved. The increase of the learners' conscious use in these strategies could be explained that these two strategies are the commonly seen ones in reading classes. Practically, these strategies involve guessing meaning in context, identifying main idea and supporting details, outlining the text, using charts or diagrams to foster comprehension. Therefore, the students might perceive and get used to using them more easily. Other strategies such as setting a purpose for reading (strategy 1), predicting (strategy 2) and summarizing information (strategy 6) made a moderate increase in conscious use.

Meanwhile, monitoring understanding (strategy 7) and reflecting (strategy 9) were least increased in conscious use. The learners' problems might involve a difficulty applying the strategies themselves, which Gersten et al. (1998) called "problems in strategic processing". The students might not have been taught an appropriate reading strategy for dealing with in a given situation or they might have forgotten how to use it. For example, a student might hold a misconception that good readers understand what they read simply by reading it once. If this was the case, they might never think to use strategies like rereading unclear passages or even identifying unclear passages. In addition, time constraint should also be taken into consideration. The time allotted to read the passages was not long enough for students to reread once they had problems with comprehension. In addition, in-class practice time might have been not enough for learners to well apply the instructed strategies. Thus, these two strategies need further consideration.

6. Conclusion

The present study was conducted to investigate the impact of meta-cognitive strategy instruction on Vietnamese EFL students' reading comprehension, their conscious use of meta-cognitive strategies before and after the treatment in reading classes. The results saw both groups' level of reading comprehension more or less enhanced. However, the experimental group made more progress than their counterpart under the condition that only the experimental group was intensively and consciously exposed to the instruction of meta-cognitive strategies. From this fact, it can be said that the concerned

approach did generate positive effects on researched students' reading comprehension.

Before the treatment, the pre-questionnaire result demonstrated that both groups equally used 10 meta-cognitive strategies at medium level, which could not be comparable to the use of good readers' standard theoretically. Meanwhile, the post-questionnaire revealed the experimental performed better improvement than the control group regarding conscious use of meta-cognitive strategies although their level was not close to that of good readers.

The present study shed implications on EFL students and teachers alike, especially teachers of reading skills/classes. To students, it is concluded that meta-cognitive strategies are obviously useful for their English reading. Therefore, in order to achieve higher level of reading, students should keep themselves aware of the strategies, i.e. what these strategies are, when and where to use and how to apply them into reading tasks. In addition, it is advised that students devote time to practice the strategies in their actual reading since the more practice students have, the better they are in terms of strategy use; thus, the better comprehension they attain once reading in English. Likewise, teachers should invest more in effective methods to frequently incorporate explicit instruction of meta-cognitive strategies systematically in reading classes, i.e. teaching students how to use the strategies before, during and after reading. At the same time, teachers should be in charge of encouraging students to practice applying these strategies in in-class reading and extensive reading as well.

References

- Alderson, R. C. (2000). Research foundations to support wide reading. In V. Greaney (Ed.), *Promoting reading in developing countries* (pp.55-77). Newark, DE: International Reading Association.
- Almasi, J. F. (2003). *Teaching strategic processes in reading*. New York: Guilford Press.
- Ashman, A., & Conway, R. (1993). *Using cognitive methods in the classroom*. London: Routledge.
- Blakey, E., & Spence, S. (1999). *Developing metacognition*. New York: ERIC Clearinghouse on Information Resources.
- Brown, H. D. (1994). *Principles of language learning and teaching*. Englewood Cliffs: Prentice Hall.
- Carnine, D. et al. (1997). *Direct instruction reading*. Upper Saddle River, NJ: Prentice Hall.
- Cross, D. R., & Paris, S. G. (1988). Developmental and instructional analyses of children's metacognition and reading comprehension. *Journal of Educational Psychology*, 80(2), 131-142.
- Cubukcu, F. (2008). Enhancing vocabulary development and reading comprehension through metacognitive strategies. *Issues in Educational Research*, 18(1), 1-11.
- Eriksson, A. (2000). *Thinking forwards and backwards: Metamemory and metacomprehension abilities and strategies in text processing*. Linkoping University: Unpublished dissertation.
- Gersten, R. et al. (1998). *Improving reading comprehension for children with disabilities: A review of research*. Washington: Office of Special Educational Programs.
- Ghabanchi, Z. & Haji-Mirza, F. (2010). The effect of summarization on intermediate EFL learners' Gough, P. B., & Juel, C. (1991). The first stages of word recognition. In L. Rieben, & C. A. Perfetti (Eds.), *Learning to read: Basic research and its implications* (pp.47-56). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Greeno, J. G., Collins, A. M., & Resnick, L. B. (1996). Cognition and learning. In D. C. Berliner, & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 15-46). New York: MacMillan. Heinle & Heinle Publishers.
- Israel, S. E. (2007). *Using metacognitive assessments to create individualized reading instruction*. Newark, DE: International Reading Association.
- Jazen, J. (2003). Developing strategic readers in elementary school. *Reading Psychology*, 24, 25-55.
- Johns, A. M. & Mayes, P. (1990). An analysis of summary protocols of university ESL students. *Applied Journal of College Teaching and Learning*, 7(9), 53-60. *Linguistics*, 11(3), 254-271.
- Miciano, R. (2002). Self-questioning and prose comprehension: A sample case of ESL reading. *Asia*

- O'Malley, J. M., Russo, R. P., Chamot, A. U., & Stewner-Manzanares, G. (1998). Applications of learning strategies by students learning English as a second language. In C. E. Weinstein, E. T. Goetz, & P. A. Alexander (Eds.), *Learning and study strategies: Issues in assessment instruction and evaluation* (pp. 215-231). San Diego: Academic Press.
- Oxford, R. L. (1990). *Language learning strategies: what every teacher should know*. Boston, MA: Pacific Education Review, 3(2), 210-216.
- Paris, S. G., & Jacobs, J. E. (1984). The benefits of informed instruction for children's reading awareness and comprehension skills. *Child Development*, 55, 2083-2093.
- Paris, S. G., Wasik, B. A., & Turner, J. C. (1991). The development of strategic readers. In R. Barr, M. L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research Vol. 2*, (pp. 609-640). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Pressley, M. (2002). Comprehension strategies instruction: A turn-of-the-century status report. In C. C. Block, & M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp.11-27). New York: Guilford Press.
- Pressley, M., & Afflerbach, P. (1995). *Verbal protocols of reading: The nature of constructively responsive reading*. Hillsdale NJ: Erlbaum.
- reading comprehension and their performance on display, referential and inferential questions.
- Roehler, L. R., & Duffy, G. G. (1984). Direct explanation of comprehension processes. In G. G. Duffy, L. R. Roehler, & J. Mason (Eds.), *Comprehension instruction: Perspectives and Suggestions* (pp. 265-280). New York: Longman.
- Tercanlioglu, L. (2004). Postgraduate students' use of reading strategies in L1 and ESL context: Links to success. *International Education Journal*, 5(4), 562-570.
- Winograd, P., & Hare, V. C. (1988). Direct instruction of reading comprehension strategies: The nature of teacher explanation. In C. E. Weinstein, E. T. Goetz & P. A. Alexander (Eds.), *Learning and study strategies: Issues in assessment, instruction and evaluation* (pp.121-139). New York: Academic Press.
- Yore, L. D., Bisanz, G. L. & Hand, B. M. (2003). Examining the literacy component of science literacy: 25 years of language arts and science research. *International Journal of Science Education*, 25(6), 689-725.
- Zhang, L. J. & Wu, A. (2009). Chinese senior high school EFL students' metacognitive awareness and reading strategy use. *Reading in a Foreign Language*, 21(1), 37-59.
- Zhang, L. J. (2001). Awareness in reading: EFL students' metacognitive knowledge of reading strategies in an acquisition-poor environment. *Language Awareness*, 10(4), 268-288.

APPENDIX 1:

READING TEST

Time allotted: **30 minutes**

Name: _____ Age: _____

Gender: Male Female

Reading 1: Read the passage and choose the correct answers.

Orchids

If you are a **botany** student, you may learn about a special group of plants. It is the biggest group of plants that can have flowers. This special plant group is called orchids. There are approximately 22,000 different kinds of orchids. That is a considerable amount. Every year scientists identify about 800 new kinds. The scientists go into forests. They go up mountains. They spend months looking around for new plants. These investigations help them find new orchids.

There is a very large range of these plants on Earth. They are distributed all over the world. They grow on most continents. [a]. They grow in Asia, North America, South America, Africa, Europe, and Australia. [b]. Most grow in the hottest regions of the world. [c]. We call these hot places the tropics. [d]. The dense rainforests of South America and Asia are in the tropics. Orchids do not grow in deserts. They need a lot of water to grow well.

Orchids usually have bright flowers. These flowers have a very distinct look. They are very beautiful and interesting to look at. You can find orchids in almost every color. Some are large and some are small. They also have distinct smell or scent. The scent is used to make perfume. The flowers are seasonal. They bloom in spring and summer.

Orchids are a very ancient plant species. They have been around for millions of years. They have grown on the Earth since the time of dinosaurs.

1. The word **botany** in paragraph 1 is closest in meaning to
(A) general science (B) plant history (C) plant science (D) geography
2. According to the passage, scientists find new orchids by
(A) working in laboratory
(B) searching in people's gardens
(C) spending time in Asia and Africa
(D) traveling through jungles and mountain ranges
3. Which of the following is in closest meaning to the highlighted sentence in paragraph 2?
There is a very large range of these plants on Earth.
(A) There is a big variety of different kinds of orchids available.
(B) Earth is not the only place orchids grow but has the most kinds.
(C) The largest range of orchids grows in soil, not rock.
(D) Orchids are giant plants that have big roots systems.
4. Where could the following sentence be added into paragraph 2 of the passage?
They do not grow on Antarctica.
(A) At [a] (B) At [b] (C) At [c] (D) At [d]
5. Which of the following can be inferred about orchid flowers from paragraph 3?
(A) All orchid flowers look the same. (B) Orchids don't flower in fall and winter.
(C) They are always very expensive. (D) All perfume contains orchid scent.
6. According to the passage, which of the following is NOT true?
(A) they grow on all seven continents (B) most orchids grow in tropical regions
(C) they have grown on Earth for millennia (D) they are used in the perfume industry

Reading 2: Read the passage and choose the correct answers.

Health

Many schools have campaigns to get students to eat healthy foods. Schools fund these programs because a lot of people think that kids eat too much **junk food**. Junk foods have a lot of calories. The more calories food has, the more energy it can give us. We rely on calories for energy. It is not good if we consume too many calories. It could make us fat.

People need a certain number of calories per day. We need these calories for energy. We need energy for things like walking, running, working, and concentrating. [a]. If we eat more calories than we need, we can become fat. [b]. If we don't eat an adequate amount of calories, we may lose weight. [c]. If we lose too much weight, it could have a negative effect on our health. [d].

We also have to concentrate on what kind of calories we eat. Some calories have energy, but they are not healthy for us. They do not feature the vitamins that our bodies need. These calories are called "empty calories". Candy, soda and other foods with sugar have empty calories. These foods are not very good for us.

It is OK to eat these empty calories sometimes. However, we must remember to vary the food that we eat. This will give us a healthy diet. A diet with the right amount of good calories will make us healthy and strong. It will make our coordination better and help us get through the day.

1. The phrase **junk food** in the passage is closest in meaning to
(A) vitamins (B) unhealthy food (C) empty calories (D) garbage
2. According to the passage, empty calories are not good for us because
(A) they have too much energy. (B) they don't have enough energy.
(C) they don't have enough vitamins. (D) they can make us sick.
3. According to the passage, which of the following is NOT true of calories?
(A) A calorie is a unit of food energy. (B) There is more than one type of calorie.
(C) Empty calories are the best kind to eat. (D) Too many calories can make people fat.
4. Which of the following is in closest meaning to the highlighted sentence in paragraph 2?
People need a certain number of calories per day.
(A) People should eat a random amount of calories each day.
(B) People need to consume empty calories every day.
(C) People need to eat the right amount of calories every day.
(D) People need to eat vitamins every day.
5. Which of the following can be inferred about calories?
(A) They play an important part in our health. (B) Only adults need to worry about calories.
(C) Calories and vitamins are the same thing. (D) You should only eat empty calories.
6. Where could the following sentence be added into paragraph 2 of the passage?
That's why it is important to eat the right amount of calories.
(A) At [a] (B) At [b] (C) At [c] (D) At [d]

Reading 3: Read the passage and choose the correct answers.

How technology changed our phones

There have been many recent breakthroughs in technology. Now consumers can purchase the latest high tech toys. **This was not possible even a few years ago.** We don't have to carry our bulky CD players around anymore. Now, we can carry our whole music collection with us.

We can carry all of our music on our phones. That's right, our phones. A phone isn't just a phone anymore. Its primary purpose is to make and take calls. But now a phone is a multimedia center, too. We can play music, surf the Net, and even take pictures. It used to be that phones, record players, and cameras were all different tools. Now they are one and the same. More tools get added to phones every day. Sometimes a phone is two different tools. Sometimes it is even three different tools.

There are many different options for phones these days. Sometimes a phone is also a camera. Other times it is an MP3 player. In some cases, it is a personal planner. It can also be a mini-computer. Sometimes a phone is all of these things put together.

The introduction of MP3 computer files was very important. It made it possible for us to store music in digital format. This means that there is no album or disc. We can acquire music by going onto the Internet and downloading it. We can download our favorite songs right onto our phones. We can use the cameras in our phones to take pictures. Then we can email the pictures to friends. We can do all of this with our phones.

Technology has led to a shift in how we do things. Prior to this, our high tech phones were not possible. We could only dream about the phones of today.

1. According to the passage, the new high tech devices are available because of
(A) cheaper prices (B) demand
(C) the Internet (D) breakthroughs in technology
2. Which of the following is in closest meaning to the highlighted sentence in paragraph 1?
This was not possible even a few years ago.
(A) It was possible to have breakthroughs in technology in the past.
(B) Consumers could not purchase the latest high tech toys some years ago.
(C) It was possible to buy high tech toys a few years ago.
(D) It was impossible for people to buy CD players some years ago.
3. The word **it** in paragraph 4 refers to
(A) a cell phone (B) an MP3 player (C) a camera (D) music
4. The author's description of cell phones mentions all of the following EXCEPT
(A) televisions (B) cameras (C) MP3 players (D) mini-computers
5. Which of the following can be inferred about MP3 files?
(A) They are expensive. (B) They sound better than CD.
(C) They can be bought in more places. (D) They made cell phone cameras possible.
6. The author discusses different options for phones in paragraph 3 in order to
(A) show how advanced the new phone are (B) explain how phone work
(C) show how advanced camera are (D) explain how MP3 players work
7. According to the passage, what are the primary uses of phone?
(A) a multimedia center (B) making and receiving calls
(C) making calls, receiving calls and taking pictures (D) playing music, surfing the net and taking pictures
8. According to the passage, what are the optional uses of phones?
(A) watching TV, listening to music and taking pictures
(B) phones, record players and camera
(C) listening to music, taking pictures and personal planner
(D) camera, MP3 players, mini-computer, television

APPENDIX 2: QUESTIONNAIRE

(on Learners' Metacognitive Strategy Use)

Name: _____ Age: _____

Gender: Male Female

The purpose of this survey is to collect information about the various techniques you use when you read materials in English (e.g., reading textbooks for homework or examinations, reading journal articles, etc.). All the items below refer to your reading of school-related materials (such as textbooks, reading comprehension exercises, or other supplementary readings related to course contents). Each statement is followed by five numbers (1, 2, 3, 4, and 5), and each number means the following:

1= "I never or almost never do this."

2= "I do this only occasionally."

3= "I sometimes do this." (About 50% of the time)

4= "I usually do this."

5= "I always or almost do this."

After reading each statement, tick (✓) the appropriate column (1, 2, 3, 4, or 5) which applies to you. Note that there is NO RIGHT OR WRONG RESPONSE to any of the items on this survey.

| Statement | 1 | 2 | 3 | 4 | 5 |
|--------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| Planning strategies | | | | | |
| 1. I had a purpose in mind when I read. | | | | | |
| 2. I made sure I understood what to be done with the text. | | | | | |
| 3. Before I started reading, I previewed the text organization and tried to predict the content of the text. | | | | | |
| 4. When I finished reading one part of the text, I guessed what would be mentioned in the next part. | | | | | |
| 5. I thought about how the text related to what I already knew. | | | | | |
| 6. I used my prior knowledge or experiences to help me understand the text. | | | | | |
| Monitoring strategies | | | | | |
| 7. I used context clues to help me better understand what I was reading. | | | | | |
| 8. When I met an unknown word, I ignored it immediately. | | | | | |
| 9. I made an outline of the text I read. | | | | | |
| 10. I visualized the information (e.g. pictures, charts, diagrams) to help remember what I read. | | | | | |
| 11. I took notes of the key expressions or ideas while reading to help me understand the text. | | | | | |
| 12. I wrote a summary of the text by my own words after reading. | | | | | |
| 13. I adjusted my reading speed according to the level of text difficulty and my understanding. | | | | | |
| 14. When I did not understand the text, I reread it. | | | | | |
| 15. I asked myself questions I liked to be answered in the text. | | | | | |
| 16. I wondered about the implication of the text author | | | | | |
| Evaluating strategies | | | | | |
| 17. I checked to see whether my prediction about the text was right or wrong. | | | | | |
| 18. I analyzed and evaluated the information presented in the text rather than passively accept everything. | | | | | |
| 19. I used multiple techniques to understand a text (e.g. guessing meaning, underlining key points, etc.). | | | | | |
| 20. I was aware of which strategy to use and how or when to use it. | | | | | |