Reading Strategies and Factors Affecting the Use of Such Strategies by Thai EFL English Majors Enrolled in Public and Private Universities in the Bangkok Metropolitan Area

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การวิจัยนี้ศึกษาลักษณะการอ่านและปัจจัยที่มีผลต่อการใช้กลวิธีการอ่านภาษาอังกฤษของนักศึกษาเอกวิชาภาษาอังกฤษที่ศึกษาในมหาวิทยาลัยรัฐบาลและเอกชนในเขตกรุงเทพมหานคร กลุ่มตัวอย่างประกอบด้วย นักศึกษาจำนวน 482 คน และงานวิจัยชิ้นนี้เป็นงานวิจัยเชิงปริมาณและเชิงคุณภาพ เครื่องมือวิจัย ประกอบด้วย แบบสอบถามการใช้กลวิธีการอ่านที่ติดแปลงจากงานของ Mokhtari and Sheorey (2002) การสัมภาษณ์แบบ Think-aloud การสัมภาษณ์แบบคริสต์ยันทรายและการศึกษาเอกสารเพิ่มเติม ผลวิจัยชิ้นนี้ ผู้เข้าร่วมตอบแบบสอบถามใช้กลวิธีการอ่านที่หลากหลายแต่กลวิธีการอ่านแบบ Problem-solving จะถูกใช้มากที่สุด โดยรวมแล้วปัจจัยที่มีผลกระทำต่อการใช้กลวิธีการอ่าน คือ รูปแบบการสอนและการประเมินความสามารถในการอ่านของผู้อ่านเอง นอกจากนี้ ผลจากการวิเคราะห์คุณภาพ พบว่า ระดับความสามารถในการใช้ภาษาอังกฤษ ระดับชั้นปี โอกาสในการใช้ภาษาอังกฤษ และรูปแบบการสอนเป็นปัจจัยที่ส่งผลต่อการใช้กลวิธีการอ่าน

คำสำคัญ: กลวิธีการอ่านภาษาอังกฤษ การใช้ภาษาอังกฤษเป็นภาษาต่างประเทศ กลวิธีกิจกรรม

Abstract

This study aims to investigate reading strategies and factors affecting the use of strategies of Thai EFL English majors enrolled in public and private universities in Bangkok. The participants were 482 college students and the study used both quantitative and qualitative analysis. In addition to using the questionnaire adapted from The Survey of Reading Strategies (SORS) questionnaire (Mokhtari and Sheorey, 2002), think-aloud protocols, retrospective interviews, and document study were used. The quantitative results demonstrated that the participants used a combination of reading strategies but the problem-solving strategies seemed to be the most reported strategies used. Overall, the factors affecting the use of reading strategy were the instructional type and the self-rated reading ability type. In addition, qualitative data showed that the English proficiency levels, the years in school, the opportunity to use English, and the instructional type affected the participants’ strategy use.

Keywords: Reading Strategies, EFL, Metacognition
Introduction

English is a common international language. In an era of globalization, students need to be competent in English (Oranpattanachai, 2010: 27; Pang, 2008). The higher the level of education, the greater is the need for English competency. Among the four language skills, reading can be the most important one for students studying English as a foreign language or EFL students. Reading is important in that it is often the foundation for developing other skills such as listening, writing, and speaking (Chang, 2005:1; Chomphuchart, 2009). Reading is essential for English majors in particular, since they are expected to be fluent in the language and to acquire knowledge conveyed through the language.

Reading Strategies

Because of the complexity and amount of material English majors must cover each semester, it is important that their English reading be efficient enough to fully understand the texts. Consequently, English majors need to develop the reading strategies that are assumed to be vital for their reading comprehension. Researchers have pointed out that reading proficiency could be developed through the use of reading strategies, which are the conscious actions readers take while they are reading.

Afflerbach, Pearson, and Paris (2008) define reading strategies as deliberate, goal-directed steps to decode, understand and construct meaning, while Philip and Tan (2006) point out that knowing about strategies and how to use them is not enough, good readers need to be able to apply those strategies appropriately. That is, readers are required to know when and why various strategies are used to accomplish different tasks and reading purposes. This is in line with Zhang and Wu’s (2009) suggestions that reading strategies themselves are not naturally good or bad but readers need to be able to select and use them effectively in different situations and different contexts.

In order to help struggling EFL students overcome reading failure, researchers have investigated reading strategies using various categorizations including Global/Problem-solving/Support (Mokhtari and Sheorey, 2002), Cognitive/Metacognitive/Social/Affective (O’Malley and Chamot, 1990), Metacognitive/Cognitive/Support (Sheorey and Mokhtari, 2001), as well as a combination of these (Plakans, 2009). Some scholars used the term Top-down reading strategies vs. Bottom-up reading strategies (Anderson and Nunan, 2008). Top down reading strategies involve reading for main idea, discourse organization, and the use of background knowledge while bottom-up reading strategies focus
on word level decoding, sentence structure and textual details. Another view on reading strategies includes the difference between Metacognitive and Cognitive based in English monolingual research by Flavell (1979: 906-911). Metacognitive strategies are defined as an awareness of one’s own learning and thinking, while cognitive strategies process the language for the task (Plakans, 2009). Other reading experts also categorized reading strategies by purpose or function, and grouped them as goal-motivated actions. However, in this study, the researcher adopted reading strategies categorized by Mokhtari and Sheorey (2002).

**Cognitive Strategies**

Cognitive reading strategies can be defined as a process for enhancing comprehension and overcoming comprehension failures. They are the actions and procedures that readers use while working directly with the text. The cognitive strategies used by students have been identified in a number of studies (Bell, 2007; Salataci and Akyel, 2002; Sheorey and Mokhtari, 2001; Tapinta, 2006). Previous studies (Erten and Karakas, 2007; Erten and Razi, 2009) suggested that cognitive reading strategies such as rereading, adjusting one’s reading speed, visualizing information, scanning, skimming, and asking questions can lead to literal comprehension. In contrast, a combination of metacognitive reading strategies such as having a purpose in mind when reading, checking one’s own understanding while reading, analyzing and evaluating the information, deciding what to read closely and what to ignore and reviewing the text possibly lead to a higher level of comprehension (Songsriengchai, 2010; Wichadee, 2011).

**Metacognitive Strategies**

Metacognitive strategies are knowledge of one’s own thinking. It also includes knowledge about one’s own cognitive resources and knowledge about the task demands (Philip and Tan, 2006). This is elucidated by Hartman (2001) when he points out that metacognition involves awareness of and control over one’s own learning activity and use of strategies. Three important metacognitive strategies are planning, monitoring, and evaluating (Hudson, 2008; Macaro and Erler, 2008). Knowledge of metacognitive strategies is critical if readers want to regulate their strategy use while reading. Previous studies have suggested that students who exhibit an extensive use of metacognitive strategies read more effectively and perform better on exams (Amer, Barwani, and Ibrahim, 2010: 102; Ofudu and Adedipe, 2011: 343; Wu, 2005).

In literature, cognitive and metacognitive strategies have been considered as closely related. In this study, the Mokhtari and
Sheorey’s (2002) Reading Strategy Model was employed. Therefore, the researcher may use the term “Metacognitive” and “Global” interchangeably, since the Global reading strategies defined by Mokhtari and Sheorey (2002) are categorized as metacognitive strategies by many researchers. Also, the terms “Cognitive” and “Problem-solving” might be used interchangeably in this study since they are classified as cognitive reading strategies by other researchers (Hamdan, et al., 2010; Phakiti, 2003, 2006; Plakans, 2009; Salataci and Akyel, 2002; Zhang and Wu, 2009).

According to Mokhtari and Sheorey (2002), Global Reading Strategies (GLOB) are those intentional, carefully planned techniques by which learners monitor their reading, such as having a purpose in mind, previewing the text as to its length and organization, use prior knowledge, critically analyze and evaluate the information. Problem Solving Strategies (PROB) are the actions and techniques that readers use while working directly with the text. Examples include adjusting one’s speed of reading when the material becomes difficult or more easy, guessing the meaning of unknown words, and rereading the text to improve comprehension.

Factors Affecting Strategy Use

Several studies have revealed that the use of reading strategies is affected by various factors such as gender (Pimsarn, 2009; Shmais, 2003), native and non-native type (Sheorey and Mohktari, 2001), English proficiency (Mokhtari and Sheorey, 2002; Wichadee, 2011), field of study (Yuthana, 2007), school year (Lovett and Flavell, 1990; McDonough, 1999), text difficulty level (Ikeda and Takeuchi, 2000), text type (Songsiengchai, 2010), duration of study in the target language (Upton, 1997: 5), cultural background (Exley, 2005), gloss condition (Ko, 2005), reading attitude (Butler, 2007; Martinez, Aricak, and Jewell, 2008; Yamashita, 2004), native language (Alsheikh, 2011), parental influence (Toomaneejinda, 2010) and social context (Bell, 2007).

EFL Reading Strategies and Reading Comprehension

A large number of experimental studies have established a positive relationship between strategies and EFL reading comprehension. Many researchers have concluded that the use of various strategies can improve students’ reading comprehension. Zhang and Wu (2009) investigated metacognitive awareness and reading strategy use by EFL Chinese high school students by means of a 28-item Survey of Reading Strategies (SORS). Results showed that students who were proficient reported using metacognitive and cognitive reading strategies more often
than those students who were less proficient. Their findings support previous research (Aeppongpaow. 2008: 79; Hamdan, et al., 2010: 135; Wu, 2005) in the sense that proficient readers generally display a higher degree of metacognitive awareness than their less-proficient counterparts.

Unlike the Zhang and Wu (2009) study, which explored EFL Chinese high school students’ metacognitive awareness, Plakans (2009) investigated the role of reading strategies in integrated L2 writing tasks of 12 EFL undergraduate and graduate students who enrolled in two universities in the U.S. The research focused on finding what particular reading strategies were used for completing specific stages in various tasks and what relationship existed between strategies and writer’s performances. Data collection came from think-aloud protocols and interviews. Results revealed five reading categories: goal-setting, cognitive processing, global strategies, metacognitive strategies and mining strategies. Plakans suggested that the participants were more likely to use bottom-up strategies, which focused more on word and sentence level comprehension. Plakans further suggested that the results supported previous research that more-proficient learners use metacognitive strategies more frequently. She concluded that appropriate strategy choice was as important as frequency of strategy use.

Bell (2007) explored Thai postgraduate students’ use of metacognition when reading at an Australian university. The six participants came from different academic majors namely Chemistry, Design, Computer Science, Public Health, Education, Art, Banking and Finance. Through the use of interviews and think-aloud protocols, results showed that there were significant differences in the students’ reading practices between first and third semesters. Results also revealed that students used different reading strategies to overcome reading comprehension failure such as guessing, using background knowledge, making a judgment, and translating from L1 to L2. However, the investigator mentioned that the Thai educational system and the educational background of the students highly affect the way students read English and that Australian supervisors need to be aware of these differences.

Unlike Bell’s study (2007), which focused on Thai postgraduate students’ use of metacognition in an Australian learning context, the purpose of Tapinta’s study (2006) was to investigate Thai university students’ awareness and application of cognitive and metacognitive strategies when reading and writing in an EFL context. The participants were two proficient and two less-proficient learners who were selected from 14 students enrolled in a five-week course offered at a university in Bangkok. Findings demonstrated
that strategic knowledge improved the participants’ proficiency in English reading and writing. The researcher suggested that two critical factors impeding their gains were the reader’s lack of vocabulary knowledge and limited opportunities to use English in a real context. The researcher suggested students’ ability would be strengthened if teachers scaffold strategies and give students opportunities to discuss the use of strategy with their classmates. Additionally, the learners’ schema and knowledge of text structures play significant roles in their development of the two skills.

Wichadee (2011) investigated the effects of Metacognitive strategy instruction on EFL Thai university students’ reading proficiency. The instruments included a 30-item multiple-choice test of reading skill, a 5-point Likert scale metacognitive questionnaire and a semi-structured interview. Findings demonstrated that teaching metacognitive strategies might be an effective way to improve students’ reading comprehension and that non-proficient readers can become proficient readers if they are given instruction in effective reading strategies.

There is still a diversity of results in the study of factors that truly affect EFL students’ use of reading strategies and the population of English majors has been under represented in the relevant literature. Therefore, this study aims to investigate the nature of reading strategies used by Thai EFL English majors enrolled in public and private universities in the Bangkok area when they interact with English academic texts. The researcher attempts to study English majors in both public and private universities in order to gain deeper understanding of how the students in both learning contexts use reading strategies while reading English academic materials.

The study aims to answer three main questions:

1) What reading strategies are used by Thai EFL English majors enrolled in public and private universities in the Bangkok area when they interact with English academic texts?

2) How often do they use those strategies?

3) What is/are the factor(s) affecting the use of such strategies?

Method

This study was divided into two phases. First, a survey research method was used to answer questions about what reading strategies were used and how often they were used, and the effects of gender, age, instructional type, the length of time spent studying English and English GPA insofar as they affect the use of reading strategies of the participants. Second, in order to gain in-depth information about students’ actual use of reading strategies, think-aloud and retrospective interviews were conducted.
Therefore, this study is an explanatory design in nature as quantitative data was first collected and analyzed, followed by follow-up qualitative interviews of respondents to elaborate quantitative results (Heigham and Croker, 2010).

**Data Collection: Quantitative**

There were 144 male and 338 female sophomore, junior and senior students from three public and three private universities in the Bangkok metropolitan area. The mean age of the participants was 20 years, with the mean English GPA of 2.80. The materials used were as follows:

1. **Background Information Sheet**
   (Oxford, et al., 2004) (Appendix A)

2. **Edited Survey of Reading Strategy Questionnaire** (Mokhtari and Sheorey, 2002). The edited SORS is intended to measure the type and frequency of reading strategies that adolescent and adult EFL students perceive they use while reading academic materials in English. Findings from the pilot study suggested that the questionnaire be written both in English and in Thai. Therefore, in order to guarantee successful data collection and avoid comprehension difficulties, the questionnaire was administered in English and in Thai. The final questionnaire was reviewed for clarity, readability, and appropriacy by a university lecturer who holds a Ph.D. in applied linguistics and is proficient in both English and in Thai. The edited SORS consists of 30 items, each of which uses a 5-point Likert scale ranging from 1 (never) to 5 (always). After administration of the edited SORS questionnaires the reliability coefficient was .89 (Cronbach Alpha) which is viewed as appropriate. (Appendix B)

**Data Collection: Qualitative**

In addition, 12 full-time male and female students, with high and low English GPA, (High group and Low group henceforth) from 6 different universities were randomly selected to participate in in-depth interviews and think-aloud protocols.

There were two stages to the qualitative data collection in this study. In order to get a clear picture of the role of reading strategies in the EFL academic reading process, both think-aloud protocols and retrospective interviews on the think-aloud protocols were used as a means for looking at what reading strategies the participants used and how often they used them during the actual reading tasks. Think-aloud protocols have the advantage of giving a more direct view of how readers process a text as they indicate what they are doing and thinking. Retrospective interviews provide an opportunity for the researcher to ask questions in order to gain better explanations of what was reported during the think aloud recording. Pressley and Affiebach
(1995) support the value and validity of using verbal protocols to investigate the conscious processes of reading.

Prior to the reading processes, the participants were asked to practice the think-aloud in front of a tape recorder; reading of the academic text helps avoid any difficulty they may encounter when verbalizing their thoughts. In addition to the think-aloud recording, retrospective interviews were conducted following each session to ask participants about the difficulty of the reading task and topic, their reading strategy use during reading, and general comments on the reading tasks and their performances. The interviewed participants were allowed to speak English or Thai or both languages depending on their preference. Mostly, the participants thought aloud using Thai and therefore, the researcher translated it from Thai to English. Also, the interviewed participants who used English had their English edited by the researcher for accuracy and appropriateness.

During the interviews and the think-alouds, the researcher also made analytical notes. These notes were triangulated with the think-aloud, the retrospective interviews and the participants’ work during the coding process to follow up on patterns in the data. The transcripts from 12 participants were coded by the researcher who coded based on the taxonomy of Mokhtari and Sheory (2002). For instance, sections where students verbalized their thoughts were highlighted as episodes for coding and analysis. After these highlighted sections were divided into idea units to capture individual thoughts, they were coded as strategies.

**Text.** The text was approximately 400 words in length and the topic was “Should metal detectors be installed in schools?” The criteria for selecting the text were 1) The text should not be biased nor gender sensitive, 2) It should be thought-provoking. There were also difficult vocabulary reviews and a short vocabulary exercise above the reading passage. In addition, the passage included difficult words in bold print and one short multiple-choice question for the participants to check their comprehension. (See Appendix C)

**Students’ Work.** During the think-aloud, the students were able to underline, mark, highlight or make notes of any important words in their reading selection. The investigator collected the students’ work for further analyses and triangulation.

It should be noted that all the instruments, namely the revised SORS questionnaire, the academic reading text, and the interview questions were reviewed and corrected by a Ph.D. qualified person who is an expert in evaluating research instruments.

**Data Analysis**

To answer all research questions, the
Statistical Package for Social Sciences (SPSS) version 17.0 was used. Techniques of descriptive statistics such as means and standard deviation, together with multiple regressions, were used in the course of data analysis and testing. In this present study, in order to deal with the missing case in multiple regressions, the researcher substituted mean scores for missing data. In conducting the multiple regressions, the researcher used the ‘Backward Elimination’ method for entering the variables. In examining participants’ reading strategy use in terms of the Likert scale that ranges from 1-5, this study used three usage levels as suggested by Oxford and Burry-Stock (1995). That is, a mean of 3.50 or higher fell into the high-usage level, a mean of 2.50-3.49 fell into the medium-usage level and a mean of 2.49 or lower fell into the low-usage level. The researcher also used the coding system (Global, Problem-solving and Support) based on Mokhtari and Sheorey’s (2002) Survey of Reading Strategies.

**Results**

To examine the participants’ strategy use, the results will be presented in two sections (quantitative and qualitative) that answer the study’s research questions. The first research question was to investigate the reading strategies used by the English major students. Table 1 illustrates the use of reading strategies reported as used by the participants.

**Quantitative Results**

**Overall strategy use**

**Table 1** Overall Reading Strategy Use Arranged in Descending Order According to Means

<table>
<thead>
<tr>
<th>Category</th>
<th>Strategy</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prob</td>
<td>25. When text becomes difficult, I reread it to increase my understanding</td>
<td>3.94</td>
<td>0.942</td>
</tr>
<tr>
<td>Sup</td>
<td>13. I use reference material (a dictionary) to help me understand what I read.</td>
<td>3.88</td>
<td>1.034</td>
</tr>
<tr>
<td>Prob</td>
<td>28. When I read, I guess the meaning of unknown words or phrases.</td>
<td>3.81</td>
<td>0.933</td>
</tr>
<tr>
<td>Sup</td>
<td>10. I underline or circle information in the text to help me remember it.</td>
<td>3.81</td>
<td>1.009</td>
</tr>
<tr>
<td>Prob</td>
<td>9. I try to get back on track when I lose concentration.</td>
<td>3.79</td>
<td>0.876</td>
</tr>
<tr>
<td>Glob</td>
<td>24. I try to guess what the content of the text is about when I read.</td>
<td>3.77</td>
<td>0.811</td>
</tr>
<tr>
<td>Glob</td>
<td>20. I use typographical features like bold face and italics to identify key information.</td>
<td>3.72</td>
<td>0.905</td>
</tr>
<tr>
<td>Prob</td>
<td>7. I read slowly and carefully to make sure I understand what I am reading.</td>
<td>3.71</td>
<td>0.939</td>
</tr>
</tbody>
</table>
**Table 1 (cont.)** Overall Reading Strategy Use Arranged in Descending Order According to Means

<table>
<thead>
<tr>
<th>Category</th>
<th>Strategy</th>
<th>(M)</th>
<th>(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prob</td>
<td>14. When text becomes difficult, I pay closer attention to what I am reading.</td>
<td>3.67</td>
<td>0.970</td>
</tr>
<tr>
<td>Sup</td>
<td>29. When reading, I translate from English into Thai.</td>
<td>3.65</td>
<td>1.005</td>
</tr>
<tr>
<td>Glob</td>
<td>4. I take an overall view of the text to see what it is about before reading.</td>
<td>3.63</td>
<td>1.014</td>
</tr>
<tr>
<td>Prob</td>
<td>19. I try to picture or visualize information to help remember what I read.</td>
<td>3.55</td>
<td>1.035</td>
</tr>
<tr>
<td>Glob</td>
<td>3. I think about what I know to help me understand what I read.</td>
<td>3.53</td>
<td>0.842</td>
</tr>
<tr>
<td>Glob</td>
<td>17. I use context clues to help me better understand what I am reading.</td>
<td>3.50</td>
<td>1.055</td>
</tr>
<tr>
<td>Glob</td>
<td>15. I use tables, figures, and pictures in text to increase my understanding.</td>
<td>3.49</td>
<td>1.043</td>
</tr>
<tr>
<td>Sup</td>
<td>30. When reading, I think about information in both in English and in Thai.</td>
<td>3.47</td>
<td>0.901</td>
</tr>
<tr>
<td>Glob</td>
<td>1. I have a purpose in mind when I read.</td>
<td>3.42</td>
<td>0.818</td>
</tr>
<tr>
<td>Prob</td>
<td>16. I stop from time to time and think about what I am reading.</td>
<td>3.41</td>
<td>0.895</td>
</tr>
<tr>
<td>Sup</td>
<td>22. I go back and forth in the text to find relationships among ideas in it.</td>
<td>3.35</td>
<td>0.888</td>
</tr>
<tr>
<td>Glob</td>
<td>23. I check my understanding when I come across new information.</td>
<td>3.35</td>
<td>0.916</td>
</tr>
<tr>
<td>Glob</td>
<td>27. I check to see if my guesses about the text are right or wrong.</td>
<td>3.33</td>
<td>0.933</td>
</tr>
<tr>
<td>Prob</td>
<td>11. I adjust my reading speed according to what I am reading.</td>
<td>3.28</td>
<td>1.013</td>
</tr>
<tr>
<td>Sup</td>
<td>18. I paraphrase (restate ideas in my own words) to better understand what I read.</td>
<td>3.28</td>
<td>0.889</td>
</tr>
<tr>
<td>Glob</td>
<td>21. I critically analyze and evaluate the information presented in the text.</td>
<td>3.25</td>
<td>0.897</td>
</tr>
<tr>
<td>Glob</td>
<td>12. When reading, I decide what to read closely and what to ignore.</td>
<td>3.23</td>
<td>0.968</td>
</tr>
<tr>
<td>Sup</td>
<td>26. I ask myself questions I’d like to have answered in the text.</td>
<td>3.07</td>
<td>0.963</td>
</tr>
<tr>
<td>Sup</td>
<td>2. I take notes while reading to help me understand what I read.</td>
<td>2.97</td>
<td>0.994</td>
</tr>
<tr>
<td>Glob</td>
<td>6. I think about whether the content of the text fits my reading purpose.</td>
<td>2.96</td>
<td>0.965</td>
</tr>
<tr>
<td>Sup</td>
<td>5. When text becomes difficult, I read aloud to help myself understand what I read.</td>
<td>2.90</td>
<td>1.206</td>
</tr>
<tr>
<td>Glob</td>
<td>8. I review the text first by noting its characteristics, like length and organization.</td>
<td>2.83</td>
<td>1.039</td>
</tr>
</tbody>
</table>

Note: Glob = Global Strategies; Prob = Problem-solving Strategies; Sup = Support Strategies
In examining the overall strategy use, the five strategies reported as used most frequently were item numbers 25 (When text becomes difficult, I reread it to increase my understanding), 13 (I use reference material (a dictionary) to help me understand what I read), 28 (When I read, I guess the meaning of unknown words or phrases), 10 (I underline or circle information in the text to help me remember it) and 9 (I try to get back on track when I lose concentration). The items that the participants reported as used least frequently were strategy item numbers 8 (I review the text first by noting its characteristics like length and organization), 5 (When the text becomes difficult, I read aloud to help me understand what I read), 6 (I think about whether the content of the text fits my reading purpose), 2 (I take notes while reading to help me understand what I read), and 26 (I ask myself questions I’d like to have answered in the text). It can be seen that the five highest strategies that were reported as used by participants were from the Problem-solving and Support Strategy categories.

According to the second research question concerning the frequency of strategy use, the results (Table 1) showed that 14 of the 30 strategies fell in the high-usage group (mean of 3.50 or more), while the remaining 16 strategies had means of between 2.83 and 3.49, indicating medium usage of these strategies. No strategy was reported as used with low frequency (mean below 2.49). As Table 2 shows, the descriptive statistics revealed that overall the participants reported using reading strategies moderately. The overall mean score of reading strategies is 3.47 and it fell under the medium-usage level. In terms of the type of strategy used, Table 2 shows that the surveyed participants on the whole reported using the Problem-solving strategy category more than the other two strategy categories and the mean fell into the high-usage level ($M = 3.65$) as suggested by Oxford and Burry-Stock (1995). The other mean scores in the two other strategy categories (Global and Support) fell into the medium-usage level ($M = 3.38$ and 3.38 respectively).

**Table 2** Mean Frequencies: Three Strategy Categories

<table>
<thead>
<tr>
<th>Strategy Categories</th>
<th>$M$</th>
<th>Frequency Usage Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>3.47</td>
<td>Medium</td>
</tr>
<tr>
<td>Global</td>
<td>3.38</td>
<td>Medium</td>
</tr>
<tr>
<td>Problem-solving</td>
<td>3.65</td>
<td>High</td>
</tr>
<tr>
<td>Support</td>
<td>3.38</td>
<td>Medium</td>
</tr>
</tbody>
</table>
According to the third research question concerning the factors that affect the participants’ reading strategy use, the results of multiple regression indicated that factors that affected the participants’ overall reading strategy use (Figure 1) were 1) the instructional type and 2) the self-rated reading ability $[F(9, 431 = 4.167) p \leq .000]$. This means the instructional type is a significant predictor of the overall strategy use. Also, the surveyed participants who perceived themselves as excellent readers significantly reported a higher use of overall reading strategies whereas the surveyed participants who perceived themselves as poor readers significantly reported lower use of overall reading strategies.

According to the Global Category, results show that there were three factors affecting the participants’ reading strategy use (Figure 2). Those three factors were 1) The length of time studying English 2) the instructional type, and 3) the self-rated reading ability $[F(3, 472 = 8.718) p \leq .000]$. The findings revealed that the surveyed participants who had spent a lot of time studying English were more likely to use Global strategies. In addition to the duration of studying English, the instructional type had a significant effect on use of the Global strategy. Also, the participants who perceived themselves as excellent readers were likely to report using the Global strategies more frequently than those who perceived themselves as poor readers.

As for the Problem-solving and Support categories (Figure 3 and 4), there was only one factor affecting the participants’ reading strategy use. It was the self-rated reading ability $[F(1, 476 = 7.134) p \leq .008]$ and $[F(1, 476 = 22.604) p \leq .001]$ respectively. The findings revealed that the participants who perceived themselves as excellent readers reported using the Problem-solving and Support strategies more frequently than those who perceived themselves as poor readers.

**Qualitative Results**

These results are based on the first research question concerning what reading strategies were used by the Thai English major participants. From the think-aloud and the retrospective interviews, the participants mentioned that they employed several reading strategies to help themselves understand the material better. Among the strategies cited most by all 12 participants were 1) Using context clues and the surrounding words, 2) Using background knowledge, 3) Using supportive strategies, and 4) translate to Thai when they did not understand.

1) **Using Context Clues and Surrounding Words.** Of the Reading strategies mentioned by students, using context clues was the most frequently mentioned. All of the participants mentioned, accordingly, that when they encountered an unknown word in a text,
they always used the clues embedded in
the text around the unknown word to figure out
what the word means. Below is an interview
excerpt from Varut, a male student from a
public university.

Varut: Normally, my teachers told me that
I don’t need to know all the vocabulary. What
we should do is look at the surrounding words
or surrounding sentences and try to get the
gist. I agree. Even though we know all the
words, we can’t truly understand it. It doesn’t
help. I think the most important thing is
comprehension, not just the amount of
vocabulary you know. If you know all words
and you don’t get the overall meaning, you fail.

2) Using Background Knowledge. The
results showed that schema is vital to
reading comprehension. All of the interviewed
participants reported using the strategy,
“I think about what I know to help me
understand what I read”. All of the 12
interviewed participants reported that
knowledge of the topic highly correlated with
the reading comprehension achievement. They
also stated that during reading they tried to
activate background knowledge to better
comprehend the text. Below is an interview
excerpt from Sutthigarn, a female student from
the High group.

Sutthigarn: I think background knowledge is
very important. Without background knowledge,
the reading is difficult. I think I heard about this
situation. There were so many students who
died. The vocabulary is quite difficult but I think

I can guess because I read about it somewhere.
So it helps. Sometimes, when you read a lot
and when you listen to the news, it helps you.

In contrast to Sutthigarn, who was able
to comprehend the text, Sirinya, a female
student from the Low group, had difficulty in
comprehending the text because of her lack
of background knowledge.

Sirinya: To tell you the truth, I don’t quite
understand what the author is saying. I don’t
really read newspapers. I love reading comics.
In this passage, the vocabulary is too difficult.
I had difficulty reading it from the very first
sentence. They are saying about one school
here, so I try to think and guess. Something
might happen here at this school. Ok, I
understand this word “shooting” and “guns”.
But I don’t really understand the rest. I try to
think but I don’t think it works. I don’t know
much about the subject matter.

3) Using Supportive Strategies. The
supportive strategies ranged from simple
strategies such as highlighting and underlining,
to more personal strategies such as putting
an asterisk above a key word, or drawing back
arrows to show cause and effect. In this study,
the 12 participants remarked unanimously
that they used supportive strategies such as
“highlighting or underlining important ideas”.
However, they usually used the strategies
differently from each other. Suttigarn (High
group), for example, used different types
of supportive strategies such as ≠ whereas
Nawin (High group) drew a picture of a
backward arrow and an asterisk. Generally, the interviewed participants mentioned that they used these supportive strategies to remind themselves that pieces of information they read were connected ideas. Some participants drew an arrow above or close to the data they thought was related to other data. Nawin, for example, stated that while reading, he put an asterisk above the key words to remind himself that those key words were significant and that he should pay close attention to them. Below is an example from Nawin.

Nawin: Oh, here, I drew an asterisk here. I wanted to remind myself that it was important. By doing this, it’s easier for me to go back and look for important part. Also, it can save your time.

This is another example from Sutthigarn

Sutthigarn: For example, I drew this symbol ≠ above the sentences “metal detectors should be installed in schools” and “Metal detectors should not be installed in schools” to remind myself that these sentences are two contradicting ideas.

4) **Translate to Thai when they don’t understand.** All participants stated that they would translate the sentences that they did not understand from English to Thai for better comprehension. Nevertheless, they mentioned that if they understood the text, they did not need to translate from English to Thai. This is an interview excerpt of Niralda, a female student from the High group.

Niralda: I don’t understand the terms “juvenile” and “lethality”. So I have to translate the whole sentence from English to Thai in order to get a better idea of what it is. The vocabulary is difficult here so I need to translate. But if the vocabulary is easy, I just read it and it just gets into my head.

This example shows that Niralda was aware that she had difficulty in comprehending the text. She then translated the problematic sentence from English to Thai to get a better idea.

According to the second research question concerning how often the participants used the reading strategies. Results from the retrospective interviews showed that the majority of the interviewed participants used reading strategies very often. Visarat and Sutthigarn, for example, pointed out that they used numerous reading strategies while reading texts in English. Below is Visarat’s interview excerpt:

Visarat: Every time I read, I have to ask myself whether I will be able to understand it. You need to ask yourself that question first. Also, you have to know your strengths and weaknesses. I can say I normally use many reading techniques while reading. I use them every time I read. For example, I set the purpose before reading. I create a visual graph in my mind. I also look at the text structure. When you read a book, normally, textbooks have the same format. For example, headings, subheadings are generally provided in each book chapter. When I have that visual image in my mind, it
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helps me when I am in the exam room. I will be able to visualize the format of the texts. It helps me to understand. If you ask me how often I use reading strategies, I can say, I always use them. It’s better than doing nothing.

Apart from using various reading strategies that enabled him to construct meaning from the text he was reading, Visarut seemed to be aware of his strength and weakness. Another example is from Sutthigarn, a female student from the High group.

Sutthigarn: When I read this one here, I didn’t understand this term “abhorrent” and “ludicrous” so I tried to use the contextual clues. After reading and looking for clues, it didn’t help me that much. So I changed. I think I should reread, just go back to the previous sentences like 2-3 sentences and read them again. So I think it’s better. I know that when I don’t understand, I should do something. It’s like I just try everything.

While 11 out of 12 interviewed participants stated they often used various reading strategies, Pakpoom, a male student from the Low group, mentioned that he seldom used strategies. His comment about his reading is as follows:

Pakpoom: If I get stuck with difficult words, (smile) I will just do nothing. I just stop reading and sit there. Doing nothing. How can I get the meaning without being able to understand all the words?

This example shows that Pakpoom had difficulty with his reading. Instead of trying to look at the overall idea, he focused on the unknown words.

According to the third research question, the different factors that might have different effects on the participants’ reading strategy use include English proficiency level, school year, instructional type and opportunity to use English.

**English Proficiency Level**

Students in the High and those in the Low group were found to use different types of reading strategies. Therefore, the differences between the two groups will be explained in detail in the following section.

1) **High Group**

*Focusing more on Global strategies.* From the think-aloud, Nawin and Varut, students from the High group, clearly stated that they usually evaluated what they read, and how much they understand about the text. They also mentioned that they were aware of what effective strategies were. They added that when one strategy did not work, they would use other strategies that they thought would be best for their understanding. Below are interview excerpts from Nawin and Varut.
Nawin: While reading, I always check whether my understanding is right or wrong. I ask myself questions such as “Do I understand the passage?” and “What is the author driving at?” very often. I use many reading techniques. If the first technique doesn’t work, I will change. I know that I need to do something.

Similar to Nawin, Varut stated that he also checked whether he understood the materials he read. Below is his statement.

Varut: I always set purpose before reading. My English is not perfect and therefore, I have to be hard-working. While reading, you have to make sure that you understand it. You need to check yourself. You can’t just read. It’s useless.

Focus on overall meaning. The findings from the interviews suggested that students from the High group reported that they would focus on the overall meaning more than reading word by word, or sentence by sentence. They tried to resolve the vocabulary problems, resulting in accurate identification of unknown vocabulary. However, this activity did not interfere with their overall comprehension as stated by the students themselves. The example below will illustrate Niratda’s reading behaviors.

Niratda: You know, when I read, I just focus on overall idea. I don’t care about the vocabulary. When we read, we don’t need to know all the vocabulary. When I find difficult words, I first guess. If I still don’t know, I will skip. I don’t look it up in the dictionary as it wastes my time. I just focus on the overall idea, you know, the gist. If you don’t understand it, just read it again and again, back and forth, back and forth and finally, you will find it.

Using grammar knowledge. students in the High group reported using knowledge of grammar more often than those in the Low group. For example, Visarut reported using his knowledge of grammar structure to better understand the text. His strategy uses are illustrated below:

Visarut: When I read, I always pay attention to the terms “similar”, “like”, “unlike”. Yes. I also look at relative pronouns such as “that” “where” and “which”. I think these terms are important.

Using world knowledge. The findings from the interviews showed that the participants in the High group had a large amount of background knowledge. When asked whether they understood or heard about a school shooting spree like the one that took place at Columbine High School, Colorado, U.S.A. The majority of the participants in the High group mentioned that they had heard about school shooting incidents outside Thailand and that they were aware of this type of school violence. Below is an interview excerpt from Varut (High group).

Varut: I also think that background knowledge plays a role in reading. For example, here in this passage, from paragraph 1 and 2, at first, I didn’t really understand but then, I thought about the news about school violence. I think
I am right on track. I think it should be done with school shootings or students’ having guns in school. You know, if you don’t know anything, if you don’t have world knowledge, it’s hard.

These examples illustrate that the participants from the high group used various types of reading strategies to help them understand what they read.

2) Low Group

Compared to the students from the High group, the participants from the Low group were likely to use different strategies. Their strategy use was as follows:

Focus more on Support strategies. Results showed that the students from the Low group preferred using Support strategies such as underlining, using reference materials and translating from English to Thai to help them better understand the text. Mana and Sirinya, for example, focused more on underlining difficult words. Below are interview excerpts from Mana and Sirinya.

Mana: Actually, I don’t quite understand this story. When I don’t understand, I just underline unknown words. For example, the words “juvenile”, “metal detectors”, “abhorrent”, and “ludicrous” are difficult. So I underlined. If I have a dictionary with me, I will just use the dictionary. Now I don’t have a dictionary. I just go on with my reading.

Sirinya: I don’t really understand the text. So, I just underline and circle unknown words and phrases. For example, I underlined “inconvenience”, “assured”, and “peace of mind”. I later look it up in the dictionary.

Focus on reading word-by-word. The students in the Low group were likely to focus more on reading word-by-word, sentence by sentence. The students from the Low group also mentioned that the lack of vocabulary knowledge impede their comprehension. Pakpoom, for example, mentioned that he sometimes got stuck with his own reading when he came across difficult words. Below is an example from Pakpoom.

Pakpoom: If I come across with unknown words, (smile) I will just do nothing. I just stop reading and sit there doing nothing. How can I get the meaning without being able to understand all the words?

Use of grammar knowledge. Overall the participants from the Low group seldom mentioned using their knowledge of grammar structure during think-aloud and the retrospective interviews. To be specific, Sirinya, Pakpoom, Mana, Pat, Pimchanok, did not mention using any knowledge about grammar structure to comprehend the text. However, Chutinun, a female student from a private university, was an exception. She mentioned that she often uses the knowledge of grammar when the texts become difficult.

Chutinun: This sentence “Ten days after the Columbine High School shooting spree in 1999…. Richard Ripley, sought to make sense
of the tragedy.” is a past tense. And this one “We have always had school yard fights.” is a present perfect. I focused on the tenses. Also, this sentence “Should metal detectors be installed in schools?” is a thesis statement. So I need to focus on this idea. When I read, I need to find the cause and effect and problem and solution. You cannot just read. Here, this phrase “After bombing occurred in air travel” is a cause and this phrase “metal detectors were installed in airports.” is an effect.

**Lack of world knowledge.** When asked whether they heard about school shootings, most students in the Low group mentioned that they had never heard of the news, they never heard of Columbine High School and that they misunderstood that it was about school rivals like the situation that recently occurred in Bangkok, Thailand. This example is from Pakpoom.

Pakpoom: You know, I never read anything about this. I have no idea what it is.

Researcher: What will you do then?

Pakpoom: I will just ask you. You are here so I will ask you. They said here “shooting” so I think of Uthenthai and Pathumwan technical schools. Both of them love fighting with each other. So when I read this, I think of those situations.

Because of the lack of world knowledge, Pakpoom mentioned that he had difficulty comprehending the passage since he lacked background knowledge about the topic he read. However, he tried to fix the reading failure by relating what he was reading to what he knew.

**School Year**

The findings revealed another interesting point in terms of the year of study. It was obvious that the interviewed participants who were studying in the third or fourth years were familiar with test-taking strategies such as reading questions before reading the text in order to save time. That is, they mostly knew what the teachers were going to ask in exams. Chutinun, a senior student from the Low group, was another student who reported that she was familiar with exam questions. The participant’s perceptiveness is exemplified below:

Chutinun: I write down key words in the margin so it’s like summarizing, sometimes, I question myself, I reread, I guess from the context and surrounding sentences. Sometimes, I look at the words in bold print. I know that if these words are in bold print, the teacher will use those words for exam questions. I’m kind of used to test-taking techniques. The teachers ask that all the time.

Pat, another student from the Low group who was a senior reported that he made use of words in bold print to help him understand the text better. He mentioned he read faster with the help of these difficult terms.
Pat: When I read, I also look here, the words in bold print that the author gives to the reader. I think I should pay attention to them because the author provides them for us. These glosses must be important. They might be key words, they might be difficult words but that is ok, and the author knows that they might stop or block my comprehension. The author gives them so I have to take a closer look. Many students, you know, ignore it. Now I’m in my fourth year. You can’t ignore it.

This example illustrates that the participant was aware of what to read closely and what to ignore due to his experience from his years of study.

Instructional Type

Also, the results from the think-aloud and the retrospective interviews demonstrated another interesting point regarding the instructional types. The results concerning the instructional type is divided into three subgroups as follows:

Having knowledge of literary elements and grammar structure. The interviewed participants who were from a public university, whether they were from the High group or the Low group, seemed to have knowledge of some basic literary elements such as theme, conflict, figurative language. For example, Nawin and Chutinun, who were studying in the Faculty of Arts, reported using this knowledge. Below is an excerpt from the think-aloud by Chutinun.

Chutinun: From the sentence, “Using metal detectors to prevent school violence is like putting an adhesive bandage on an infected wound”. I like this comparison. The author uses a simile to compare two things. Ok, I know that the author is trying to convince us by giving these two different ideas. Therefore, I need to find the themes of these two ideas. You need to find these elements. So when I read I have a picture of a school, and yes, I agree with the author that schools should be a safe place for students. So, while reading I just guess. This text, they are talking about guns and children so I want to emphasize these two key words. I also highlighted this sentence “Should metal detectors be installed in schools?” using a yellow marker. I think this sentence is the thesis statement. I think this one is important. I make a guess that another point should be this or that. Sometimes, I focus on the arguments as to whether these two ideas are contradicting with one another. Like this one, first I found that metal detectors should be installed and then the next paragraph, it says it should not be installed. So I know there are two contradicting opinions. At first, I didn’t quite understand but in the end, it’s better.

This is another example from the retrospective interview of Chutinun.

Researcher: Do you have any problem while reading texts in English?

Chutinun: Mostly, it’s vocabulary and sentence structure. Sometimes, the sentences are too complicated in terms of their structure.

Researcher: What do you do then?
Chutinun: I just focus on the mood of the text whether it’s positive or negative.

Nawin, a male student from a public university, also mentioned using knowledge of basic literary elements such as similes and the tone to help him better understand the author’s idea. Below is Nawin’s interview excerpt:

Nawin: Here I underlined the term “earthquake” because the author is using a simile to compare a shooting in a school and an earthquake in the city. Ok, then, I know that shooting in schools is a serious matter. He tries to convince us that the situation is serious and deadly. So the tone is serious. That’s what I feel.

**Personal symbols and abbreviations.**

The findings from the interviews suggested that the participants from the public universities were more likely to create their own personal symbols in order to help themselves understand the text better. While the participants who were from private universities reported using simple support strategies, such as underlining and highlighting, the students from public universities reported using backward arrows, personal abbreviation such as “imp” for “important”, “sit” for “situation” and other symbols such as “≠” and “)”. Below is an example of Nawin’s use of a curly brace.

Nawin: Here, I also emphasized the two terms “abhorrent” and “ludicrous”. I think these two terms are important and therefore, I underlined and used a curly brace here. I needed to remind myself that this sentence is important.

**Summarizing.** In addition to the report on using personal symbols and abbreviations, the majority of the public university students reported using summarizing important ideas and key words in each paragraph. In contrast, those students from private universities, whether they were in the High or Low group, reported that they seldom summarized what they had read. Below is an example of Chutinun’s summary making.

Chutinun: I used the margins to write down key words. I tried to summarize the important ideas.

This is another example from Pimchanok, a private university student from the Low group.

Pimchanok: Normally, while reading, I don’t really highlight or underline. I want my book to be clean.

**Opportunity to use English**

The opportunity to use English is referred to as a situation in which a student is able to use English in a real context. In this case, Niratda is a good example as she was the only student out of 12 participants who regularly used English. As an Olympic medalist who needed to go aboard for sport tournaments, Niratda was given an unparalleled opportunity to practice English abroad. In addition, she also stated that experience was the best teacher, that it could help her select strategies that she thought were effective in particular situations.

Niratda: You know, as time goes by, I am older now. I am an experienced learner. I am not
afraid of English anymore. Right now, when I read or speak, and when I don’t understand, I just use all strategies that I can think of. All strategies that I think are effective in that situation. I will just use them and won’t be afraid of using them. Whatever strategies that might help me understand, I don’t care what it is.

This example shows that Niratda was aware of the benefits of reading strategies and applied these strategies for understanding English. She also knew when and why to apply the strategies and most importantly, which strategies to apply at a given time.

Discussion

Quantitative

With regards to the first research question, the results supported what has been acknowledged as the value of reading strategies (Bell, 2007: 51-68; Philip and Tan, 2006; Afflerback, Pearson, and Paris, 2008). That is, the surveyed participants used different reading strategies to overcome reading failure. However, the results from the quantitative analysis showed that the participants reported using problem-solving strategies more frequently than the other two strategy categories. Also, the five highest strategies that were reported as used by the surveyed participants were from the Problem-solving and Support Strategy categories.

Therefore, the results are in line with the findings of Zhang and Wu (2009). They also found that the top five strategies that were reported as used most frequently were under the same categories: Cognitive and Support. However, in the Zhang and Wu’s study, the overall strategies that the Chinese participants used were the metacognitive strategies. Zhang and Wu remarked that the learning of English in the Chinese context can be an explanation for the students’ clearer metacognitive awareness. They hypothesized that their participants might transfer some of their Chinese reading strategies to EFL reading.

The second research question was how often did the participants use the strategies. The overall mean frequency of strategy use showed that the participants of this study reported using the strategies at a medium-usage level. This is different from those of Zhang and Wu (2009) who reported using overall strategies at a high-usage level. The findings of this study corroborates previous studies (Hamdan, et al., 2010, Plakans, 2009; Sheorey and Mokhtari, 2001) that cognitive strategies were used most commonly, followed by metacognitive strategies. The findings suggested that the surveyed participants were cognitively higher in their reading strategies than their metacognitive reading strategies skills.
According to the third research question about what factors affected the use of reading strategies, the results in this section (Figure 1–4) showed that self-rated reading ability significantly affected the surveyed participants’ use of strategy. The findings supported Butler (2007), Martinez, Aricak, and Jewell (2008) and Yamashita (2004) that the students’ self-rated reading ability had an effect on students’ reading strategy use. The results of this present study showed that students who viewed themselves as ‘excellent’ readers reported using global, problem-solving and support strategies more frequently than the students who rated themselves as ‘good’, ‘fair’ and ‘poor’ readers. The results might add to the existing literature (Butler, 2007; Martinez, Aricak, and Jewell, 2008; Yamashita, 2004) that self-perceived reading ability plays a role in reading strategy use in the sense that the more they viewed themselves as a good reader, the more they used the reading strategies.

In addition to the self-rated reading ability, the other two factors that had an effect on the strategy use were the length of time studying English and the instructional type. However, these two factors had an effect only on the global strategy use. One question arises as to why these two factors affected the participants’ global strategy use. Global strategies are considered reading strategies that are used by strategic and experienced readers. Thus, this might explain why the more the participants studied English, the more they used this type of strategy. Probably, the participants with more experience of studying English might be given an opportunity to practice using such strategies more frequently than those who did not. Another explanation might be that the students who spent longer periods of time studying English might possess some basic knowledge such as language knowledge, lexical knowledge and world knowledge. In other words, they might have some available resources to be used in planning, controlling and evaluating their reading process.

Moreover, the results from the quantitative analysis revealed that the instructional type played a role in the use of global strategies. However, the results did not show the exact direction between these relationships. Therefore, it would be interesting to find out more on whether university “A” is different from university “B,” and how specific instructions affect their reading strategy and reading achievement in general. To date, there has been no study investigating the relationship of the instructional type and reading strategy use. It might be a good point to start asking why and how each institution varies from one another and how the similarities and differences affect the students’ reading achievement in on a broad spectrum.
Qualitative

The results of the first research question about what reading strategies were used by the participants showed that schema is vital to reading comprehension. All interviewed participants reported that they made use of their background knowledge to better comprehend the text. The participants also stated the lack of their background knowledge in the subject matter impeded them from fully understanding the text. Even though they tried to reread, guess unknown words, or translate from L2 to L1, they still struggled with their reading. This, in turn, demonstrated that the interviewed participants who had little or no knowledge of the subject matter experienced reading difficulty even though they tried to use their known reading strategies. It can also be inferred that reading strategies alone cannot entirely compensate for the deficiency. In contrast, students who had background knowledge about the subject matter were able to make sense of the texts they read.

In addition, the findings supported previous studies (Alderson, 2000; Hellekjaer, 2009) that vocabulary knowledge correlates highly with reading comprehension and that vocabulary might be one of the best predictors of text comprehension. The findings also supported Hellekjaer (2009) that reading is an interactive process, that it requires a combination of schema, vocabulary knowledge, knowledge of the language and text type and other cognitive processes. Apparently, the knowledge of vocabulary or the knowledge of text structure alone couldn’t help students to understand the text but they made use of a combination of strategies in association with other knowledge.

The results of the second research question about how often the participants used the strategies are in line with previous research (Hamdan, et al., 2010; Mokhtari and Sheorey, 2002; Zhang and Wu, 2009), which suggested that more-proficient readers are conscious of their own learning, aware of their cognitive processes during reading and are able to use a wide array of reading strategies more effectively. From the think-aloud and the retrospective interviews, the participants who were from the High group reported using reading strategies more often than those in the Low group. Also, they were likely to comprehend what they read whereas the majority of the participants who were from the Low group reported that they were not sure whether they understood the text they just finished reading. The participants from the High group also reported using global strategies such as having a purpose in mind when reading, checking one’s own understanding, analyzing and evaluating the information, deciding what to read and what to ignore, and reviewing the texts more often than those students in the Low group.
The results suggested that the Global reading strategies were found to correlate with the participants’ English proficiency level even though significant differences were not found in the quantitative analysis.

According to the third research question about what factors affect the use of such reading strategies, the first factor that seems to affect the participants’ reading strategy use was their English proficiency level. The results supported Phakiti (2006) who suggested that the more-proficient readers reported higher degrees of cognitive and metacognitive strategy use than the less-proficient readers. Results of this study showed that when faced with inconsistency in a text, the participants from the High group could use reading strategies to overcome reading difficulties. As we can see from the think alouds of Sutthigarn, Visarat, Nawin, Varut, and Niratda, the students in the High group were able to use grammar knowledge, vocabulary knowledge, and world knowledge to help them better understand the text. In contrast, Pakpoom, an interviewed participant from the Low group, seemed not to make use of available strategies but got stuck with problematic words. The results from the qualitative data supported previous studies (Hamdan, et al., 2010; Phakiti, 2003, 2006; Plakans, 2009; Ofudu and Adedipe, 2011; Zhang and Wu, 2009) that the more-proficient readers often engaged in deliberate activities that require thinking, planning, flexible strategies, and continuous self-monitoring, while the less-proficient readers often seemed to be unaware of these strategies and the need to use them. This is supported by Mokhtari and Sheorey (2002), who suggested that the more proficient readers were constructively responsive readers who are capable of using strategies more effectively and flexibly. The results of this study were in line with Ko (2005), Pressley (2000), and Tapinta (2006), who acknowledged that a reader’s vocabulary knowledge is related to her or his overall comprehension. The results also suggested that the students in the High group who possessed extensive vocabulary seemed to comprehend the text better than the students in the Low group.

The second factor that seems to have an effect on the participants’ reading strategy use was their school year level. From the interviews, the participants such as Chutinun and Pat, who were senior, regardless of their proficiency level, instructional type or gender, showed expertise in test-taking strategies. This is in accordance with the findings of Bell (2007), Lovett and Flavell (1990), and McDonough (1999), who revealed that reading strategy awareness is in part a function of age, experience and also maturation.

The third factor that seems to influence the participants’ reading strategy use was the
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instructional type. The interviewed participants from the public universities seemed to possess a fundamental knowledge of reading such as knowledge of literary elements. In addition, they mentioned using a wide variety of support strategies such as summarizing important points in the margins and using personal symbols and abbreviations to help them better understand the text.

The fourth factor that seemed to have an impact on the participants’ reading strategy use was the opportunity to use English. The findings of this study are in line with what Upton (1997) revealed about EFL Japanese college students. Upton concluded that the more time the students spent in the target language, the more they used top-down strategies. Niratda, who is an Olympic medalist, was comfortable to use a combination of strategies, especially the strategies in the Global category.

Limitations of the Study

There is a limitation in the qualitative analysis due to the small number of interviewed participants. More studies with a larger number of interviewed participants are needed in order to gain a balanced conclusion. There should also be more research exploring the relationship between factors in strategy use and reading comprehension achievement. Further studies can build on the findings of this study to discover practical applications in teaching and learning reading in a second and foreign language. Also, although the think-aloud technique is a widely used method to explore what the readers are thinking, sometimes the students do not report all the strategies they use. In addition to using think-aloud and retrospective interviews like this study did, further research should triangulate the data with other supporting data such as student’s diaries and students’ exercises. The decision to use a particular research instrument depends on the context of the language use, the research budget, the time frames and the purpose of a study.

Conclusion and Implications

This study leads to several theoretical and pedagogical conclusions.

First, as shown in the findings, students used problem-solving strategies most frequently; teachers should scaffold problem-solving strategies by providing students a wide range of reading strategies with explicit instruction and, overtime, remove the scaffolding to give students more responsibility. Second, results from the quantitative method showed that the self-rated reading ability significantly affected the use of global, problem-solving and support strategies. Therefore, the findings of this study echo previous studies (Butler, 2007; Yamashita, 2004) that the self-rated
reading ability affects reading strategy use. Future research can be done in investigating why and how self-rated reading ability has an effect on reading strategy use among students in different sample groups. Third, results from the think-aloud revealed that the students in the High group were meta cognitively aware of their own reading. Therefore, a few questions arise. How and why did the more proficient readers gain this ability? Is her or his ability innate or can it be taught? Is it natural or nurtured? Previous studies (Sheorey and Mokhtari, 2001; Wichadee, 2011) showed that students who were taught Metacognitive Strategy Instruction could benefit and read better than those who were not taught. Therefore, teachers should introduce explicit Metacognitive Strategy Instructions in their teaching method. Fourth, results from the think-aloud revealed that the students in the Low group focused on word level strategies, teachers should teach students to look at the overall meaning as it is what strategic readers do while reading. Last, the findings of this study demonstrated the importance of learning in context. Previous studies reported that Thai students were passive learners who were likely to focus on the word-level reading process instead of higher-order thinking skills. These findings were found from the students in the Low group. Apparently, instruction does play a role, therefore teachers should encourage students to use a combination of top-down and bottom-up strategies while reading. A teacher’s commitment and encouragement might be able to inspire and support the active reading process. However, the materials teachers select should be interesting and should be embedded in the students’ own lives and experiences.

Acknowledgement

I would like to express my sincere gratitude to the University of the Thai Chamber of Commerce for giving me financial support throughout my research project. My thanks go to the reviewers for their invaluable comments and suggestions. I would also like to thank both Dr. Yajai Chuwicha and Assistant Professor Dr. Dhanate Vespada for their continuous encouragement.
Appendix A: Background Information Sheet

Directions: Please complete this form.
1. Your gender: Male _________ Female _________
2. Your age: _______________
3. Freshman ___________ Sophomore ___________ Junior ___________ Senior ___________
4. Your school and university: _______________________________
5. How many years have you studied English? ________________ years
6. How long have you studied in English speaking countries? ________________ years
7. How important is it for you to become proficient in English?
   Very important ___________ important ___________ not so important ___________
8. What is your English GPA? _______________________________
9. How would you rate your own overall reading proficiency?
   Poor _______ fair _______ good _______ excellent _______

Appendix B: Revised Survey of Reading Strategies (English-Thai Version)

The purpose of this survey is to collect information about the various strategies you use when you read school-related academic materials in ENGLISH (e.g., reading textbooks for homework or examinations; reading journal articles, etc.). Each statement is followed by five numbers, 1, 2, 3, 4, and 5, and each number means the following:
‘1’ means that ‘I never or almost never do this’.
‘2’ means that ‘I do this only occasionally’.
‘3’ means that ‘I sometimes do this’. (About 50% of the time.)
‘4’ means that ‘I usually do this’.
‘5’ means that ‘I always or almost always do this’.
After reading each statement, circle the number (1, 2, 3, 4, or 5) which applies to you. Note that there are no right or wrong responses to any of the items on this survey.

<table>
<thead>
<tr>
<th>Statements</th>
<th>Never</th>
<th>Almost</th>
<th>Sometimes</th>
<th>Almost</th>
<th>Always</th>
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<tbody>
<tr>
<td>1. I have a purpose in mind when I read.</td>
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<td>2. I take notes while reading to help myself understand what I read.</td>
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<td>เวลาอ่าน ฉันจะจดบันทึกเพื่อที่จะช่วยให้เข้าใจเรื่องที่อ่านมากขึ้น</td>
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<td>3. I think about what I know to help me understand what I read.</td>
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<td>4. I take an overall view of the text to see what it is about before reading it.</td>
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<td>5. When the text becomes difficult, I read aloud to help myself understand what I read.</td>
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<td>6. I think about whether the content of the text fits my reading purpose.</td>
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<td>7. I read slowly and carefully to make sure I understand what I am reading.</td>
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<td>8. I review the text first by noting its characteristics, like length and organization.</td>
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<td>9. I try to get back on track when I lose my concentration.</td>
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<td>10. I underline or circle information in the text to help me remember it.</td>
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<td>11. I adjust my reading speed according to what I am reading.</td>
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<td>12. When reading, I decide what to read closely and what to ignore.</td>
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<td>13. I use reference materials (e.g. a dictionary) to help me understand what I am reading.</td>
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<td>14. When the text becomes difficult, I pay closer attention to what I am reading.</td>
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<td>15. I use tables, figures, and pictures accompanying the text to increase my understanding.</td>
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<td>16. I stop form time to time and think about what I am reading.</td>
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<td>17. I use context clues to help me better understand what I am reading.</td>
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<td>18. I paraphrase (restate ideas in my own word) to better understand what I read.</td>
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<td>19. I try to picture or visualize information to help remember what I read.</td>
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<td>20. I use typographical features like bold face and italics to identify key information.</td>
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<td>21. I critically analyze and evaluate the information presented in the text.</td>
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<td>ถานอานอย่างตีนวิเคราะห์ วิจารณ์และประเมินเรื่องที่อ่าน</td>
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<td>22. I go back and forth in the text to find relationships among the ideas in it.</td>
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<td>23. I check my understanding when I come across new information.</td>
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<td>เมื่ออานพบข้อมูลใหม่ ๆ ถานตรวจสอบว่าอานเข้าใจหรือไม่เข้าใจ</td>
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<td>24. I try to guess what the content of the text is about when I read.</td>
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<td>25. When the text becomes difficult, I reread it to increase my understanding.</td>
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<td>26. I ask myself questions that I'd like to have answered in the text.</td>
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<td>27. I check to see if my guesses about the text are right or wrong.</td>
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<td>28. When I read, I guess the meaning of unknown words or phrases.</td>
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<td>29. When reading, I translate from English into Thai.</td>
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<td>เวลาอานแปลจากภาษาอังกฤษมาเป็นภาษาไทย</td>
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<td>30. When reading, I think about information in both English and in Thai.</td>
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<td>เวลาอาน ถานคิดถึงข้อมูลที่อ่านเป็นภาษาอังกฤษและภาษาไทย</td>
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Appendix C: Text

**A Reading in Current Controversy**

Have you ever felt unsafe in school? What do you think is the solution? Some people believe that installing metal detectors in schools is the solution. Read the article below to gain an understanding of both sides of this issue. Complete the vocabulary exercise before reading the selection to learn the new terms. After reading the selection, complete the comprehension exercises that follow it.

**Vocabulary in Context**

a. decline—decrease
b. juvenile—adolescent, minor
c. lethality—ability to cause death
d. abhorrent—disgusting, horrible, sickening
e. ludicrous—absurd, foolish, ridiculous

Use the above terms to complete the following sentences. The first one has been done for you.

1. It is awful, if not ____________, to think that our children are legally forced to become sitting ducks in a shooting gallery simply because some would feel offended by a metal detector.

2. To think that anyone can learn history, English, and mathematics while in a state of constant fear is unreasonable, if not completely ____________.

3. The overall ____________ in our youth’s violence rate does not include deaths due to guns.

4. We should not allow guns to fall into the hands of children or ____________ (s).

5. The increase in ____________ is due mainly to the increase in the number of young people who have access to guns and to the school’s inability to regulate these weapons within its own walls.

**Should Metal Detectors Be Installed in Schools?**

Ten days after the Columbine High School shooting spree in 1999 that took the lives of fourteen students and a teacher and wounded over twenty others, the U.S. Secretary of Education, Richard Riley, sought to make sense of the tragedy. Speaking at Walt Whitman High School in
Bethesda, Maryland, he told his audience, “We have always had school-yard fights, but now there is a new level of fear because of these weapons of deadly violence.” Crime statistics at the time indicated an actual decline in the juvenile violence rate, but lethality had increased, mainly due to guns.

"Guns and youth are a particularly deadly combination," observed a report by the Center for the Study and Prevention of Violence at the University of Colorado at Boulder. "Guns give youth the feeling of power, and during adolescence, abstract reasoning about the consequences of gun use and the capacity to read social cues are incomplete." The need to separate the two is obvious. But the way to do that is a challenge. Should metal detectors be installed in schools? Are there less ominous ways to handle the problem? Can schools be kept safe without becoming fortresses?

Metal Detectors Should Be Installed in Schools

A shooting in a school is like an earthquake in a city: It shakes the very foundation of what was thought to be solid, secure, and safe. Children and youth need to feel confident that their school is a safe and secure place. The thought of requiring students to spend their days in environments that make them vulnerable to violence is abhorrent. Expecting students to tackle their studies and find learning engaging when they are fearful for their lives is ludicrous. And yet that is exactly what we are doing if we fail to install metal detectors in schools.

After bombings occurred in air travel, metal detectors were installed in airports in order to protect passengers. Few complained, realizing that the personal inconvenience assured them of greater protection and peace of mind. They accepted the need to lose a liberty for the good of all. If adults are granted such protection from the violence in our society, should we not provide the same for our children and youth?

Metal detectors and similar devices are technological advances that help reduce crime in a variety of settings. In addition to the security they provide in airports, they prevent people from taking library books they haven’t checked out and protect stores from shoplifters. Just as we have learned to accept metal detectors in libraries, airports, and stores, so their presence in schools would soon be hardly noticed.

Model programs that have decreased student weapon violations by 70 to 86 percent include weapon scanning with metal detectors along with random searches conducted by police. Other features of such model programs include eliminating building areas that cannot be viewed by surveillance cameras and training school security officers by local police forces. These model programs also call for teachers and students to be trained in how to handle dangerous situations and ways to avoid them. The installation of metal detectors is clearly where protection from school violence must begin.
Metal Detectors Should Not Be Installed in Schools

[7] Using metal detectors to prevent school violence is like putting an adhesive bandage on an infected wound. Not only will it not remedy the problem, but it could also make it even worse. Students who have not considered bringing a weapon to school might decide to do so simply to challenge the system. Like gang members who write graffiti on dangerous highway overpasses, similar minds will be motivated to find ways to bypass the metal detector. Metal detectors also present a foreboding welcome to a school campus and convey to students the messages “We have problems here” and “We don’t trust you.”

[8] Instead, the way to prevent school violence is to get to the heart of students’ problems. What causes the anger and alienation that eventually explodes in destructive, and sometimes deadly, acts? Teaching students how to solve their problems, handle disappointments, and seek help when it’s needed are ways in which some schools have tried to reduce violence. Conflict management, peace building, using literature to teach empathy, forbidding teasing, and anti-bullying programs are other approaches.

[9] In his speech at Walt Whitman High, Secretary Riley urged community members, parents, and students themselves to play active roles in reversing the trend toward greater violence. “I ask all Americans to believe as I do in this generation of young people . . . We must send . . . a powerful message of hope and security. We will do everything we can to protect you, to listen to you, and to reach out to you so that you feel connected. . . . This is why I ask parents again and again to slow down your lives.” He told students to speak to adults when they believe something violent is about to happen. He never mentioned metal detectors, and rightly so. Finding ways to reduce alienation and create community in our schools is a better approach to promoting school safety. (Parkay and Stanford 150–51)

Multiple-Choice Questions

Complete the following multiple-choice questions to test your understanding of the issues and arguments presented concerning metal detectors in schools. The first one has been done for you.

1. The issue of this article is:
   a. Should zero-tolerance policies be used in schools?
   b. Do airports really need metal detectors?
   c. Teachers and students should work together to prevent violence in schools.
   d. Should schools install metal detectors?
### Figure 1 Regression Statistics for the Overall Strategy

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
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<th>Durbin-Watson</th>
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<table>
<thead>
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<th>Sig.</th>
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<tbody>
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### Figure 2 Regression statistics for the Global strategy category

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<th>Standardized Coefficients</th>
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<th>Sig.</th>
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<tbody>
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<td>Beta</td>
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<td>-</td>
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<table>
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<tr>
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**Figure 3** Regression statistics for the Problem-solving Strategy Category

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<td>Std. Error</td>
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<tr>
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</tbody>
</table>

**Figure 4** Regression Statistics for the Support Strategy Category
References


Tapinta, P. 2006. “Exploring Thai EFL University Students’ Awareness of their Knowledge, Use and Control of Strategies in Reading and Writing.” Doctoral Dissertation, University of North Texas.


Dr. Nuwee Chomphuchart received her Ph.D. in Reading Education from the State University of New York at Buffalo, U.S.A. She is currently teaching Effective Reading and Writing for Business courses at the School of Humanities, University of the Thai Chamber of Commerce, Bangkok, Thailand. Her research interest includes reading strategies, multiliteracies and critical pedagogy. In addition to teaching, she has also worked as a Lay Judge at the Central Juvenile and Family Court since 2010.