The Use of Cognitive Reading Strategies to Enhance EFL Students' Reading Comprehension

Anne Ratna S
STKIP Garut, West Java, Indonesia

Abstract

This study is descriptive research investigating cognitive reading strategies frequently used among EFL students at one of universities in Garut, Indonesia, to enhance their reading comprehension. This study also aims to find out which cognitive reading strategies considered the most helpful to be developed by the EFL students especially in answering questions in reading comprehension test successfully. The data were obtained from two sources: a self-report questionnaire administered to 76 students and Thinking-Aloud Protocols (TAPs) conducted with 15 students. The data were analyzed using instruments adapted from Format Cognitive Reading Strategies based on previous study conducted by Ozek&Civelek (2006). The results show that cognitive reading strategies most frequently used by students are using the title to predict the content of the text, guessing the meaning of a word from context, using the dictionary for the important words, and considering other sentences in the paragraph to figure out the meaning.

Keywords

Cognitive Reading Strategies, EFL Students, Reading Comprehension

1. Introduction

This study is concerned with investigating cognitive reading strategies used by EFL freshmen students in a university in Garut. It is commonly known that reading is an important skill in learning a language. The requirement of being knowledgeable in this global era can be fulfilled by reading. As stated by Wallace (1992), reading serves the wider role of extending our general knowledge of the world. This is also supported by Hood et al (2005) who state that the ability to read well in English will influence learning potential in all other areas. This can be fulfilled by the use of learning strategies which can also be applied in reading.

There are two kinds of learning strategies which can also be applied in reading, i.e. direct strategies and indirect strategies (Oxford, 1990). Direct strategies consist of memory strategies, cognitive strategies and compensation strategies. Meanwhile, indirect strategies are composed of metacognitive strategies, affective strategies and social strategies. Among these strategies, cognitive strategies and metacognitive strategies are the most popular strategies used in reading (see Wenden & Rubin, 1987; Richards, 1987 in Richards, 1990; Ghoonsooly & Eghtesadee, 2006; Ozek & Civelek, 2006; Ming Xu, 2007; and Hamdan et al, 2010).

Metacognitive strategies in reading identified by Oxford (1990) are overviewing and talking with already known material, paying attention, finding out about language learning, organizing, setting goals and objectives, identifying the purpose of a language task, planning for a language task, seeking practice opportunities, self-monitoring, and self-evaluating. Meanwhile, cognitive
strategies in reading identified by Oxford (1990) are repeating, getting the idea quickly (skimming and scanning), using resources for receiving and sending messages, reasoning deductively, analyzing expressions, analyzing contrastively, translating, transferring, taking notes, summarizing and highlighting.

The cognitive reading strategies mentioned above are also in line with those identified by O'Malley & Chamot (1990) which include resourcing, repetition, grouping, deduction, imagery, keyword method, elaboration, transfer, inferencing, note-taking and summarizing. The use of cognitive reading strategies in reading can help someone to be a proficient reader. This is supported by the theories of cognitive reading strategies and the result of the study conducted by Ozek & Civelek (2006), Ghonsooly & Eghtesadee (2006), and Hamdan et al (2010).

Since the number of research on cognitive reading strategies is still limited in Indonesia and a study on which cognitive reading strategies considered the most helpful in answering questions in reading comprehension test is not yet investigated in the previous studies, this study attempts to fill the gap. The previous studies become parts of theoretical foundations the researcher uses in this study which is focused on cognitive reading strategies frequently used by EFL university students to enhance their reading comprehension.

1.1 Aims and Scope of the Study

This study aims to investigate cognitive reading strategies frequently used by the EFL university students to enhance their reading comprehension. In addition, the study also attempts to find out which cognitive reading strategies considered the most helpful to be developed by the EFL university students especially when they successfully answer questions in reading comprehension test. Meanwhile, the scope of the study is delimited into cognitive reading strategies used by the EFL freshmen students of English Education Program at STKIP Garut, Indonesia.

1.2 Research Questions

Based on the description above, the researcher processes the problems to be investigated which are formulated as follows:

1. Which cognitive reading strategies are frequently used by the EFL university students to enhance their reading comprehension?
2. Which cognitive reading strategies are considered the most helpful to be developed by the EFL university students especially in answering questions in reading comprehension test successfully?

1.3 Significance of Study

From professional aspect, this study gives contribution to the field of teaching reading comprehension to EFL university students. The study is valuable for lecturers in teaching reading comprehension course and for students in enhancing their reading comprehension. It also develops the awareness of reading strategies among EFL university students. From practical aspect, the findings have some practical implications in future instruction to help the students to improve their reading comprehension. The findings of the study can also give information to reading lecturers to teach cognitive reading strategies considered the most helpful to be developed by the students in order that they can be good readers. Finally, from theoretical aspect, the study enriches the literature review for other researchers who want to conduct the study of the same field interest. The results of this study can also be used as reference to compare and support the results of further study.
2. Review of Literature

2.1 Reading Strategies Used by Good Readers

As attempts to comprehend the text, reader uses reading strategies. Reading strategy is the mental activity that readers use in order to construct meaning from a text (see N. J Anderson et al., 1991; Devine, 1993; Hosenfeld et al., 1981 in Aebersold & Field, 1997). That kind of activity can determine whether a reader can comprehend the text well or not. Such examples of what successful readers do, consciously or unconsciously enable them to comprehend the text well.

Such examples of reading strategies used by good readers based on a series of studies on good versus poor reading strategies conducted by Hosenfeld (1977, 1984) which are in line with those described by Clarke (1979), Barnet (1989), and Anderson et al (1990) in Aebersold & Field (1997), Pressley (2000) and Frase (2008). Such examples of good reading strategies they describe are keeping the purpose for reading the text in mind, using title to infer what information might follow, skimming quickly to get the gist of the text, scanning for specific information on the text, associating ideas to what the reader has already known, taking notes, paraphrasing, guessing the meaning of a word from context, summarizing and so on.

Paraphrasing is considered good strategy as stated by Pressley (2000) that it is an active learning strategy that can help readers to remember important points by restating with their own words. Fleming (2011) also states that paraphrasing is the act of using your own words to describe something you've read. She adds that a reader can practice paraphrasing by reading a few paragraphs from any book, and then summarizing a section at a time in his own words.

2.2 Cognitive Reading Strategies

The term cognitive strategies, according to O'Malley & Chamot (1990), are more directly related to individual learning tasks and entail direct manipulation or transformation of the learning material. Meanwhile, Oxford (1990) states that such strategies are varied a lot, ranging from repeating to analyzing expressions to summarizing. Oxford (1990) also states that with all their variety, cognitive strategies are divided into four sets. The four sets are practicing, receiving and sending messages, analyzing and reasoning, and creating structure for input and output.

As they reviewed the research, Pressley and Woloshyn (1995) in Dole, Norkes, and Drits (2008) identified a number of cognitive strategies for various tasks in different domains of knowledge. For example, they identified strategies for analyzing and solving problems (general strategies), memorizing a series of events or a timeline for a test (study strategies), planning, drafting, reviewing and revising a critical essay (writing strategies), and self-questioning, constructing mental representational images, activating prior knowledge, rereading difficult-to-understand sections of texts, predicting or summarizing a text (reading strategies).

Research has revealed that the use of cognitive learning strategies in classroom instruction and learning is fundamental to successful learning (see Chamot & O'Malley, 1987; Harris & Pressley, 1991; Wood, Woloshyn, & Willoughby, 1995 in Pressley, 2000). This study is concerned with cognitive reading strategies identified by Oxford (1990), and those proposed by O'Malley & Chamot (1990) which were also used as the theoretical foundation in the previous study conducted by Ozek & Civelek (2006). The types of cognitive reading strategies used in this study are such as resourcing, repetition, grouping, deduction, imagery, getting the idea quickly, elaboration, inferencing, note-taking, and summarizing.
2.2.1 Resourcing

Resourcing is using target language reference materials such as dictionaries, encyclopedias, or textbooks (O’Malley & Chamot, 1990). This strategy is useful for both and production. As Oxford (1990) states that to better understand what is heard or read, printed resources such as dictionaries, word lists, grammar books, and phrase books may be valuable. In this study, this strategy is represented by the strategy of using dictionary for important words.

2.2.2 Repetition

Repetition is repeating a chunk of language (a word or phrase) in the course of performing a language task (O’Malley & Chamot, 1990). As Oxford (1990) states that in reading, the strategy of repeating can be reading a passage more than once to understand it more completely. This is in line with what Pressley (2000) states that repetition strategy can be used by the students as they want to remember important points. In this study, repetition strategy is represented by two strategies: re-reading a sentence and re-reading the text to remedy failures.

2.2.3 Grouping

According to O’Malley & Chamot (1990), grouping is classifying words, terminology, or concepts according to their attributes or meaning. Oxford (1990) adds that grouping strategy in reading involves classifying or reclassifying what is read into meaningful groups, thus reducing the number of unrelated elements. In this study, this grouping strategy is represented by the strategy of classifying the words according to their grammatical categories.

2.2.4 Deduction

According to O’Malley & Chamot (1990), deduction strategy is applying rules to understand or produce the second language or making up rules based on language analysis. As Oxford (1990) states that this is a top-down strategy leading from general to specific. In this study, this strategy is represented by the strategy of reading the first line of every paragraph to understand the whole text.

2.2.5 Imagery

O’Malley & Chamot (1990) refers imagery to using visual images (either mental or actual) to understand or remember new information. Meanwhile, Oxford (1990) states this strategy as a good strategy to remember what has been read in the new language to create a mental image of it. In addition, Frase (2008) states that the best part of reading is watching the movie in your head and good readers experience seeing strong visual images. In this study, imagery strategy is represented by two strategies: looking at illustration / picture of the events in mind.

2.2.6 Getting the Idea Quickly

In this study, the strategy of getting the idea quickly involves skimming strategy and scanning strategy. As stated by Oxford (1990), the strategy of getting the idea quickly constitutes with skimming strategy and scanning strategy. Skimming involves searching for the main ideas the speaker wants to get across, while scanning means searching for specific details of interest to the learner. Skimming as Richards (1997) states, is usually defined as a quick, superficial reading of a text in order to get the gist of it (see also Brown, 2001). Whereas scanning is looking for specific
information in the text and ignoring the rest (see Nuttal, 1982; Grellet, 1986; Aebersold & Field, 1997; Hood (2005).

Beare (2011) adds that scanning is used to discover required information to complete a given task such as making a decision about what to watch on TV, or which museum to visit while visiting a foreign city. This is supported by Malcolm (2010) who states that readers scan a piece of writing when they quickly search it for specific information.

2.2.7 Elaboration

Elaboration, according to O'Malley & Chamot (1990), is relating new information to prior knowledge, relating different parts of new information to each other or making meaningful personal associations with the new information. Meanwhile, Gunning (1996) refers to elaboration as an additional processing of the text, by the reader, which may increase comprehension. It involves forming connection between the text and the reader's background knowledge of the subject. Keshavarz & Mobarra (2003) mentions that elaboration appears to serve twin functions of most foreign / second language reading lessons, i.e., improving reading comprehension, and providing learners with the rich linguistic form they need for further language learning as this strategy provides learners with the full form of the language and allows them to encounter, more or less, authentic and native-like material (see also Vandersen et al in McNamara, 2007).

Christie & Vukelich (2003) also state that simply identifying all the words in a text does not ensure that comprehension will occur. Readers must build meaning by linking text information to what they already know. In this study, this strategy is represented as thinking about previous knowledge on the topic of the text or associating to background's knowledge.

2.2.8 Inferencing

Inferencing strategy is using available information to guess the meaning of new items, predict outcomes, or fill in missing information (O'Malley&Chamot, 1990). This strategy can be used as students attempt to comprehend the text. In this study, inferencing strategy is represented by the strategy of using the title to predict the content of the text and paying attention to words or phrases that show how text is organized.

2.2.9 Note-Taking

O'Malley & Chamot (1990) defines note-taking strategy as writing down key words and concepts in abbreviated verbal, graphic, or numerical form while listening or reading. Note-taking strategy is a good reading strategy. As Cambrooke (2010) claims that it is a good idea to take notes from textbook. Note-taking makes students active participants in their learning, helps them organize important concepts, remember information, and becomes one of their study aids.

2.2.10 Summarizing

According to O'Malley & Chamot (1990), summarizing is making a mental, oral, or written summary of new information gained through listening or reading. Summarizing can be a useful technique. As Gulcat (2007) states that "the process of summarizing enables you to grasp the original text better, and the result shows the reader that you understand it as well. In addition to this, the knowledge you gained by summarizing makes it possible for you to analyze and critique the original text".

3. Data Collection Method and Analysis
This study used a survey which belongs to the descriptive research as findings are based on responses given by the respondents (Goodwin & Laura, 1996). This research design is consistent with the research design used by Ozek & Civelek's (2006) previous study. The descriptive quantitative procedure was used to identify the students' cognitive reading strategies as proposed by Ozek & Civelek (2006) as the main theory.

The data were taken from questionnaire and TAPs (Thinking-Aloud Protocols) administered to the respondents. Meanwhile, data taken from the adapted questionnaire of Ozek & Civelek (2006) were used as comparison and support to the result of this study. The questionnaire was composed of 30 closed-ended items which represent good reading strategies and poor reading strategies. There were 22 items of good reading strategies in which 17 items belong to cognitive reading strategies. These 17 items can be grouped in under 10 categories: resourcing, repetition, grouping, deduction, imagery, getting the idea quickly, elaboration, inferencing, note-taking, and summarizing.

The data were described in the form of simple quantitative description. Likert scale was used with the criteria exemplified in Table 1 below. Before the questionnaire was administered to the respondents, it was piloted involving 10 students.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>5</td>
</tr>
<tr>
<td>Usually</td>
<td>4</td>
</tr>
<tr>
<td>Sometimes</td>
<td>3</td>
</tr>
<tr>
<td>Rarely</td>
<td>2</td>
</tr>
<tr>
<td>Never</td>
<td>1</td>
</tr>
</tbody>
</table>

The students' response towards the 30 strategies were scored and summed. The students' total scores were regarded as their scores in reading strategies. The scores from students' reading strategies were calculated to find the intensity of use of every indicator in the questionnaire. Regarding to the most frequently used strategy responses, the scores of Usually and Always were combined to be the scores of U+A. The combinations were made to examine the frequency of using strategies in which the responses U+A indicated that the students used the strategy frequently. Such combination is beneficial to measure the students' positive responses towards the learning strategies. The scores, at the end, were presented in the form of percentage.

The second instrument used in this research was Thinking-Aloud Protocol (TAP). This instrument was used to find out cognitive reading strategies considered the most helpful to be developed by the university students especially in answering questions in reading comprehension test successfully. In the think-aloud session, the participants were asked to think aloud in front of tape recorder as they read the text and did the test.

There were three texts chosen which its level of difficulty had been analyzed using Fry system (see Fry, 1965). The texts were adopted from Longman Preparation Course for the TOEFL Test (Phillips, 1996). As the results of Fry readability test for three texts chosen in this study, the levels of the texts were divided into the easy, medium and difficult texts. Each text consists of 10 multiple-choice items including the questions about the topic of the passage, main idea, guessing the meaning of a word, implicit statement, the tone of the passage, the purpose of the text, inferring from the text and some items related to text comprehension.

The Think-Aloud Protocol (TAP) process took duration of 33 minutes for each participant. The
researcher interrupted every time the participant answered the items with the purpose to make it clear those were not recorded by the audio-tape recorder as well as to make sure the strategy used by the participant as reference in data analysis later.

After conducting the Think-Aloud Protocol (TAP) process, the data then were analyzed. First of all, the reading strategies used by the participants were identified. Then, the protocols were transcribed and coded to analyze the cognitive reading strategies used and their contribution to help students grasp the understanding of the texts.

This study was conducted at STKIP Garut, one of universities in Garut, Indonesia. The participants of this study were 76 EFL freshmen students of English Education Program. They were selected using simple random sampling to fill in questionnaire. To select the respondents for Thinking-Aloud Protocol (TAP), the researcher used purposive sampling. There were 15 students as sample represented three categories as high achiever, middle achiever, and low achiever derived from five classes.

4. Results

4.1 The Results of Questionnaire

The table below is the quality of reading strategies frequently used by more than half of the respondents based on the questionnaire.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>U+A (F)</th>
<th>U+A (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading the title and imagining what the text might be about</td>
<td>56</td>
<td>73.7</td>
</tr>
<tr>
<td>Having the picture of the events in the text in mind</td>
<td>48</td>
<td>63.2</td>
</tr>
<tr>
<td>Looking at illustration/pictures and trying to guess how they are related to the text</td>
<td>46</td>
<td>60.5</td>
</tr>
<tr>
<td>Guessing the meaning of a word from context</td>
<td>44</td>
<td>57.9</td>
</tr>
<tr>
<td>Using a dictionary for the important words</td>
<td>42</td>
<td>55.3</td>
</tr>
<tr>
<td>Rereading the text to remedy comprehension failures</td>
<td>41</td>
<td>53.9</td>
</tr>
<tr>
<td>Rereading a sentence</td>
<td>40</td>
<td>52.6</td>
</tr>
<tr>
<td>Considering the other sentences in the paragraph to figure out the meaning of a sentence</td>
<td>40</td>
<td>52.6</td>
</tr>
</tbody>
</table>

4.2 Results of Thinking-Aloud Protocols (TAPs)

Regarding the strategies used by the students during TAPs procedure, there were only seven cognitive reading strategies which were used by the students. The list of the employed strategies based on the TAPs results is shown in the Table 3 below.
The data derived from TAPs presented in Table 3 above shows the consistency with the questionnaire results in some cognitive reading strategies used by the students. They are guessing the meaning of a word from context, using the dictionary for the important words and considering the other sentences in the paragraph to figure out the meaning of a sentence. In contrast, the strategy of using title to predict the text content, which achieved the highest percentage in the questionnaire at "always" and "usually" level, was not employed at all in the TAPs. This might occur because there were no titles available in the texts given in the TAPs. Similarly, the imagery strategies such as looking at illustration / pictures and trying to guess how they are related to the text and also having the picture of the events in the text in mind which were used by more than half of the respondents in the questionnaire results (60.5% and 63.2%) were also not employed at all in the TAPs. This might occur because there were no pictures available in the texts given in the TAPs. Meanwhile, re-reading the text to remedy comprehension failures, which achieved 53.9% in the questionnaire, was employed by only 7% of the participants in TAPs. This might occur because they got restricted time to accomplish TAPs procedure (33 minutes).

Meanwhile cognitive reading strategies used by the students to answer the questions in reading comprehension test successfully are presented in the following table.

Table 4 Cognitive strategies used to answer reading comprehension test

<table>
<thead>
<tr>
<th>Types of Questions in Reading Test</th>
<th>Cognitive Reading Strategies Used by Participants Who Successfully Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify the topic and the main idea of the passage (question number 1, 12, and 21)</td>
<td>deduction and summarizing the main ideas</td>
</tr>
<tr>
<td>The meaning of the unknown words (question number 2, 5, 8, 9, 14, 15, 18, 20, 22, 24, 25, and 27)</td>
<td>guessing the meaning from context, elaboration, guessing the meaning from grammatical category, and considering the other sentences to figure out the meaning</td>
</tr>
</tbody>
</table>
5. Discussion

The results of the study shows that the students use four strategies at high frequency level such as using the title to predict the content of the text, guessing the meaning of a word from context, using a dictionary for important points, and considering other sentences to figure out the meaning of a sentence. This result answers the first research question about cognitive reading strategies which are frequently used by the students to enhance their reading comprehension.

In addition, this study also supports previous study in that there were several strategies need to be developed by the students since these strategies help them to enhance their reading skills but rarely used in their daily reading activities. These strategies are reading the first line of every paragraph to understand what the text is about, guessing the meaning of a word from grammatical categories, taking notes on the important points of the text, classifying the words according to their grammatical categories, skipping some of the unknown words, recognizing organization, summarizing the main ideas, re-reading the text to remedy comprehension failures, reading for meaning and concentrating on meaning, and last but not least, the strategy of paraphrasing.

Meanwhile, regarding the second research question about the most helpful cognitive reading strategies to be developed by the students especially when they answer questions in reading comprehension test successfully, it was found that the students who successfully answered questions in reading comprehension test, used six cognitive reading strategies. They are deduction, summarizing the main ideas, guessing the meaning from context, elaboration, guessing the meaning from grammatical category, and considering the other sentences in the paragraph to figure out the meaning of a sentence.

Among those strategies, there are three cognitive reading strategies considered the most helpful to be developed by the university students especially in answering questions in reading comprehension test successfully. First, elaboration strategy is the most helpful strategy to use dealing with reading comprehension, understanding what implies in the text or inferring from the text, identifying the tone of the passage, and analyzing the author's purpose. Second, deduction strategy is the most helpful strategy to use dealing with identifying the topic or the main idea of the passage, and predicting the preceding paragraph. Third, guessing the meaning from context, which belongs to elaboration strategy, indeed is the most helpful strategy to use dealing with guessing the unknown word.

This is consistent with the previous study suggested that the students have to use some cognitive reading strategies which will help them to solve the problems when they read a text.
Ozek & Civelek (2006) referred to what stated by Carrel (1989) who includes guessing the meaning of the unknown words from context and considering background knowledge to the text as one of strategies which can help readers to improve their reading ability significantly.

6. Conclusion

It is important to note that cognitive reading strategies should be taught to EFL students especially students belong to poor readers who do not use cognitive reading strategies. In other words, the lecturers need to teach the students types of cognitive reading strategies and explain the function of each cognitive reading strategy. Then, not only cognitive reading strategies but also other strategies considered good reading strategies because those good reading strategies can help students to grasp the understanding of the text they read.

The students need to know in what circumstance they should use the strategies. For example, they should know what strategy to use when they want to know the meaning of the unknown word without looking up in the dictionary. Certainly, they are supposed to practice using those good reading strategies in reading. Therefore, the lecturers are suggested not only to teach those good reading strategies but also to encourage the students to use the strategies.

Since the study is also expected to develop the awareness of reading strategies to enhance university students' reading comprehension, it is recommended to identify students' awareness of good reading strategies and what strategies they have already employed. This can help to think further what treatment should be conducted for the sake of the students' success in continuing their academic studies especially in reading comprehension course.

The present study which used the data from self-reported questionnaire can be bias in case of the participants tried to make them look competent by giving the score as high as possible. In order to anticipate such situation, the participants were not obliged to write their names on the questionnaire form. The questionnaire used in the present study contains not only good reading strategies but also some other poor reading strategies to avoid bias.

For further study, it is suggested to have more items in the self-reported questionnaire consisting good reading and poor reading strategies to make it balance to avoid bias in the result of the study. Finally, TAPs procedure can be used as a good methodology in spite of time-consuming and difficult to analyze since they tolerate the objective observation on the students' behavior and the mental pictures of the participants. In addition, this kind of procedure can figure out the strategies considered the most helpful to be developed by the students to grasp the understanding of the text they read in their academic studies.

References


Hood, et al (2005), Focus on Reading, NCELTR, Sidney.


**Author**

Anne Ratna S graduated Cum Laude in December 2007 with the degree Scholar of English Education Program at STKIP Garut in West Java, Indonesia. She finished her Master of Education in English Education Program at Indonesia University of Education in January 2011. At present, she is teaching in English Education Program at STKIP Garut, Indonesia.