CHAPTER ONE

INTRODUCTION

Chapter one consists of a description of rationale and significance of the problems, purposes of the study, scope of the study, hypotheses, definition of important terms as well as application.

RATIONALE AND SIGNIFICANCE OF THE PROBLEM

" Every act of comprehension involves one's knowledge of the world as well"

(Anderson, Reynolds, Schallert, and Goetz,1977:369 cited in Carrell and Eisterhold, 1983)

The quote reminds us - foreign language teachers of awareness of comprehension in a second or foreign language. Reading comprehension has been defined as a process of constructing meaning from new information, new ideas, or new concept when they can be related to what the readers already know (Kant,1781/1963 cited in Carrell and Eisterhold,1983). This is known as background knowledge or prior knowledge. According to the schema theory, reading comprehension is an interactive process between the text and the reader's prior background knowledge (Adams and Collins, 1979; Rumelhart, 1980 cited in Carrell and Eisterhold, 1983). Efficient comprehension requires the ability to relate the textual material to one's own knowledge. Comprehending words, sentences, and the entire texts involves more than just relying on one's linguistic knowledge as mentioned in the opening quote from Anderson et al. Reading comprehension involves one's knowledge of the world, which may be culturally based and culturally biased (Carrell and Eisterhold,1983) when the values expressed by the text differ from the values held by the reader.

Reading is a complex information processing skill in which the reader interacts with text in order to (re)create meaningful discourse (Grabe, 1991). In Eskey's (1970) point of view

reading is being most important skill and the ability to read the text with good comprehension has long been recognized as being as important as oral skill, if not more important.

Early work in reading in English as a foreign language assumed that reading is a passive, **bottom-up,** decoding process. This process is also termed text-based or data-driven. According to bottom-up processing, the cognitive system is organized hierarchically. The most basic perceptual systems are located at the bottom of the hierarchy, and the most complex cognitive (e.g. memory, problem solving) systems are located at the top of the hierarchy. In such a hierarchy, lower levels of processing are connected to the stimulus (i.e. print or sound) and are concerned mainly with recognizing and decoding it. On the other hand, it would suggest that linguistic input is received, 'scanned in', as it were, and processed, beginning with the smallest unit and ending with larger units of meaning. Thus, in terms of reading, bottom up models claim that the reader perceives every letter, organizes the perceived letters into words, and then organizes the words into phrases, clauses, and sentences. Meaning, at any level (e.g. word or phrase), is accessed only once processing at the previous (i.e. lower) level has been completed. Thus the reader will process all the letters in a word before the meaning of the word is accessed; likewise, the reader will process all the words in a phrase or a clause before constructing its meaning.

However, before 1970, there was recognition of the importance of background knowledge and in particular of the role of sociocultural meaning in second language reading comprehension. This recognition of an active part of the reading is clearly known by later experts in reading such as Goodman, whose psycholinguistic model of reading has been described as a 'psycholinguistic guessing game'. He argued that a message which has been encoded by a writer as a graphic display were reconstructed by the reader as best as he can. (Goodman, 1971 : 135 cited in Carrell and Eisterhold, 1983). He claimed that readers do not read every word, but sample the text, make hypotheses about the next word to be encountered, sample the text again to confirm or revise their prediction, and so forth. Readers need only to see enough of the text in order to be able to guess the meanings of the words or phrases. This model is known as **'top down processing'** or 'conceptually driven'. Smith (1971,1979,1982 cited in Grabe, 1991) concurred with Goodman's arguments that reading was an imprecise, hypothesis-driven process.

He further argued that sampling was effective because of the extensive redundancy built into natural language as well as the abilities of readers to make the necessary inferences from their background knowledge. In effect, the reader contributed more than did the visual symbols on the page.

In providing support to the psycholinguistic model of reading, Clarke and Silberstein (1977 cited in Grabe, 1991) outlined implications for instruction which characterized reading as an active process of comprehending. Students need to be taught strategies to read more efficiently (e.g., guess from context, define expectations, make inferences about the text, skim ahead to fill in the context, etc.). For teachers, the goal of reading instruction was to provide students with a range of effective approaches to texts—these include helping students define goals and strategies for reading, to use prereading activities to enhance conceptual readiness, and to provide students with strategies to deal with difficult syntax, vocabulary, and organizational structure.

Furthermore, Coady (1979 cited in Carrell, 1988) reinterpreted Goodman 's psycholinguistic model into a model more specifically suited to second language learners. He argued that a conceptualization of the reading process requires three components: process strategies, background knowledge, and conceptual abilities.

According to this model a reader's background knowledge interacts with conceptual abilities and process strategies, more or less successfully, to produce comprehension. (see Figure 1) By *conceptual abilities*, Coady suggests that they are general intellectual capacity, by *processing strategies*, he means a variety of sub components of reading ability, including other sub components which are also more general language processing skills which also apply to oral language (e.g., grapheme- morpho-phonemes correspondences, syllable-morpheme information, syntactic information both deep and surface structure, lexical meaning, and contextual meaning). From the model, Coady clearly states that *background knowledge* plays an important role in comprehending the text, as many researchers have noticed that students with a western background knowledge of some kind learn English faster, on the average, than those without such a western background.

Coady's (1979) Model of the ESL reader

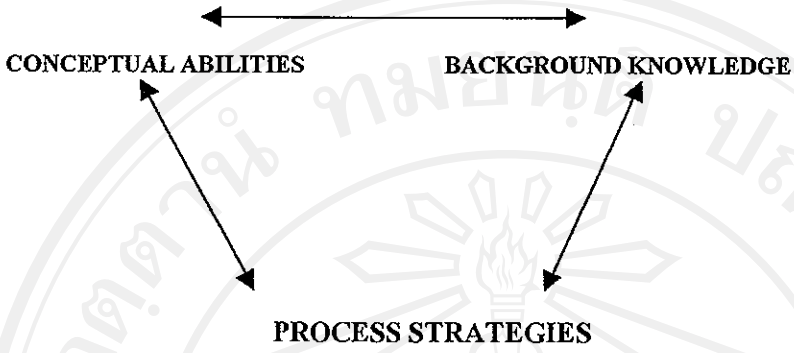

Figure 1 Coady's (1979) Model of the ESL reader

Coady also suggests that background knowledge may compensate for certain syntactic deficiencies as shown:

> The subject of reading materials should be of high interest and relate well to the background of the reader, since strong semantic input can help compensate when syntactic control is weak. The interest and background knowledge will enable the student to comprehend at a reasonable rate and keep him involved in the material in spite of its syntactic difficulty. (Coady,1979:12)

Therefore, in addition to the general linguistic abilities to interpret meaning from the printed text, readers also exploit the concept already stored in their memories. Clark and Siberstein indicates the power of background knowledge as show:

> " The reader brings to the task a formidable amount of information and ideas, attitudes and belief. This knowledge, coupled with the ability to make linguistic predictions, determines the expectations the reader will develop as he reads. Skill in reading depends on the efficient interaction between linguistic knowledge and knowledge of the world (Clark and Siberstein, 1977:136-137 cited in Carrell and Eisterhold, 1983)".

Since then the top-down approach has been advanced in second language reading (Carrell, 1982; Carrell and Eisterhold, 1983; Johnson, 1981, 1982; Hudson, 1982). In the top-down view of second language reading , not only is the reader an active participant in the reading

process, making predictions and processing information, but also everything in the reader's prior experience or background knowledge plays a significant role in the process. In this view, not only are the reader's prior linguistic knowledge and level of proficiency in the second language important, but the reader's prior background knowledge of the content area of the text ("content schemata") as well as of the rhetorical structure of the text ("formal schemata") are also vital. Research conducted within the general framework of schema theory has shown the significant roles played in English as a second language reading by both content and formal schemata (Johnson, 1981,1982; Carrell, 1982, 1984b, 1985, 1987,1989; Carrell and Eisterhold, 1983; Aron, 1986; Taglieber, 1988; Eisterhold, 1990; Grabe, 1991; Singhal,1998). On the other hand the greater the background knowledge a reader has of a text's content area and formal discourse structure, the better the reader will comprehend that text.

The role of background knowledge in language comprehension has been formalized as schema theory. Schema is the technical term used by cognitive scientist to describe how people organize and store information in memory. The brain actively seeks, selects, organizes, stores, and then when necessary, retrieves and uses this information about the world (Smith, 1988 cited in Vacca & Vacca, 1998). Schema reflects the experiences, conceptual understanding, values, attitudes, skills, and strategies a reader brings to a text situation. Furthermore, Vacca & Vacca (1998)concluded that schemata greatly influence reading comprehension and learning. When a match occurs between students' prior knowledge and text materials, schemata function in at least three ways.

First, schemata provide a framework for learning that allows readers to seek and select information that is relevant to their purposes for reading. In the process of searching and selecting, readers are more likely to make inferences about the text. Inferences occur in situations where readers anticipate content and make predictions about upcoming material or fill in gaps in the material during reading.

Second, schemata help readers organize text information. The process by which readers organize and integrate new information into old facilitates the ability to retain and remember what readers read. A poorly organized text is difficult for readers to comprehend.

And third, schemata help readers elaborate information. When readers elaborate what they have read, they engage in a cognitive process that involve deeper levels of insight, judgement, and evaluation. Readers are inclined to ask, "So what?", as they engage in conversation with the author.

One type of schemata, or background knowledge that a reader brings to comprehend a text is **formal schemata**, or knowledge of the textual organizational structures of different type of texts. Another type is **content schemata**, which is knowledge relative to the content area of the text. It is important to understand the distinction between these schemata.

Formal schemata—that is, the readers' background knowledge which they possess about how a text is organized, the types of the text, the differences in the structure of fables, simple stories, scientific texts, newspaper, articles, poetry, and so forth. This type of schema influences the comprehension of the text. Successful readers appear to make better use of text organization than do poor readers, write better recalls by recognizing and using the same organizational structure as the text studied, and generally, recall information better from certain types of text organization. Carrell (1984a) has shown that more specific logical patterns of organization such as cause-effect, compare-contrast, and problem-solution, improve recall compared to texts organized loosely around a collection of facts.

Content schemata or background knowledge of the content area of the text also has a major influence on reading comprehension. A large body of literature has argued that prior knowledge of text-related information strongly affects reading comprehension (Johnson, 1981,1982; Aron, 1986; Carrell,1987; Carrell and Eisterhold, 1983; Chia, 2001). Similarly, cultural knowledge has been shown to influence comprehension (Carrell,1984b).

In addition, Carrell (1984b, 1987), and Carrell and Eisterhold (1983) have investigated the usefulness of the notion of schema theory for second language reading. This research has found that activating content information plays a major role in students' comprehension and recall of information from a text. Carrell (1987: cf. Barnett, 1989) has also investigated the importance of formal schemata—structures of knowledge about language and textual organization—and has

found this to be a significant independent contributor to reading ability. Carrell (1988b) has also argued that a lack of schema activation is one major source of processing difficulty with second language readers. This has been verified not only through culture-specific text comparisons but also in discipline-specific comparisons of readers with familiar and less familiar background knowledge (Alderson & Urquhart, 1988; Strother & Ulijin, 1987 cited in Grabe, 1991).

Schema theory has provided a strong rationale for prereading activities (Carrell, 1985, 1988a) since a high degree of background knowledge can overcome linguistic deficiencies (e.g., Hudson, 1982). The major implication to be drawn from the research is that students need to activate prior knowledge of a topic before they begin to read. If students do not have sufficient prior knowledge, they should be given at least minimal background knowledge from which to interpret the text (Carrell, 1988a).

In activating students' prior knowledge for effective top down processing in order to facilitate reading comprehension, three activities which proved to be effective in enhancing reading comprehension were selected. The details of the three activities are described as follow:

SEMANTIC MAPPING

Semantic Mapping is a graphic representation, often called a semantic map, semantic web, or cognitive map. It embraces a variety of strategies designed to display graphically information within categories related to a central concept as shown in figure 2. Variations of semantic mapping are popular among teachers as a means of increasing reading comprehension and developing writing skills.

Researchers define the definition of semantic mapping as the following:

Avery et al (1997) suggested that the semantic mapping is a graphic representation or picture of one's thoughts, ideas, and attitudes toward a key concept, the process of semantic mapping focuses on categorizing and connecting these thoughts, ideas, and attitudes in relation to the key concept. In addition, Davis and McPherson (1989, cited in Tungpong, 1993) defined that

semantic mapping is the presentation of the content area of the text and depicts relationships among each concept in a graphic presentation. Some are developed from plot structure or story grammar which are similar to the text structure or structure overview. In the application, maps can be made prior to, during, or at the conclusion of an instructional unit. As a prereading strategy, the use of semantic mapping activates students' prior knowledge of a given topic and

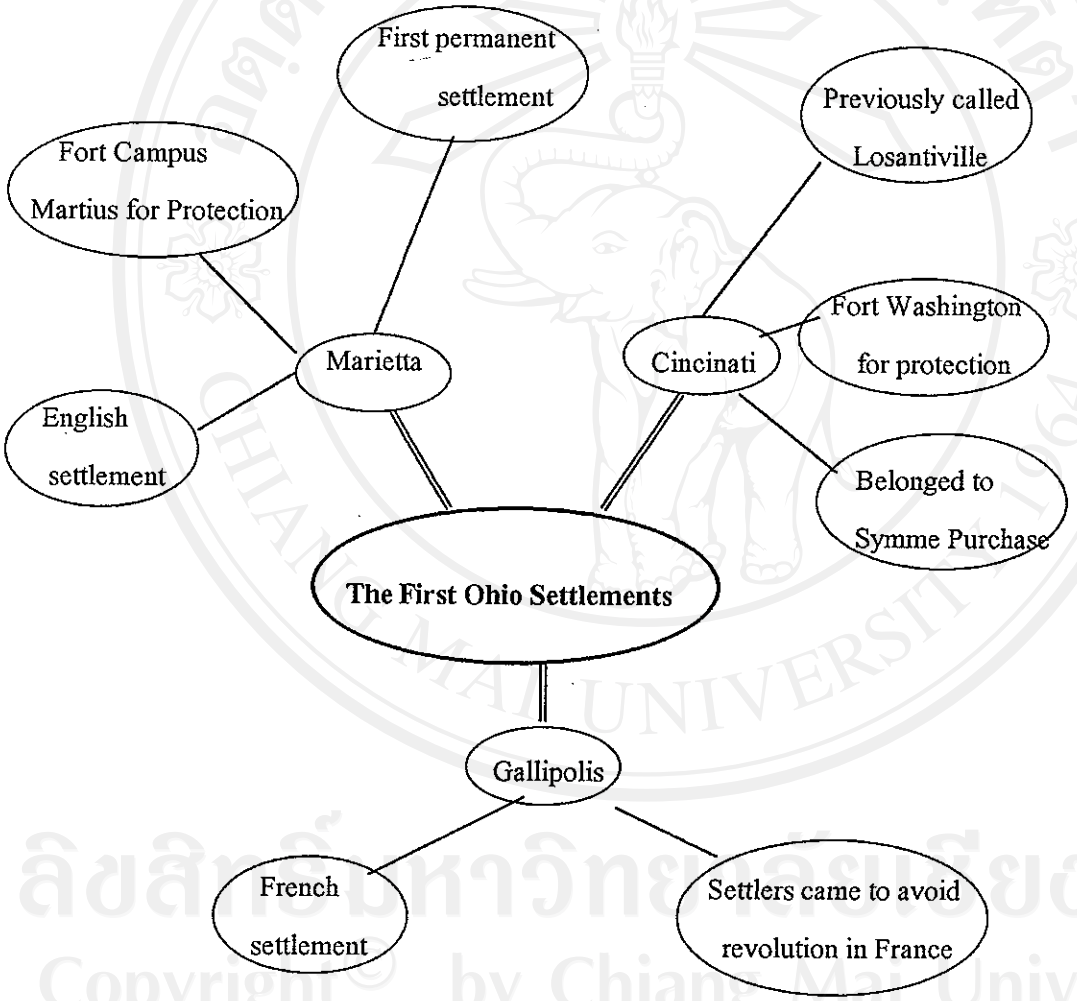

Figure 2 Semantic Map: The First Ohio Settlements (Vacca & Vacca, 1998 p. 406)

stimulates them to use that knowledge to interact with the text. As to review or conclude the information, the process of developing a semantic map helps students to make connections among

ideas, see relationships among the characters, places, and events associated with a given concept. In addition, a map may also point to areas that have been neglected in their studies.

PICTORIAL PREVIEWING

Materials for pictorial previewing may be pictures, photos, illustration, graphs, maps, diagram etc. Researchers in education have examined how pictures influence learning of text. The consensus is that pictures indeed facilitate recall of text, although the interaction between pictures and text is complex. There are numerous ways through which pictures facilitate processing of text: by evoking an affective or emotional response, by facilitating comprehension and retention, and by augmenting the information presented in the copy. In addition, Mayer (1980 cited in Rakes et al 1995) viewed illustrations as "potential vehicles for helping students understand expository text (p.240) using three primary cognitive processes that can enhance reading comprehension: (a) direct learner attention to critical information in the text; (b) direct learners to build internal connections among ideas found in the text; (c) build connections between ideas in the text and the learner's existing knowledge.

In conclusion, pictures activate the readers' prior knowledge relevant to understanding the new text, make the reading task easier and connect the new content more meaningfully to prior knowledge, serve as a tool to create or confirm under-standing, provide knowledge to students who are reading about things that are not part of their experience. Furthermore, pictures can make reading a text more enjoyable, result in positive attitudes toward reading in general and toward illustrated text in particular, and can influence the time readers are willing to spend on a text (Peeck, 1987 cited in Hibbling and Rankin-Erickson, 2003)

SELF-QUESTIONING

Self-questioning is a strategy designed to help students activate their background knowledge, improve comprehension of test by stimulating ideas and motivating them to interact with reading material, maintain attention, become more motivated, and verbalize what they learn

(Shumaker, Deshler, Nolan & Alley, 1994 cited in Lebzelter & Nowacek, 1999).The relationship between question generation by students and their thinking processes and learning achievement has long been debated. The point of view of questioning as a spontaneous skill (Cazden, 1972, Graesser, Lang, & Horgan, 1988, Graesser & Pearson, 1994, Ross, 1974, cited in Glaub et al., 1997) or as an acquired skill (Dillon, 1988, King, 1994, Wong, 1985 cited in Glaub et al., 1997). Researchers have found that self-questioning is an active strategy that establishes and promotes understanding (Dillon, 1988, Gavalek & Raphael, 1985, Singer & Donlan, 1982, cited in Glaub et al. , 1997).

This thesis presents the study of investigating the roles of background knowledge or top-down processing on reading comprehension and the effects of prereading activation when students do different prereading activities.

The general research questions to be investigated in the thesis are the following:

1. Do prereading activities enhance the students' reading comprehension?
2. Does one type of prereading activities facilitate students' reading comprehension better than the others?

PURPOSES OF THE STUDY

1. To compare the students' reading comprehension scores whose background knowledge is not activated with those whose background knowledge is activated in the prereading phase.
2. To compare the effects of three types of background knowledge activation: semantic mapping, pictorial previewing, and self-questioning.

SCOPE OF THE STUDY

1. The subjects of this study consists of 96 Mathayom Suksa 5 students of English Core Course (English 0110) in the second semester of Muang Chiang Rai School.
2. There are two related variables in the study:

2.1 Independent variables are the three types of background knowledge activation: semantic mapping, pictorial previewing, and self-questioning.

2.2 Dependent variables are the students' abilities in reading comprehension.

HYPOTHESES

1. After their background knowledge has been activated, the comprehension scores of students who receive different kinds of prereading activities will be higher than those of the control group.
2. There is a difference in the reading comprehension scores of students in the three different prereading activities groups.

DEFINITION OF IMPORTANT TERMS

1. Background knowledge activation means the prereading activities which are provided to the learners prior to reading of a text so they retrieve and use their background knowledge about the text to construct meaning for comprehending the text.

The prereading activities for each experimental group are:

1.1 Semantic mapping which is the information displayed graphically in a diagram or 'map' within categories related to a central concept.

1.2 Pictorial previewing which is the text's illustration or the pictures related to the content area of the reading passage.

1.3 Self-questioning which are the questions related to the reading passage, generated by students before reading the material.

2. Reading Comprehension means the learner's ability to comprehend both literal message and interpretive message of the text, as assessed by the reading comprehension test.

EXPECTED APPLICATION

1. The result from this study will help teachers of English as a foreign language be aware of the importance of background knowledge in teaching reading comprehension.
2. The result from this study will provide guidelines for teachers of English as a foreign language to develop their teaching, specifically of reading comprehension skill.
3. The result from this study will provide guidelines for researchers for further study.