CHAPTER TWO

LITERATURE REVIEW

Chapter two presents the scope of the literature review about three types of background knowledge activation, theory related to the topic, and other components. Key components are highlighted and clarified in order to confirm possibilities in conducting the research. These components are the nature of reading and comprehension, levels of comprehension, the schema theory, the type of text as well as three types of prereading activities: semantic mapping, pictorial previewing, and self-questioning. The details are given in the respective order:

1. the nature of reading and comprehension
2. level of comprehension
3. the schema theory
4. type of schema
5. type of text
6. the prereading activities : semantic mapping, pictorial previewing, and self-questioning.

The details of these topics are given as follows:

THE NATURE OF READING AND COMPREHENSION

Reading is the process of recognition, interpretation, and perception of written or printed material either on a conventional printed page or on a computer screen in an electronic environment. On the other hand, comprehension is the understanding of the meaning of the written material and covers the conscious strategies that lead to understanding. The process of reading comprehension deals with both language form and language content.

Reading is an active process of communication from the writer to the reader. The reader

interacts with the text in order to create meaning from the discourse. Reading involves the recognition of letters, words, phrases, and clauses, and in some respects, it can be considered a simpler process than comprehension which on the other hand, is a process of negotiating understanding between the reader and the writer. Comprehension is a more complex psychological process which includes linguistic factors, such as phonological, morphological, syntactic, and semantic elements, in addition to cognitive and emotional factors. The reader receives information from the author via the words, sentences, paragraphs, and so forth, and tries to understand the inner feelings of the writer. More recently, scholars (notable Goodman, 1967, and Smith, 1971 cited in Silberstein, 1993) developed a pshcholinguistic perspective of reading, focusing on its active and cognitive processes.

According to this point of view, efficient readers develop predictions about the content of a passage. Along with context clues, knowledge and experience help readers develop expectations about what they will read. The efficient reader then reads rapidly to confirm or refute these predictions. If hypotheses are confirmed, the reader continues with an increasing store of information on the topic. If they are not confirmed, the reader returns and rereads more carefully. Hosenfeld (1977 cited in Hawkins, 1991) also pointed out that good readers constantly make predictions about what they are reading while they are reading, and that these predictions are based on semantic, syntactic, and punctuation cues. If the guess makes semantic and syntactic sense they continue to read. If it does not—especially if it doesn't make semantic sense—they recheck and make an amended guess.

The guessing process model (Goodman, 1967 cited in Hawkins, 1991) assumes that readers can identify important words in reading, and can in fact make semantic predictions about their relationship to one another. It assumes they have acquired enough language to predict syntactic relationships and that somehow these two systems (semantic and syntactic) allow them to hold passage content in memory for further guesses.

In fact, second language learners are not able to predict at all in the beginning stage of reading with much accuracy, since their experience with the language, in terms of both syntax and semantics, is limited.

The psycholinguistic model of reading described sampling and guessing of vocabulary and syntax, a facet that has recently been challenged (Grabe, 1991). However, the concept of hypothesis formation remains important. The sentence has been the principal unit of linguistic analysis and description and the object measure in reading comprehension for a period of time (Bormuth et al, 1970, Pearson 1974-1975 cited in Perkins, 1983). Linguists and reading compre- hension researchers have concerned themselves with how a reader associates a surface string of words (surface structure, constituent structure) with a semantic representation (deep structure). Presently, the focus of research has shifted to larger units, the reader's contributions to the text and reading process, and how the reader relates incoming knowledge to previous knowledge.

Moreover, Fisher and Smith (1977 cited in Perkins, 1983) claimed that there are four skills necessary for processing text structure, and by analogy it can be seen that these four skills are necessary for inferencing and semantic constructivity: prior knowledge, logical skills, systemic integration, and active processing. Prior knowledge influences the reading process, because it directly affects the quality and quantity of prose processing. Similarly, Fisher and Smith (1977:24) concluded that readers require knowledge and skills for actively processing the text. Furthermore, Wanat (1977 cited in Perkins, 1983) has claimed that the linguistic-cognitive operations such as inferencing can serve as language accessors to reading. While inferencing is an important aspect of reading and semantic constructivity, Wanat further claimed that inferencing is a linguistic language access to meaning and that comprehension of the relationship within and between sentences is not specific to reading; inferencing may be one component to broad, global language proficiency.

LEVEL OF COMPREHENSION

Because reading is a thoughtful process, it embraces the idea of levels of comprehension. Readers respond to meaning at various levels of abstraction and conceptual difficulty. Vacca & Vacca (1998 p. 437) suggest three levels of comprehension as shown in Figure 3.

At the literal level, students read the line of the content material. They stay with print sufficiently to get the gist of the author's message. In simple terms, a literal recognition of the message determines what the author says.

Getting information explicitly from the text

Literal

Reading the lines

Levels of Comprehension

Putting together information, perceiving relationships, and making inferences

Interpretive

Reading between the lines

Using information to express opinions and form new ideas
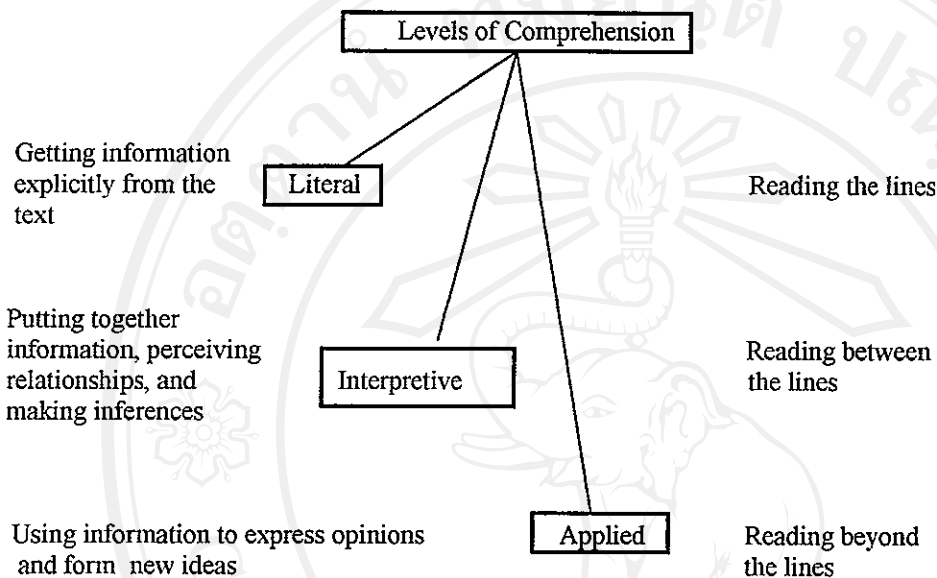
Applied

Reading beyond the lines

Figure 3 : Levels of Comprehension

Knowing what the author says is necessary but not sufficient in constructing meaning with text. Good readers search for conceptual complexity in material. They read at the interpretive level—between the lines. They focus not only on what the authors say but also on what authors mean by what they say. Herber (1978 cited in Vacca & Vacca, 1998) clarifies the difference between the literal and interpretive levels this way: "At the literal level readers identify the important information. At the interpretive level readers perceive the relationships that exist in that information, conceptualizing the ideas formulated by those relationships" (p. 45)

The interpretive level delves into the author's intended meaning. How readers conceptualize implied ideas by integrating information into what they already know is part of the interpretive process. Recognizing the thought relationships that the author weaves together helps readers make inferences that are implicit in the material.

Reading at the applied level is undoubtedly akin to discovery. It underscores the constructive nature of reading comprehension. Bruner (1961 cited in Vacca & Vacca,1998 p.

438.) explains that discovery "is in its essence a matter of rearranging or transforming evidence in such a way that one is enabled to go beyond the evidence so reassambled to additional new insights" (p. 21). When students respond to text at the applied level, they know how to synthesize alongside what they know already—to express opinions about and to draw additional insights and fresh ideas from content material.

According to Barrett (1972 cited in Dupuis M., M., & Askov E., N. p 25.), *Taxonomy of Reading Comprehension* comprised four levels: Literal, Inferential, Evaluation, and Appreciation. Here is his definition of these levels and some specific tasks that readers perform at various levels.

1. *Literal Recognition or Recall.* Literal comprehension consists of two types of tasks: recognition task and recall task. *Recognition Tasks* frequently take the form of purposes for reading, require the student to locate or identify explicit statements in reading selection itself or in exercises that use the explicit content of the reading selection. *Recall Tasks* demand the student to produce from memory explicit statements from a selection; such task are often in the form of questions teachers pose to students after a reading is completed. Two additional comments seem warranted with regard to literal comprehension tasks. First, although literal comprehension tasks can be overused, their importance cannot be denied, since a student's ability to deal with such tasks is fundamental to his ability to deal with other types of comprehension tasks. Second, all literal comprehension tasks are not necessarily of equal difficulty. For example, the recognition or recall of a single fact or incident may be somewhat easier than the recognition or recall of a number of facts or incidents, while a more difficult task than either of these two may be the recognition or recall of a number of events or incidents and the sequence of their occurrence. Also related to this concern is the hypothesis that a recall task is usually more difficult than a recognition task, when the two tasks deal with the same content and are of the same nature. Some examples of literal comprehension tasks are:

1.1 *Recognition or Recall of Details.* The student is requires to locate or identify or to

call up from memory such facts as the names of characters, the time a story took place, the setting of a story, or an incident described in a story, when such facts are explicitly stated in the selection.

1.2 *Recognition or Recall of Main Ideas.* The student is asked to locate or identify or produce from memory an explicit statement in or from a selection which is the main idea of a paragraph or a larger portion of the selection.

1.3 *Recognition or Recall of Sequence.* The student is required to locate or identify or to call up from memory the order of incidents or actions explicitly stated in the selection.

1.4 *Recognition or Recall of Comparisons.* The student is requested to locate or identify or to produce from memory likenesses and differences among characters, times in history, or places that are explicitly compared by an author.

1.5 *Recognition or Recall of Causes and Effect Relationships.* The student in this stance may be required to locate or identify or to produce from memory reasons for certain incidents, events, or characters' actions explicitly stated in the selection.

1.6 *Recognition or Recall of Character Traits.* The student is requested to locate or to call up from memory statements about a character which help to point up the type of person he was when such statements were made by the author of the selection.

2. *Inference.* Inferential comprehension is demonstrated by the student when he uses a synthesis of the literal content of a selection, his personal knowledge, his intuition and his imagination as a basis for conjectures or hypotheses. Conjectures or hypotheses derived in this manner may be along convergent or divergent lines, depending on the nature of the task and the reading material involved. For example, inferential tasks related to narrative selections may permit more divergent or creative conjectures because of the open-ended possibilities provided by such writing. On the other hand, expository selections, because of their content, may call for convergent hypotheses more often than not. In either instance, student may or may not be called upon to indicate the rationale underlying their hypotheses or conjectures, although such a requirement would seem to be more appropriate for convergent rather than divergent hypotheses. Generally, then, inferential comprehension involves more logical thinking than literal

understanding and is elicited by purposes for reading, and by teachers' questions which demand thinking and imagination. Examples of inferential tasks related to reading are:

2.1 *Inferring Supporting Detail.* The student is asked to guess about the additional facts the author might have included in the selection which would have made it more informative, interesting, or appealing.

2.2 *Inferring the Main Idea.* The student is required to provided the main idea, theme, or moral which is not explicitly stated in the selection.

2.3 *Inferring Sequence.* The student may be requested to predict what action or incident might have taken place between two explicitly stated actions or incidents; he may be asked to hypothesize about alternative beginning to a story if the author had not provided one.

2.4 *Inferring Comparisons.* The student is required to infer likenesses and differences in characters, times, or places. Such inferential comparison revolve around ideas such as: "here and there," "then and now," " he and he," "he and she," and "she and she."

2.5 *Inferring Cause and Effect relationship.* The student is required to hypothesize about the motives of characters and their interactions with others and with time and place. He may also be required to conjecture as to what caused the author to include certain ideas, words, characterizations, and actions in this writing.

2.6 *Inferring Character Traits.* In this case, the student may be asked to hypothesize about nature of the characters on the basis of explicit clues presented in the selection.

2.7 *Inferring Outcomes.* The student is requested to read an initial portion of a selection, and on the basis of this reading to conjecture about the outcome of the selection.

2.8 *Inferring about Figurative Language.* The student is asked to infer literal meanings from the author's figurative use of language.

3. *Evaluation.* The student demonstrate an evaluation when he makes judgements about the content of a reading selection by comparing it with external criteria, e.g., information provided by the teacher or authorities on the subject, or with internal criteria, e.g., the reader's experience, knowledge, or values related to the subject. Evaluation requires students to make judgements about the content of their readings based on accuracy, acceptability, worth,

desirability, completeness, suitability, timeliness, quality, truthfulness, and probability of occurrence. The following are types of evaluation tasks:

3.1 Judgements of Reality or Fantasy. The student is requested to determine whether incidents, events, or characters in a selection could have existed or occurred in real life on the basis of his experience.

3.2 *Judgements of Fact or Opinion.* In this case the student is asked to decide whether the author is presenting information which can be supported with objective data or whether the author is attempting to sway the reader's thinking through the use of subjective content that has overtones of propaganda.

3.3 Judgements of Adequacy or Validity. Tasks of this type call for the reader to judge whether the author's treatment of a subject is accurate and complete when compared to other sources on the subject.

3.4 Judgements of Appropriateness. Evaluation tasks of this type require the student to determine whether certain selection or parts of selection are relevant and can contribute to resolving an issue or a problem.

3.5 Judgements of Worth, Desirability, or Acceptability. In this instance the student may be requested to pass judgements on the suitability of a character's action in a particular incident or episode. Was the character right or wrong, good or bad, or somewhere in between? Tasks of this nature call for opinions based on the values the reader has acquired through his personal experience.

4. Appreciation. Appreciation has to do with students' awareness of the literacy techniques, forms, styles, and structures employed by authors to stimulate emotional responses in their readers. Obviously, tasks which fall into this category will require varying degrees of inference and evaluation, but this primary focus must be on heightening students' sensitivity to the ways authors achieve an emotional as well as an intellectual impact on their readers. More specifically, appreciation involves cognizance of and visceral response to: (a) the artistry involved in developing stimulating plots, themes, settings, incidents, and characters, and (b) the artistry

involved in selecting and using stimulating language, in general. Examples of tasks that involve appreciation are:

    4.1 Emotional Response to Plot or Theme. Task of this type are based on the assumption that the plot or the theme of a given selection has stimulated and sustained a feeling of fascination, excitement, curiosity, boredom, sentimentality, tenderness, love, fear, hate, happiness, cheerfulness, or sadness. Provided this assumption is met, the students may be requested to determine what the author did in the process of developing the plot or theme that elicited a given emotional response.

    4.2 Identification with Characters and Incidents. Some appreciation tasks should require the student to become aware of the literal techniques and devices which prompt them to sympathize or empathize with a particular character, or to reject him, for that matter. Other tasks should require students to consider the placement, nature, and structure of events or incidents which cause them to project themselves into the action.

    4.3 Reaction to the Author's use of Language. In this instance, the student is required to recognize and respond to the author's craftsmanship as reflected in his selection of and use of words. Such tasks may deal with the connotations and denotations of selected words and the influence they have on a reader's feelings. In addition, students should at times note figure of speech, e.g., similies and metaphors, and the effect their use has on the reader.

    4.4 Imagery. Tasks of this nature require the reader to recognize and react to the author artistic ability to "paint word pictures." In other words, students should become sensitive to the techniques an author uses in order to enable them to see, smell, taste, hear, or feel things through reading.

    Although comprehension takes place at several levels, mastery at anyone level is not a prerequisite to comprehension at another level. Furthermore, it can be seen clearly that background knowledge influences on reading comprehension. Thus, teachers need to keep in mind that their important role   is to help readers accomplish the reading tasks efficiently and successfully in using their background knowledge to construct a meaningful ending—compre-

hending the text, by activating them during the prereading stage with semantic mapping, pictorial previewing, or self-questioning.

THE SCHEMA THEORY

One of the major areas of research that is connected to the issue of prediction in reading is that of schema building as it relates to one's ability to interpret text meaningfully. Researchers suggested that the importance of background knowledge in learning is basis on the schema theory. According to this theory, what we know is organized in our long-term memories into schemata. Learning consists of integrating new ideas with the ideas we already have in long-term memory. This can occur through adding information to preexisting schemata (assimilation), or discarding prior knowledge and replacing it with something different (accommodation) (Anderson, 1985 cited in Lloyd, 1998).

The schema theory goes back at least to Bartlett (1932) who studied on memory and termed the word "schema". He described that schema is the organization of one's past experiences that directly influence current perception. New information is filled into existing schema; if there is no particular fit, low grade information is lost.

The schema theory suggests that the knowledge we carry around in our head is organized into interrelated patterns. These are constructed from our previous experience of the experiential world and guide us as we make sense of new experiences. This also enable us to make predictions about what we might expect to experience in a given context, given the fact that discourse comprehension is a process of utilizing linguistic cues and background knowledge to reconstruct meaning.

Rumelhart (1977 cited in Hawkins, 1991) calls schemata the "building blocks of cognition." As such, they are used in the process of "interpreting sensory data, in retrieving information from memory, in organizing action, in determining goals and sub-goals, in allocating resources, and generally, in guiding the flow of processing in the system" (p. 34). Schemata are "packets" or "units of knowledge" that represent our beliefs about "objects, situations, events, sequences of events, actions and sequences of actions" (p. 34). He also argues that "the total set of

schemata instantiated at a particular moment in time constitutes our internal model of the situation we face at that moment in time, or, in the case of reading a text, a model of the situation depicted by the text" (p. 37). Widdowson (1983 cited in Singhal, 1998) described them as "cognitive constructs which allow for the organization of informa-tion in long-term memory". Cook (1989 p.69 cited in Singhal, 1998) states, "the mind stimulated by key words or phrases in the text or by the context, activates a knowledge schema". Widdowson & Cook both emphasize the cognitive characteristics of schema which allow us to relate incoming information to already known information. This covers the knowledge of the world, from everyday knowledge to very specialized knowledge, knowledge of language structures, and knowledge of texts and forms they take in terms of genre, and organization. In addition to allowing us to organize information and knowledge economically, schemata also allow us to predict the continuation of both spoken and written discourse. The first part of a text activates a schema, that is, calls up a schema which is either confirmed or disconfirmed by what follows.

According to schema theory, a text does not carry meaning by itself, rather, it only provides directions for readers as to how they should retrieve or construct meaning from their own, previously acquired knowledge. This previously acquired know-ledge is called the reader's *background knowledge*, in other words, our background knowledge guides our comprehension process. Furthermore, comprehending a text is an interactive process between the reader's background knowledge and the text. Efficient comprehension requires the ability to relate the textual material to one's own knowledge. Comprehending words, sentences, and entire texts involves more than just relying on one's linguistic knowledge. From this perspective, text comprehension requires the simultaneous interaction of two modes of information processing.

Bottom-up (or text-based) processing occurs when linguistic input from the text is mapped against the reader's previous knowledge. This process is also termed data driven because it is evoked by the incoming data; the features of the data enter the system through the best fitting, bottom level schemata. Schemata are hierarchically organized, from most general at the top to most specific at the bottom. As these bottom level schemata converge into higher level, more general schemata, these two become activated.

Top-down, knowledge-based, or conceptually driven information processing occurs when readers use prior knowledge to make predictions about the data they will find in a text. The system makes general predictions based on higher level, general schemata and then searches the input for information to fit into these partially satisfied, higher order schemata. This model of the reading process has been emphasized in the psycholinguistic theory (Goodman, 1967; Smith, 1978b cited in Dubin, F., & Bycina, D., 1991).

According to this theory, the role of readers was considered to be quite active: they predict meaning as they read, they take in large chunks of text at a time, they do not attend to separate letters, rather they match what they already know with the meaning they derive from the text. In this view, reading is more a matter of reconstructing meaning using only partly the graphophonic, syntactic, and semantic systems of the language. More salient to successful reading is being able to guess what the author will say next by confirming predictions related to one's past experience and knowledge of the language. Inevitably, this model took on the nickname of "top-down reading" since it stresses comprehension of larger units of meaning. Second language reading specialists were early advocates of this dynamic view of the nature of reading, with the result that many of the materials produced for reading in a second of foreign language adopted instructional strategies which stressed activities such as guessing the meaning of words from the context, previewing an article before reading it in order to have an overall view of its theme, and actively engaging in predicting what the author might say. In addition, materials have stressed reading strategies derived from top-down reading theory, such as reading for main ideas of whole sections and paragraphs, looking for details which offer supporting evidence, and reading as rapidly as possible in order to understand the overall theme of a passage

An important aspect of top-down and bottom-up processing is that both should be occurring at all levels simultaneously (Rumelhart, 1980 cited in Carrell, 1983). The data that are needed to instantiate, or fill out, the schemata become available through bottom-up processing; top-down processing facilitates their assimilation if they are anticipated by or consistant with the listeners/readers sensitivity to information that is novel or that does not fit their ongoing hypotheses about the content or structure of the text; top-down processing helps the listeners /

readers to resolve ambiguities or to select between alternative possible interpretation of the incoming data.

TYPE OF SCHEMA

Researchers have identified several types of schema. Content schema, which refers to a reader's background or world knowledge, provides readers with a foundation, a basis for comparison (Carrell & Eisterhold, 1983; Carrell, Pharis,& Liberto, 1989). Formal schema, often known as textual schema, refers to the organizational forms and rhetorical structures of written texts. It can include know-ledge of different text types and genres, and also includes the under-standing that different types of text structures, text organization, language structures, vocabulary, grammar, and level of formally register differently. Schooling and culture play the largest role in providing one with a knowledge base of formal schemata. While formal schemata covers discourse level items, linguistic or language schema include the decoding features needed to recognize words and how they fit together in a sentence. First language readers, may through repeated examples, be able to generalize a pattern or guess the meaning of a word, which may not have initially been part of their linguistic schema. The building of linguistic schema in a second language can proceed in much the same way.A number of studies which investigated the usefulness and the importance of the schema theory for second language reading were variation. Carrell (1987) has investigated the effects on ESL reading comprehension of both culture-specific content schema and formal schema, as well as any potential interaction between them. The study involved 28 Muslim Arabs and 24 Catholic Hispanic ESL students of high intermediate proficiency who enrolled in an intensive English programme at a Mid-western University. Each student read two texts, one with Muslim-oriented content and the other with Catholic-oriented content. Each text was presented in either a well-organized rhetorical format or an unfamiliar, altered rhetorical format. After reading each text, the subjects answered a series of multiple choice comprehension questions and were asked to recall the text in writing. Analysis of the recall protocols and scores on the comprehension questions suggested that schema affected the ESL reading comprehension and recall. Participants better comprehended and remembered passages

that were familiar in some way to their native cultures, or that were deemed more familiar to them. Other studies have shown similar effects in that participants better comprehended and/or remembered passages that were more familiar to them (Johnson, 1981,1982). Steffensen and Joag-Dev (1984 cited in Singhal, 1998) conducted a study using two descriptions of weddings both written in English. One was a description of an American wedding, while the other was of an Indian wedding. The subjects were Indian students (L2), and American students (L1). Both read the descriptions and were asked to recall the descriptions. It was found that readers comprehended texts about their own cultures more accurately than the other. Another study, Johnson (1982) compared ESL students' recall on a reading passage of Halloween. Seventy-two ESL students at the university level read a passage on the topic of Halloween. The passage contained both unfamiliar and familiar information based on the subjects' recent experience of the custom. Some subjects studied the meanings for unfamiliar words in the text. Results of recall protocols suggested that prior cultural experience prepared readers for comprehension of the familiar information about Halloween on the passage. However, exposure to the unfamiliar words did not seem to have a significant effect on their reading comprehension.

Nist and Mealey (1991) suggested the importance of schema theory which relates to reading comprehension that there were six functions that a schema performs which affect both the learning and the remembering of textual information:

1. A schema provides ideational scaffolding. Schemata provide a framework for organizing incoming information and retrieving stored information. Text information fits into slots within each schema.

2. A schema permits selective attention. Schemata help readers select the important information from the text. Good readers attend more to important information and to material that is unfamiliar to them.

3. A schema permits inference making. No text is completely explicit; a reader will always need to make inferences, no matter how well written the text is. Schemata permit such inferences by enabling readers to fill in the gaps with preexisting knowledge.

4. A schema allows orderly memory searches. Since schemata have slots for certain pieces of information, the reader can be guided to the kinds of information that need to be retrieved. If readers can follow the schema the author used to structure the text, later they will be able to retrieve information learner during text reading. Remembering the key headings, for example, allows students to limit a memory search to information that pertains to the desired heading rather than searching all information.

5. A schema facilitates editing and summarizing. This function also relates to readers' abilities to determine key ideas. Since a schema allows readers to distinguish important from unimportant information, it also facilitates the formulation of graphic organizers or questions containing important information.

6. A schema permits inferential reconstruction. Readers often have gaps in their memory; a schema helps them generate hypotheses about the missing information. Remembering a key battle, for example, might help a learner remember the general who fought in the battle.

From the discussion above, it is evident that schema which form part of the students' background knowledge plays an important role in text comprehension both in the first language and second language, one can assume that both native and nonnative readers will understand more of a text when they are familiar with content, formal, and linguistic schema.

TYPES OF TEXT

The two types of texts students encounter are narrative text and expository text. The narrative text depicts sequence of events involving characters and their actions , goals and feelings. Such event sequences correspond in many ways to the sequences of events that students experience directly and that constitute the core content of their world knowledge. Generally, narrative text is easier to comprehend and remember than expository text since it is usually a story or a fable genre in which the moral of a story typically appears at the end. The story is structured in a particular way. It describes a temporal sequence of events concerning one or more structures, and it reflects the goals of the characters. A general outline of the structure of a story would include the setting, the characters, a goal (sometimes called the problem), a series of actions

presented in episodes, internal reactions of the characters, and a resolution or outcome. Researchers call such outlines story grammars and have shown that having some knowledge of the basic structure of a story aids comprehension and recall. Besides, students can be guided to improve their comprehension, including the ability to draw inferences by using a prereading strategy that activates attention and prior knowledge. Obviously, as students progress, the demand and expectations placed on them change. They are increasingly expected to work with **expository material** i.e., material about history, science, geography, social studies, and other disciplines (Wilson & Rupley, 1997 cited in Gersten et al., 2001). In fact, most reading beyond the primary grades involves expository text, as does most reading that adults find necessary to succeed at work and everyday life (Stanovich & Siegel, 1994 cited in Gersten et al., (2001). Content area textbooks are written to inform, show, describe, or explain, thus, exposition is the primary mode of discourse we find in the text. Here are descriptions and examples of expository text.

1. **Description.** Providing information about a topic, concept, event, object, person, idea, and so on (facts, characteristics, traits, features), usually qualifying the listed criteria such as size or importance. This pattern connects ideas through description by listing the importance characteristics or attributes of the topic under consideration. Niles (1965) and Barlett (1978) find the description pattern to be the most common textbook organization. Here is an example:

> They were several points in the fight for freedom of religion. One point was that religion
> and government should be kept apart. Americans did not want any form of a national
> church as was the case in England. Americans made sure that no person would be denied
> his or her religious beliefs.

2. **Sequence.** Putting facts, events, or concepts into a sequence. The author traces the development of the topic or gives the steps in the process. Time reference may be explicit or implicit, but a sequence is evident in the pattern. The following paragraph illustrates the pattern:

> John F Kennedy was the Democratic candidate for president when in October 1960 he first
> suggested there should be a Peace Corps. After he was elected, Kennedy asked his brother-

in-law, Sargent Shriver, to help set up a Peace Corps. In March, 1961, Kennedy gave an order to create an organization. It wasn't until September that Congress approved the Peace Corp and appropriated the money to run it for one year.

3. **Comparison and contrast.** Pointing out likenesses (comparison) and/or differences (contrast) among facts, people, events, concepts, and so on. Study this example:

Castle were built for defense, not comfort. In spite of some books and movies that have made them attractive, castles were cold, dark, gloomy places to live. Rooms were small and not the least bit charming. Except for the great central hall or kitchen, there were no fires to keep the room heated. Not only was there a lack of furniture, but what there was uncomfortable.

4. **Cause and effect.** Showing how facts, events, or concepts (effects) happen or come into being because of other facts, events, or concepts (cause). Examine this paragraph for causes and effects:

The fire was started by sparks from a campfire left by a careless camper. Thousands of acres of important watershed burned before the fire was brought under control. As a result of the fire, trees and the grasslands on the slopes of the valley were gone. Smoking black stumps were all that remained of tall pine trees.

5. **Problem and solution.** Showing the development of a problem and one or more solutions to the problem. Consider the following example:

the skyrocketing price of oil in the 1970s created a serious problem of many Americans. The oil companies responded to the high cost of purchasing oil by searching for new oil supplies. This resulted in new deposits being found in some Third World nations, such as Nigeria. Oil companies also began drilling for oil on the ocean floor, and scientists discovered ways to extract oil from a rock known as oil shale.

Patterns of organization represent the different types of logical connections among the

important and less important ideas in informational materials. The pattern that ties these ideas together is often located at the "top levels" of the content presentation and have many supporting ideas and details below them. The lower-level ideas describe or give more information about the ideas above them. Teachers may help readers differentiate the important ideas from less important ideas in the material during the prereading stage.

THE PREREADING ACTIVITY

The stages of teaching reading had been defined by Ringler and Weber (cited in Dowhower, 1999) into three phases: prereading, active reading, and postreading.

The goals of the prereading stage are to activate (or build) the students' knowledge of the subject, to provide any language preparation that might be needed for coping with the passage and, finally, to motivate the learners to want to read the text. Prereading activities get students ready to read, to approach text material critically, and to seek answers to questions they have raised about the material. During the prereading phase of instruction, a teacher often emphasis the following : (1) motivating reader, (2) building and activating prior knowledge, (3) introducing key vocabulary and concept, and (4) developing metacognition awareness of the task, demands of the assignment and the strategies necessary for effective learning. Dowhower (1999, pp. 673-675) adapted Ringler and Weber's (1984, pp.70-72) three phases of the interactive stage of teaching, as well as a blending of Baumann and Schmitt's (1986) "what, why, how, and when" of comprehension instruction and literature teacher-student discussion techniques. She concluded that the prereading phase includes three activities (Figure 4): (a) eliciting prior knowledge, (b) building background and relating that to prior knowledge, and (c) focusing on the specific strategy to be taught—specifically what the strategy is and why it is being taught. This gives the students a simple description or definition of the strategy (declarative knowledge), how its acquisition will help them become better readers (conceptual knowledge), and a brief model of how the strategy works (procedural knowledge)

Building and activating prior knowledge for the lesson and presenting key vocabulary and concept are essential to prereading preparation in order to facilitate reading comprehension. Concepts create mental images, which may represent anything that can be grouped together by common features or similar criteria; objects, symbols, ideas, processes, or events. In this respect,

Overview of the comprehension strategy framework

I. Prereading

| Assess / elicit prior knowledge | Build background / related to prior knowledge | Focus attention strategy (what & why) |

II. Active reading-cycle repeated for each selection of text

| Students establish purpose for each section | students read/ self-monitor (interaction with text) | Discussion teacher and students work story for understanding of content, strategy, and themes | Final discussion of themes and coordination of strategies |

III. Postreading –Independent follow-up activities

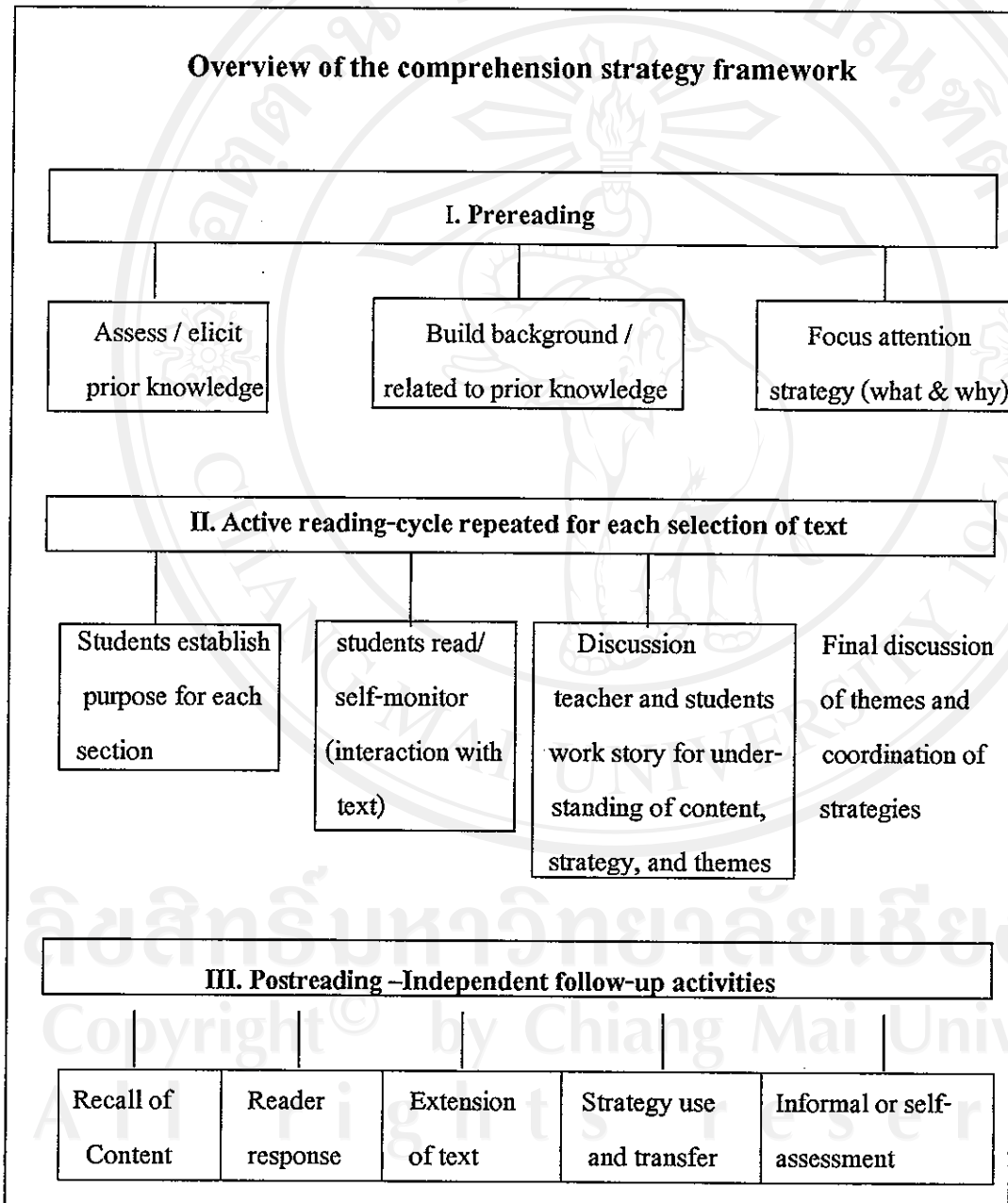| Recall of Content | Reader response | Extension of text | Strategy use and transfer | Informal or self-assessment |

Figure 4 Overview of the comprehension strategy framework

concepts are similar to schemata. A concept hardly ever stands alone; instead, it is bound by a hierarchy of relationships. What teacher do in the way of summoning up the proper frame of reference before the students confront the text, therefore, will influence their success.

Coady (1979 cited in Carrell & Eisterhold, 1983) suggested that background knowledge is able to compensate for certain syntactic deficiencies when reader has some types of background knowledge related to the reading material, since strong semantic input can help compensate when syntactic control is weak. Moreover, Pany et al. (1982) noted that if the content of the passage is familiar to the student, knowing the meaning of every word may not be crucial. General under-standing of the topic and knowledge of the text structure used in the story may help compensate for limited vocabulary knowledge. Furthermore, Bos and Anders (1990) have also stressed how limited or fragmented knowledge to the topics covered in reading, especially expository reading has a detrimental effect on students' comprehension. They argue that teachers need to spend time building students' knowledge of the topic before reading.

Various techniques have been suggested to mobilize existing knowledge, including the use of pictures, movies, field trips, values clarification exercises and even role play. Teachers have to determine a technique according to the nature of the reading material and the inclinations of their classes (Carrell & Eisterhold, 1983). In an academic setting, however, somewhat more formal techniques might be more appropriate. These could entail semantic mapping , pictorial previewing, and self-questioning, among others.

According to *schema theory*, in spite of the fact that it is not a well-defined framework for the mental representation of knowledge (Garnham, 1985; Kintsch, 1988; Pollatsek, 1989 cited in Grabe, 1991) , it has been demonstrated as being important describing how prior knowledge is integrated in memory and used in the higher-level comprehension process (Anderson & Pearson, 1984 cited in Grabe, 1991) . Further, implications of schema theory have proven to be very useful in improving reading instruction. Carrell (1988 b) has argued that a lack of schema activation is one major source of processing difficulty with second language readers.

Schema theory has provided a strong rationale for both prereading activities and comprehension strategy training (Carrell, 1985, 1988a). Other research on schema theory has

argued that 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).

Schema theory may help explain why prereading activities improve reading comprehension. According to the theory, meaning is constructed through interaction between the reader's schemata and the text. Schemata are activated during reading and meaningfully related to the knowledge to be learned from the text (Rumelhart, 1981) . If the reader lacks appropriate schemata or fails to activate them, comprehension may be impaired. Prereading activities are intended to activate appropriate knowledge structures or prior knowledge that the reader lacks.

The following prereading techniques seemed most practical for readers.

SEMANTIC MAPPING

Strategy research suggests that less competent learners are able to improve their skills through training in strategies evidenced by more successful learners. The same is true of reading strategies: Less competent readers are able to improve through training in strategies evidenced by more successful readers.

Research has also indicated that readers' formal schemata, or background knowledge about text structure, affect reading comprehension (Carrell, 1984a, 1984b).

Semantic mapping, a term which 'embraces a variety of strategies design to display graphically information within categories related to a central concept". In other words, categories and associations are indicated visually in a diagram or 'map". In addition to being effective for vocabulary development, semantic mapping has proved to be a good alternative to traditional prereading and postreading activities. Semantic mapping can be used not only to introduce the key vocabulary from the passage to be read, but also to provide the teacher with an assessment of the students' prior knowledge, or schema availability, on the topic.

While the semantic mapping procedure may vary according to individual teacher

objectives, the procedure generally includes a brainstorming session in which students verbalize associations on a topic or key concepts as the teacher writes them on the board. The teacher then facilitates the students' discussion to organize or categorize the associations into the form of a map. This phase of the semantic mapping procedure activates the students' prior knowledge of the topic, and help them to focus on the relevant content schema, thereby better preparing them to understand, assimilate, and evaluate the information in the material to be read. Students develop a map of the story's topic before reading, both to learn the key vocabulary necessary for comprehension and to activate their prior knowledge bases of that topic.

The types of semantic mapping are dependent on the genre or the written discourse of the text.

Shown here are nine generic graphic forms with their corresponding frames. Also given are examples of topics that could be represented by each graphic form. These graphics show at a glance the key part of a whole and their relationships, helping the learner to comprehend text and solve problems.

1.   Spider Map

The spider map is used to describe a central idea: a thing , process ,concept, or proposition with support.
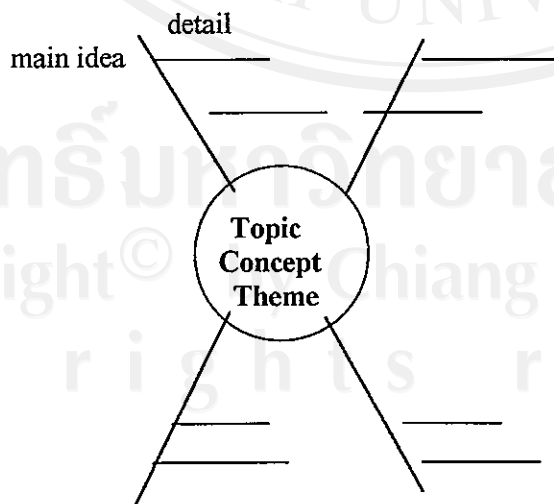

Figure 5: Spider Map

Key frame questions: What is the central idea? What are its attributes? What are its functions?

2.   Series-of –Events Chain

This type of map is used to describe the stages of something, the step in a linear procedure; a sequence of events; or the goals, actions, and outcomes of a historical figure or character in a novel. Key frame questions: What is the object, procedure, or initiating event? What are the stages or steps? How do they lead to one another? What is the final outcome?
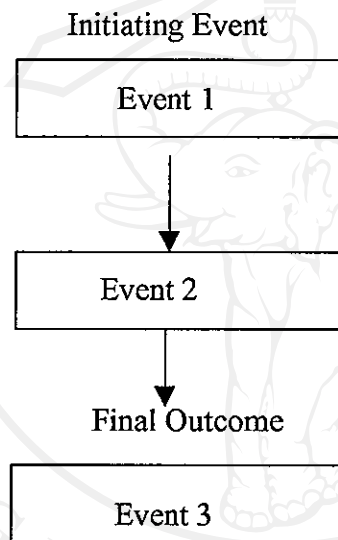
Initiating Event

Event 1

↓

Event 2

↓

Final Outcome

Event 3

Figure 6   Series-of –Events Chain

3.   Continuum/Scale

The continuum is used for time lines showing historical events or ages, degrees of something, shades of meaning, or rating scales. Key frame questions: What is being scaled? What are the end points?

Low   High

Figure 7:   Continuum/ Scale

4.   Compare/Contrast Matrix

The compare/contrast matrix is used to show similarities and differences between two things (people, places, events, Ideas, etc.) Key questions frame: How are They similar? How are they different?

	Name 1	Name 2
Attribute 1		
Attribute2		
Attribute 3		

Figure 8:   Compare/contrast Matrix

5.   Problem/Solution Outline

The problem/solution outline is used to represent a problem, attempted solutions, and results. Key frame questions: What are the problems? Who had the problems? Why was it a problem? What attempts were to made to solve the problems? Did those attempts succeed?
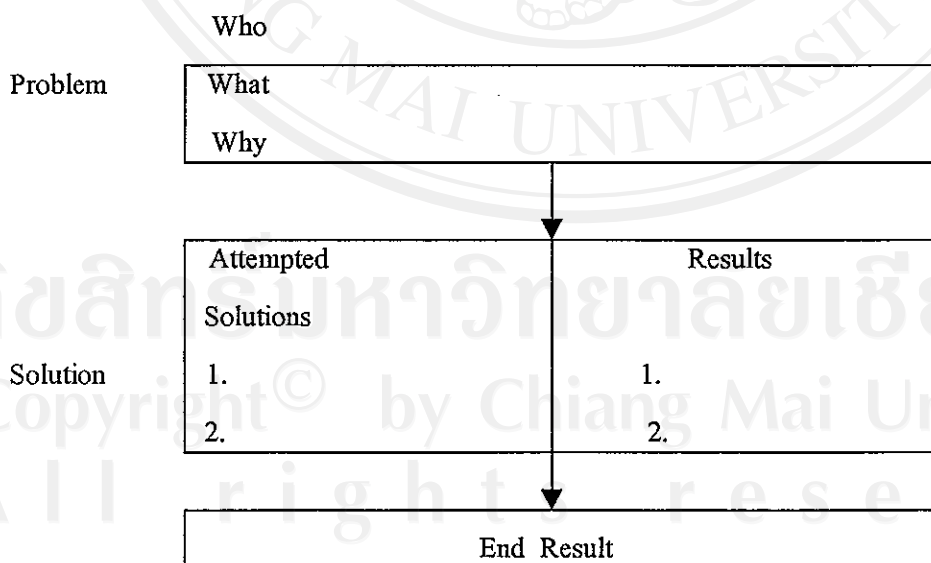
Who

Problem	What
	Why

Solution	Attempted Solutions	Results
	1.	1.
	2.	2.

End Result

Figure 9:   Problem/solution Outline

6.   Network Tree

This kind of map is used to show causal information, a hierarchy, or branching procedures. Key frame questions: What is the superordinate category? What are the subordinate categories? How are they related? How many levels are there?
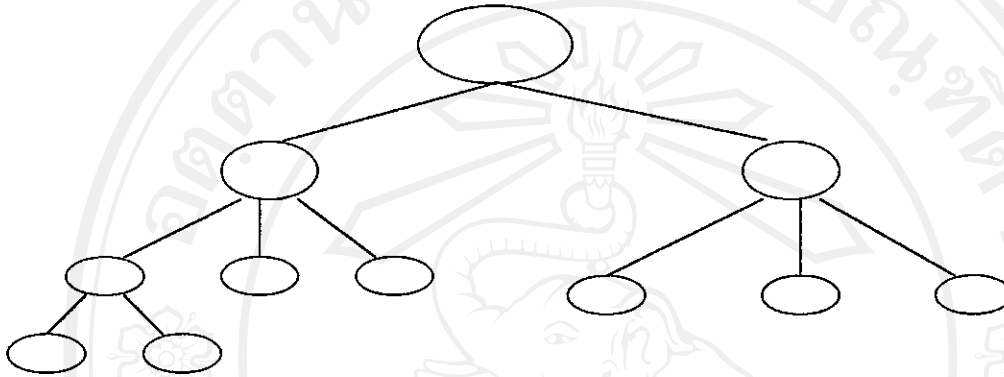

Figure 10: Network Tree

7. Human Interaction Outline

This outline is used to show the nature of an interaction between persons or groups . Key frame questions: Who are the persons or groups? Did they conflict or cooperate? What was the outcome for each person or group?

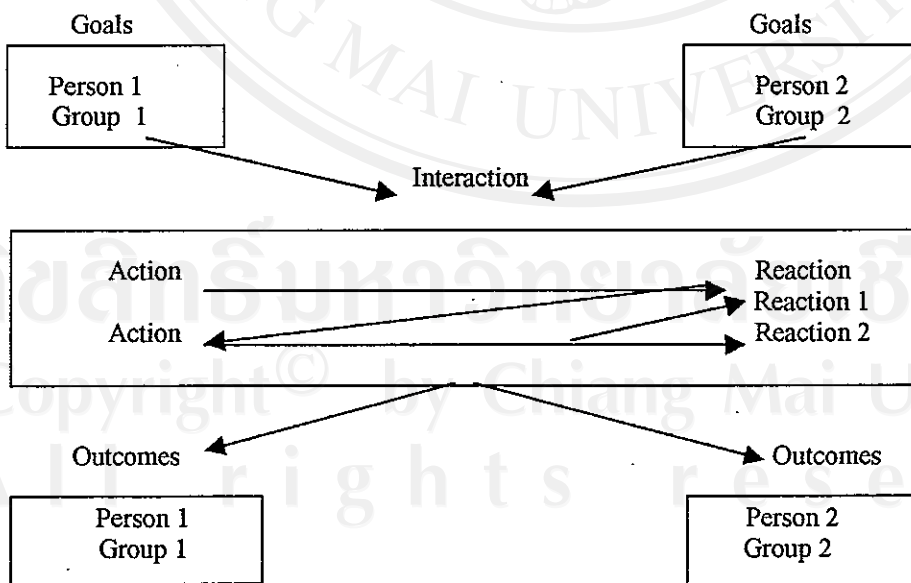Figure 11: Human Interaction Outline

8. Fishbone Map

The fishbone map is used to show the causal interaction of a complex event.
Key frame questions: What are the factors that cause X? How do they relate? Are the factors that
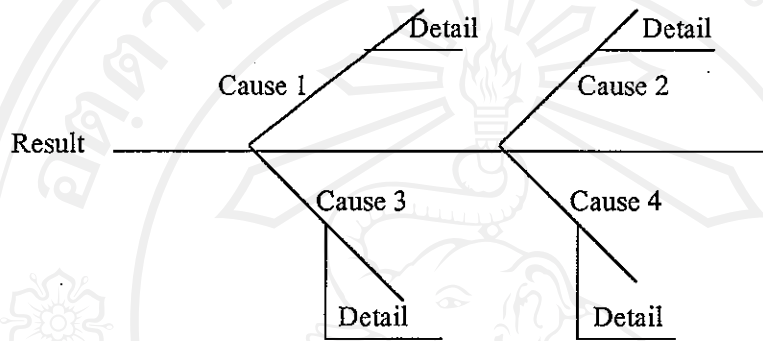cause X the same as those that cause X to persist?

Figure 12: Fishbone Map

9. Cycle

The cycle is used to show how a series of events interact to produce a set of results again
and again. Key frame question: What are the critical events in the cycle? How are they related? In
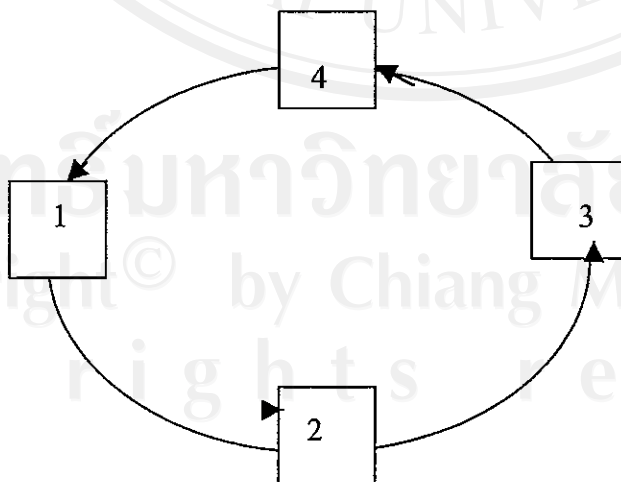what ways are they self-reinforcing?

Figure 13: Cycle

On the other hand, Sinatra et al., (1986 cited in Tungpong, 1993) has designated the written discourse into 4 types as follow:

1. Narrative Sequential Organization or Sequential Episodic Map

This map is used to narrate the events chronologically , the arrow shows the order and combine the supporting details in each frame
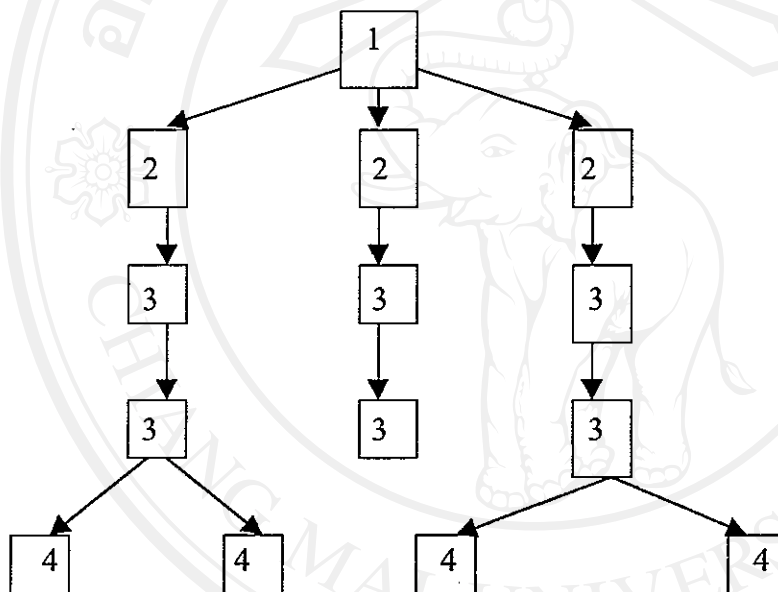
1. Topic or Key concept

2. Events

3. Supporting Details

4 Supporting Details

Figure 14: Narrative Sequential Organization or Sequential Episodic Map

2. Thematic or Descriptive Map

Thematic map is used to describe subjects, the key concept is in the middle, connected by the lines to the other topics and details.
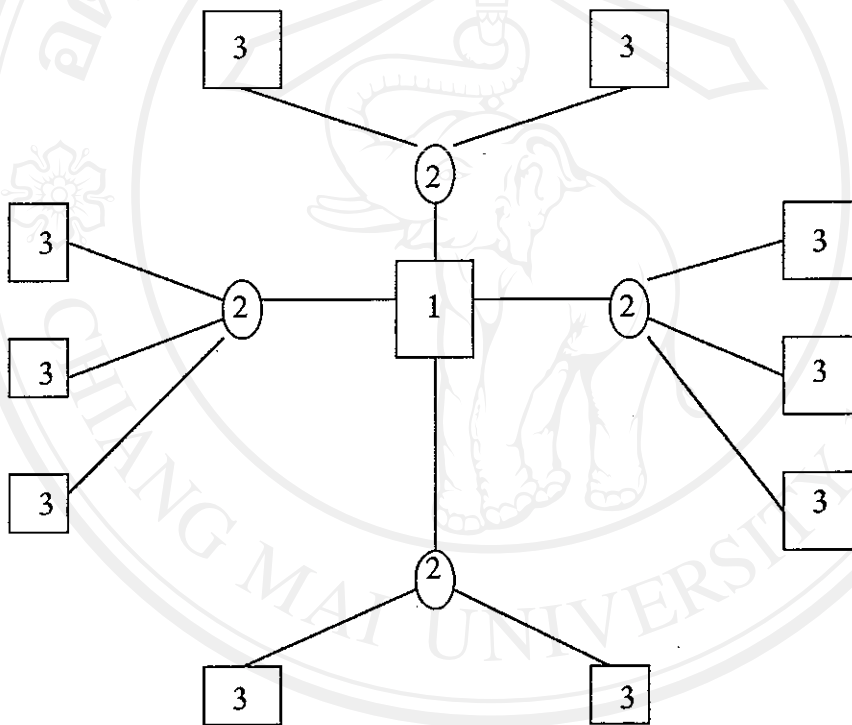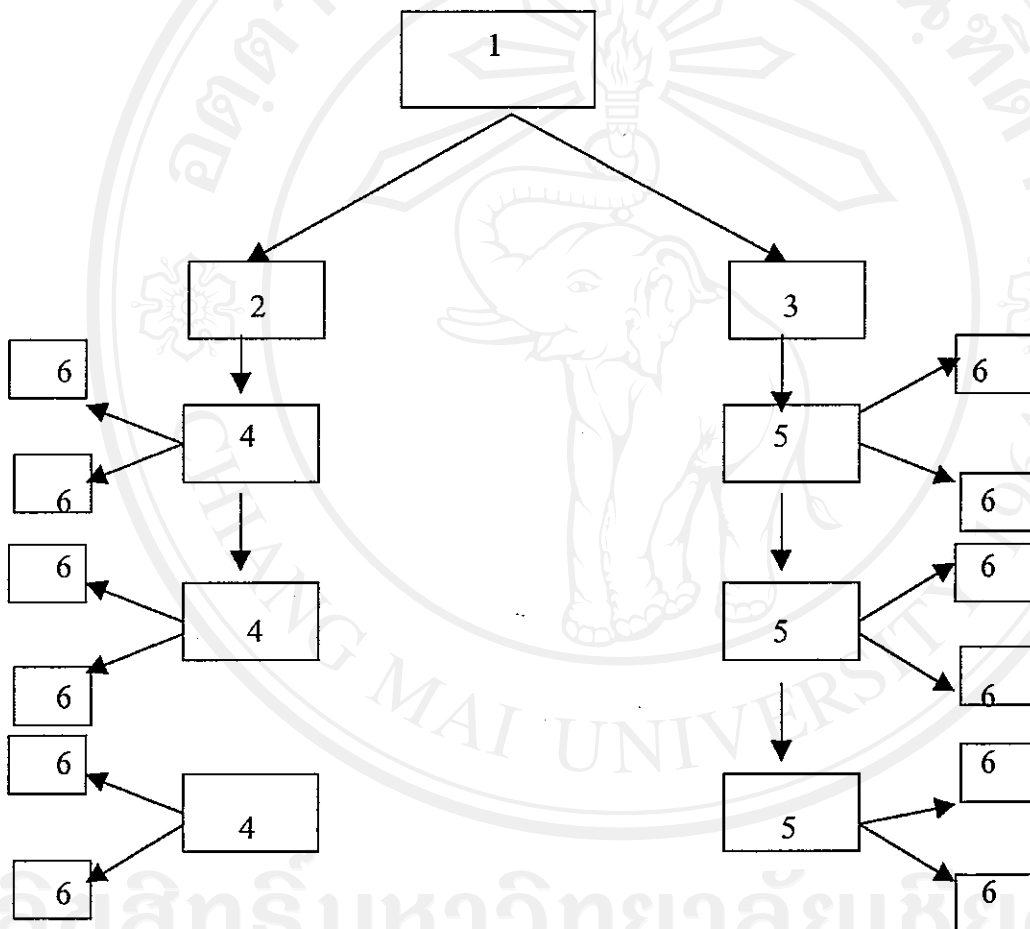

1. Key concept
2. Important topic
3. Details

Figure 15: Thematic or Descriptive Map

3. Comparative and Contrastive Map

The top frame is the topic which is to be compared, the frames on the left side show the similarities, on the right side show the differences and the details of com-parison and contrast are to each side.
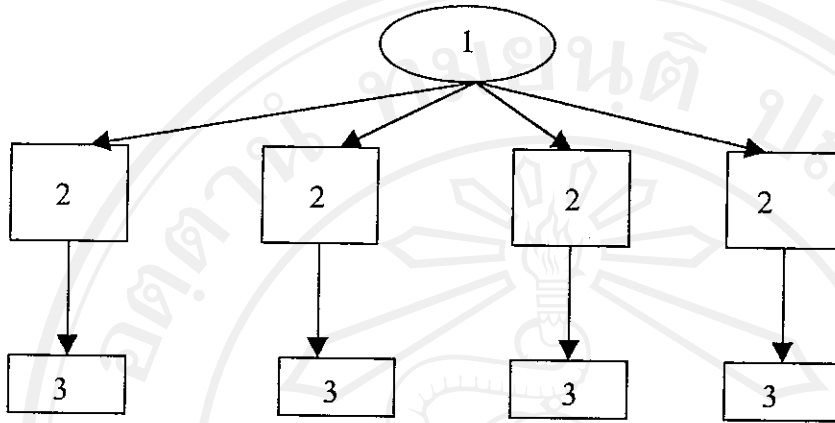
```
                          ┌─────┐
                          │  1  │
                          └──┬──┘
              ┌──────────────┴──────────────┐
          ┌───┴──┐                       ┌───┴──┐
          │  2   │                       │  3   │
          └───┬──┘                       └───┬──┘
  ┌───┐        │                             │        ┌───┐
  │ 6 │     ┌──┴──┐                       ┌──┴──┐     │ 6 │
  └───┘     │  4  │                       │  5  │     └───┘
  ┌───┐     └──┬──┘                       └──┬──┘     ┌───┐
  │ 6 │        │                             │        │ 6 │
  └───┘        │                             │        └───┘
  ┌───┐     ┌──┴──┐                       ┌──┴──┐     ┌───┐
  │ 6 │     │  4  │                       │  5  │     │ 6 │
  └───┘     └──┬──┘                       └──┬──┘     └───┘
  ┌───┐        │                             │        ┌───┐
  │ 6 │        │                             │        │ 6 │
  └───┘        │                             │        └───┘
  ┌───┐     ┌──┴──┐                       ┌──┴──┐     ┌───┐
  │ 6 │     │  4  │                       │  5  │     │ 6 │
  └───┘     └─────┘                       └─────┘     └───┘
  ┌───┐                                               ┌───┐
  │ 6 │                                               │ 6 │
  └───┘                                               └───┘
```

1 Topic or Concept   4. Similarity issues

2. Similarities   5. Different issues

3. Differences   6. Details

Figure 16: Comparative and Contrastive Map

4. Classification Map

This map is suitable for expository text.

1. Topic
2. Example, Type , or Qualification
3. Supporting details

Figure 17:   Classification Map

Furthermore, Schmidt (1986 cited in Tungpong, 1993) classified the format of semantic mapping which depends on text structure or paragraph into five types as follow:

1. Spider Map

This map is appropriate to show the relationship within the text that are explicitly tells the main idea and supporting ideas as in the example:

"The Jackson family has a favourite vacation resort. There is a lake nearby for water skiing and boating. They can also go hiking and horse riding. The tennis court and swimming pool are close to their cabin."
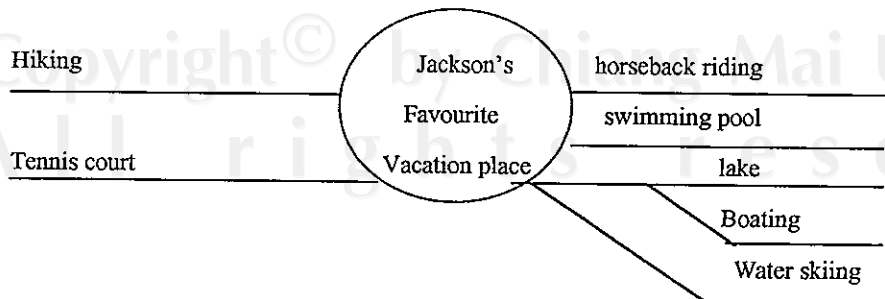

Figure 18: Spider Map

2. Descending Ladder or Time Ladder Map

This map is used to show the relationship of the events chronologically ; the processes ; steps; or to narrate events.

" It was already dark by the time Beth and Mary left the library. They immediately started walking as quickly as possible to the bus stop. Unfortunately, the bus had already left when they got there. They had to telephone Mary's mother for a ride home."

```
┌─────────────────────────────────┐
│          Dark came              │
└─────────────────────────────────┘
        │
┌─────────────────────────────────┐
│     Mary and Beth left library  │
└─────────────────────────────────┘
        │
┌─────────────────────────────────┐
│          Bus   left             │
└─────────────────────────────────┘
        │
┌─────────────────────────────────┐
│      They arrived at bus stop   │
└─────────────────────────────────┘
        │
┌─────────────────────────────────┐
│       Called Mary's mother      │
└─────────────────────────────────┘
```
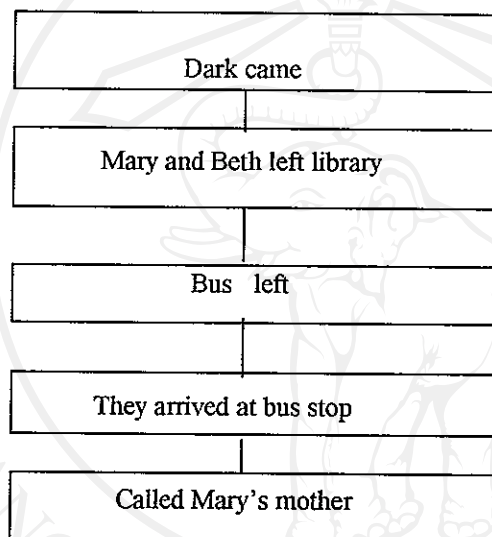
Figure 19:   Descending Ladder or Time Ladder Map

3. Cause / Effect Map

Cause and Effect map is use to illustrate the causation and the consequence as in the example:

" Hundreds of years ago a fierce group of people called the Huns attacked China. The Huns wanted to conquer China. The Chinese built a huge wall 1,500 miles long to keep the Huns out of China. The wall is still standing today."

```
┌──────────┐         ┌──────────────┐
│  Huns    │───────▶ │ Chinese built│
│ attacked │         │ Great Wall   │
│  China   │         │ 1,500        │
│          │         │ miles long   │
└──────────┘         └──────────────┘
```
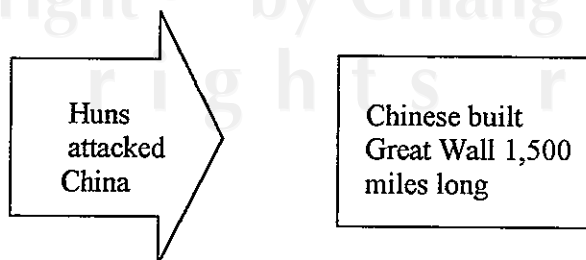
Figure 20:   Cause / Effect Map

4. Comparison / contrast, or Contrast Overlay Map

This map is illustrate the relationship of the events which are to compare the similarity and the difference.

" The computer and human mind are very much alike. Both can store and recall information. However, the computer must be told what to do with the information. The human mind can invent new and different ways to use information."
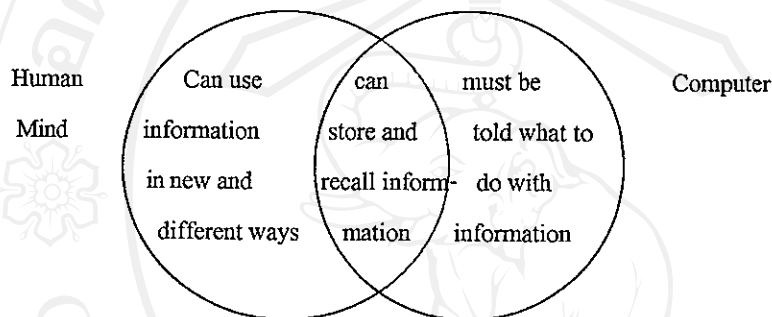

Figure 21: Comparison / contrast, or Contrast Overlay Map

5. Combined Map

This map is used with complex text of different types of text discourse. There are different shapes organized in the same map.

There were many researchers had studied the effects of semantic mapping technique such as Carrell L. Patricia, Becky G. Pharis and Joseph C. Liberto (1989) studied the effects of Metacognitive Strategy Training for Reading in ESL. The strategy trainings that they studied were Semantic Mapping and the Experience-Text-Relationship method. Strategy training was provided to experimental groups. Control groups received no strategy training, but participated in pre-and posttesting. The results show that metacognitive strategy training is effective in enhancing second language learning. In Thailand, in 1993, Witoon Tungpong conducted research titled "Effects of Semantic Mapping Activities on Reading Comprehension of Mathayom Suksa 5 Students". There were 60 subjects who were divided into two groups: experimental group and

control group. The experimental group studied with mapping, while the control group studied with the teacher's regular lesson plan. The finding was that the English reading comprehension achievement of the experimental group was higher than did of the control group.

Pictorial previewing

Representational pictures are thought to have a facilitating effect on reading comprehension because they provide an additional sensory code for input of text information (Levie, 1987; Paivio, 1971 cited in Mastropieri & Scruggs,1997). It has also been suggested that illustrations may yield affective-motivational effects during reading (Peeck,1987 cited in Mastropieri & Scruggs,1997).

A large body of research supports the effectiveness of presenting pictures to aid students' reading comprehension. Hudson(1982 cited in Taglieber, 1988) found that the technique of displaying, discussing, and writing predictions about pictures was significantly more effective for reading comprehension than presenting a vocabulary/ written predictions activities before students read.

In addition, Taglieber (1988) investigated the effects of three prereading activities (pictorial context, vocabulary pre-teaching, and pre-questioning)and a control condition on the reading comprehension of Brazilian EFL students. The study indicated that prereading activities facilitate students' comprehension. Of the three prereading activities, vocabulary preteaching, although superior to the control condition, was less effective than pre-questioning and pictorial context. It could be that although knowledge of these words' meanings was essential for adequate comprehension to occur, heightened background knowledge from the other two prereading activities made students more able to use context to arrive at a satisfactory meaning for the passages even when all the words were not known. The study supports Hudson's (1982) contention that students may use their background knowledge about a reading selection to override problems they are having with the language. The use of such a strategy was thought to be inappropriate for students with deficient second language skills.

David and Kang (1998) had conducted a study to test whether the imagery induced by news language can be as potent as visual images and can have significant effects on memory. In this study, both news pictures and high-imagery news language produced a significant gain in news recall. Jeffrey Griffin and Robert Stevenson (cited in David & Kang, 1998) have demonstrated how various graphic information tools such as locator maps, explanatory graphics and graphs facilitate learning. The thrust of their findings is that redundant information presented graphically and through body copy improves learning. In one study, Gerlio and Jausovec, (1999) investigated the cognitive process involved in learning information presented in multimedia and text format using electroencephalographic (EEG) measures. Subjects learned materials presented with text (TEXT); text, sound, and picture (PICTURE); and text, sound, and video (VIDEO). The results showed a clear difference between the multimedia presentations and the text presentations. The VIDEO and PICTURE presentations increased the activity of the occipital and temporal lobes; on the other hand, the TEXT presentations increased the activity of the frontal lobes. In other word, it seemed reasonable to believe that multimedia presentation trigger visualization strategies such as mental imagery, which is crucial to many kinds of problem solving, creativity and discovery.

SELF- QUESTIONING

Generally questions are used as a tool to assess students' comprehension after studying, but gradually the role of questions has changed. Ortiz (1977, pp. 109-114 cited in Chaiamarit, 1996) explained the benefits of questions in teaching reading stating that besides drawing attention to the material readers are going to encounter, they help elaborate the text to be comprehensible.

In the study of Nist & Mealey (1991, p. 67), they argued that the purposes of questioning are to : (1) prompting the retrieval of background knowledge, (2) motivate and focus attention to check literal, inferential and applied comprehension of information and (3) to predict test items. They also claimed that questioning is vital in teaching reading as well as developing comprehension.

Questioning strategies are important in helping readers construct meaning (Pearson, 1985 cited in Newman, 2002). Good readers constantly paraphrase, predict, retell, and summarize as they read a text. They also question themselves and others as they read in an effort to increase their comprehension. Children with learning disabilities, nonreaders, and readers slow to learn can be successful using self-questioning comprehension strategies (Deshler, Shumaker, Alley, Clark, & Warner, 1981; Idol, 1987; Schunk & Rice, 1989 cited in Newman, 2002).

There are many researchers who have studied the effect of questioning, for example: Wong and Jones (1982 cited in Gersten et al.,2001) examined the effects of a self-questioning procedure. After eight-and ninth- grade students with learning disabilities were taught the main idea, they were assigned randomly to either a self-questioning group or a control group. The self-questioning group followed a five-step procedure: Identify why this passage is being studied, find main ideas and underline them, think of a question for each main idea, answer these questions, and review the questions and answers to see how they provide more information. Training was delivered in two 2-hour sessions. On a series of passages administered over four days, trained students answered more questions correctly but did not do better on retelling. This seminal study demonstrated the promise of self-questioning techniques. It is unfortunate that little information was provided on how students achieved mastery of the main idea concept—a potentially challenging task, which reportedly was accomplished in a single one-hour session.

Then Wong (1985 cited in Glaubman et al, 1997), in her comprehensive review of the effect of intervention, studied the development of questioning skills among students. She organized the study around three theories: (a) active processing theory (APT), which assumes that asking many questions about the text raises the quality of the questions and, consequently, promotes comprehension (King, 1994), (b) schema theory, which assumes that the interaction of prior knowledge and new material enhances better questioning and leads to the restructuring of the schema and, consequently, better comprehension, and (c) metacognitive theory (MCT), according to which questioning is assumed to involve awareness of the demands of the task and of the self-while dealing with the task -and of the strategies involved. This awareness results in a more successful self-monitoring of those strategies. Review of self-questioning studies show that

self-questioning based on any of these theories promotes cognitive development and improves

academic achievement (Davey & McBride, 1986; Graesser & Pearson, 1994; King, 1992, 1994;

Wong, 1985 cited in Glaubman et al, 1997)

And then, Taglieber (1988) investigated the effect of three prereading activities (pictorial

context, vocabulary preteaching, and prequestioning) and a control condition on the reading

comprehension of 40 undergraduate Brazilian EFL students. The results revealed that all three

prereading activities produced significant-ly higher multiple-choice scores than the control

condition. Prequestioning consisted of giving subjects a one-sentence oral summary of the

reading passage and asking them to formulate some questions that they thought the passage

might answer.

In a similar investigation, Billingsley and Wildman (1988, cited in Mastropieri &

Scruggs, 1997) compared the effects of two variations of prereading activities with secondary

students with learning disabilities. In one condition, students were taught to think about questions

they wanted to ask that were directly relevant to the forth-coming reading materials. In another

condition, students were provided with a visual display organizing the main ideas in the

forthcoming content and then were asked to think of questions relevant to the material. Students

in the control condition were asked to answer irrelevant questions before reading the materials.

Findings indicated that students who were shown the visual overview before reading and asked to

generate relevant questions outperformed students in the other two conditions on tests of error

detection and passage recognition. Related investigations have used advance organizers to

activate prior knowledge and have also reported positive findings (e.g., Darch & Gersten, 1986;

Lenz, Alley, & Schumaker, 1987).

Later, Chia (2001) introduced this technique. She suggests that questions may be

generated by the teacher or by the students and should be done before the reading, rather than

after the reading. Teacher may form effective prereading questions by reversing the textbook

sequence by forming prereading questions from the comprehension questions that appear in the

textbook or in the teacher's manual, after selecting the reading activity.

The strategies or techniques about self-questioning are as follows:

1.   **K-W-L** (What I Know, What I Want to Learn, What I Learned) is a widely used self questioning technique to help tap prior knowledge (K), set purposes for reading by determining what the students want to know (W), and identify new concepts learned (L). First researched by Ogle (1986), the technique is often used in the content area subjects. In its more developed form, K-W-L is called K-W-L Plus with a writing component consisting of mapping and summarization (Carr & Ogle, 1987).

K-W-L Plus (Carr & Ogle, 1987 cited in Headley & Dunston, 2000) is a teaching strategy designed to engage readers in connecting prior knowledge with textual information, as well as organizing, integrating, and summarizing knowledge acquired from reading. K-W-L Plus is particularly useful with information texts because students are actively engaged in every stage of the reading process.

Steps in the K-W-L Strategy are as the following:

1. Introduce the KWL strategy in conjunction with a new topic or text selection. Before assigning a text, explain the strategy. Donna Ogle (1992), the originator of KWL, suggests that dialogue begin with the teacher saying:

> It is important to first find out what we think we know about this topic. Then we want
> to anticipate how an author is likely to present and organize the information. From this
> assignment we can generate good questions to focus on reading and study. Our level
> of knowledge will determine to some extent how we will study. Then as we read we
> will make notes of questions that get answered and other new and important information
> we learn. During this process some new questions will probably occur to us; these
> we should also note so we can get clarification later. (p. 271)

In the process of explaining KWL, be sure that student understand *what* their role involves and it is important for learners to examine what they know and to ask questions about topics that they will be reading and studying.

2.   *Identify what students think they know about the topic.* Engage the class in

brainstorming, writing their ideas on the board. Use the format of the KWL strategy sheet as you record students' ideas on the board. It is important to record everything that the students *think* they know about the topic, including their misconceptions. The key in this step is to get the class actively involved in making associations with the topic, not to evaluate the rightness or wrong-ness of the associations. Students will sometimes challenge one another's knowledge base. The teacher's role is to help learners recognize that differences exist in what they think they know. These differences can be used to help students frame questions.

3.Generate the list of students' questions. Ask, " What do you want to know more about? What are you most interested in learning about?" As you write their questions on the board, recognize that you are again modeling for students what their role as learners should be: to ask questions about material to be studied.

When you have completed modeling the brainstorming and question generation phase of KWL, have the students use their own strategy sheets to make decisions about what they personally think they know and what they want to know more about.

4 .Anticipate the organization and structure of ideas that the author is likely to use in the text selection. As part of preparation for reading, have students next use their knowledge and their questions to make predictions about the organization of the text. What major categories of information is the author likely to use to organize his or her ideas? The teacher might ask, "How do you think the author of a text or article on-- is likely to organize the information?" Have students focus on the ideas they have brain-stormed and the questions they have raised to predict possible categories of information. As students make their predictions, record these on the board in the area suggested by the KWL strategy sheet. Then have students make individual choices on their own strategy sheets.

5. *Read the text selection to answer the questions.* As they engage in interaction with the text, the students write answers to their questions and make notes for new ideas and information in the L column of their strategy sheets. Again, the teacher's modeling is crucial to the success of this phase of KWL. Students may need a demonstration or two to understand how to record information in the L column.

K – What I know	W- What I Want to Know	L- What I Learned and Still Need to Learn

Categories of Information I expect to Use
A.   E.
B.   F.
C.   G.
D.   H.

Figure 22: A KWL Strategy Sheet

Source: From Donna M. Ogle, "K-W-L: A Teaching Model that Develops Active Reading in Expository Text" (February 1986). The Reading Teacher, 39(6), 564-570.

Debrief students after they have read the text and have completed writing responses in the L column. First, invite them to share answers, recording these on the board. Then ask, "What new ideas did you come across that you didn't think you would find in the text?" Record and discuss the responses.

6. *Engage students in follow-up activities to clarify and extend learning.* Use KWL as a springboard into postreading activities to internalize student learning. Activities may include the construction of graphic organizers to clarify and retain ideas encountered during reading or the development of written summaries.

2. SQ3R. This technique provides students with a systemic approach for studying text. There are numerous study systems in existence, all of which work well with information text because students make use of internal and external text structures to search for information and construct meaning. Usually, a study system involves a complex set of strategies and procedures. The mother of all study system is SQ3R (the acronym stands for *survey, question, read, recite, review*). Frances Robinson (1946) originated SQ3R more than a half-century ago to help students approach text study without assistance. Numerous variations and offshoots of SQ3R have since been developed, all with the same purpose in mind: to help students study texts on their own. The steps in SQ3R are as follows:

1. *Survey.* Students preview the material to anticipate content, make plans for reading, and develop a mental framework for ideas to be encountered in the text.

2. *Question.* Students raise questions with the expectation that they will find answers in the text.

3. *Read.* Students search for ideas and information that will answer their questions.

4. *Recite.* Students deliberately attempt to answer their questions by rehearsing aloud what they have learned and/or writing responses to the questions raised.

5. *Review.* Students review and reflect on the material by organizing and elaborating on ideas encountered in the text and rereading portions to verify or expand on responses to their questions.

3. Self-Questioning Strategy: ASK IT. A self-questioning strategy from the university of Kansas, ASK IT (Schumaker, Deshler, Nolan, & Alley, 1994 cited in Lebzelter & Nowacek, 1999), was designed to help students improve their comprehension of text by cluing them to interact with reading material, maintain attention, become more motivated, and verbalize what they learn (Schumaker et al., 1994). This strategy consists of five steps.

First, students Attend to clues as they read. They learn that clues can be titles, pictures, or words-especially words in the first sentence of a passage. Next, students Say a question about the clue and mark a symbol for the question. Seven type of symbols are provided for the questions:

who (a smiley face), what (a box), when (a clock), where (an arrow), why (the letter Y), which (a symbol representing the intersection of two roads, and how (the letter H). K stands for "Keep a prediction in mind", based on the question students generate, and I stands for "Identify the answers". In the final step, students Talk about the answer to their question. They compare the answer to their prediction and decide if their prediction was accurate. They also put the answer to the question in their own words. For example, a student might predict that a character has brown eyes and brown hair and wears a purple raincoat. After reading the passage, this student might say that he correctly predicted the eye colour, but incorrectly predicted the hair colour and type of clothing (Schumaker et al., 1994).

Reutzel (1985 cited in Chia, 2001) has proposed the Reconciled Reading Lesson to help teachers form effective prereading questions. Teachers who adopt the Reconciled Reading Lesson reverse the textbook sequence by forming prereading questions from the comprehension questions that appear in the textbook after the reading selection or in the teacher's manual.

Moreover, several conclusions can be drawn from the studies (Mastropieri & Scruggs, 1997) that teacher questioning and self-questioning training in which learners actively question the purposes and structure of text, activate prior knowledge, identify and attend to the important points, and self-question their comprehension as they read—are likely to improve reading comprehension, provided that students have preskills and that the text is readable.

Call (2000) has proposed questions into three levels (Figure 23): Level 1 questions are factual with the answer right there in the text. Questions generated at Level 1 begin with "who, where, what, and when." Level 2 is the inferential and interpretive level, with answers found both in the text and within the readers, who interpret the text by putting into their own words, questions beginning with "why and how" and then compare and summarize. Level 3 is the evaluative and critical level, and the answers are found within the reader who weighs what is being read against his or her own experience. Questions at this level may begin with "agree or disagree," asking the reader to explain "why or why not," or to critique and ask "what if

Level of Questioning

Level 1 Factual	Level 2 Inferential & Interpretive	Level 3 Critical & Evaluative

Text [Exact words]   Reader + Text [Reader interprets text]   Reader [Reader evaluates text based on his or her prior experience]

Who	Why	Agree / Disagree & Why
What	How	Critique
Where	Summarize	What if
When	Compare	

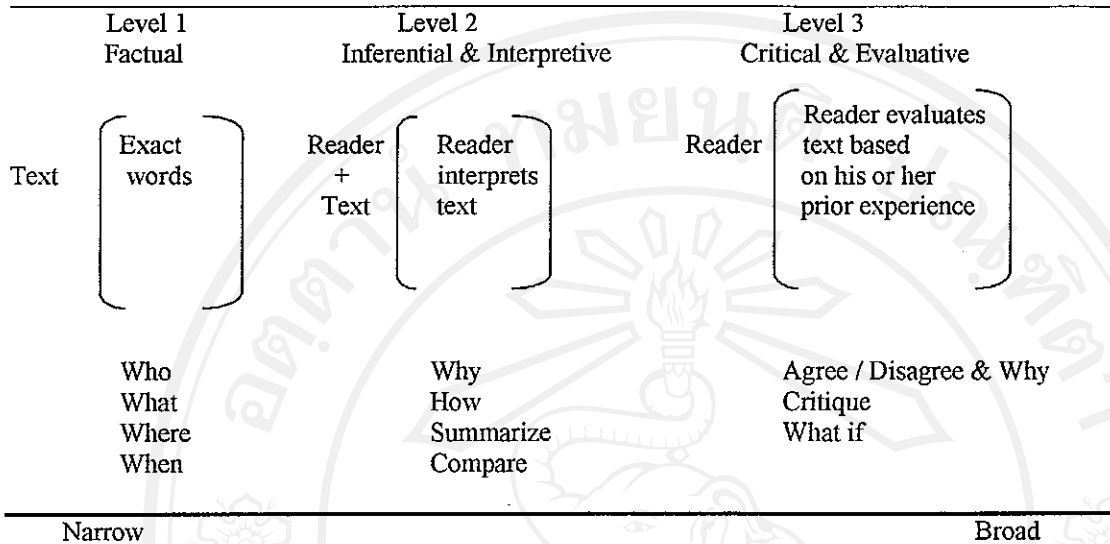Narrow   Broad

Figure 23:   Level of Questioning

From the earlier literatures, can conclude that background knowledge enhances reading comprehension. Moreover, three types of background knowledge activation: semantic mapping, pictorial previewing, and self-questioning are effective in activating the readers' background knowledge. Semantic mapping not only facilitates reading tasks but also develop readers' imagination because readers clearly see how the whole details of the topic are related. This helps readers to make predictions and create imagination. As for pictorial previewing, the readers can make use of the pictures effectively. The readers can see the concreteness of the text content through the illustrations. But the self-questioning are different, it does not have any visual aids. The readers have to construct questions of their own which promote thinking skill and critical thinking. The readers not only self-question about the reading text but predict the content of the text prior to reading. In conclusion, the three prereading activities are advantages in a different way.

The major implication to be drawn from the research mentioned above is that students' prior knowledge need to be activated in order to elicit prior knowledge or provide schema availability on the topic before they begin to read. In activating students' background knowledge, three types of background knowledge activation are recommended.