Chapter II

Review of Literature

This study, conducted at various affiliated colleges of Anna University, aims at investigating the effects of the reciprocal teaching approach on the English reading comprehension of first year engineering students. In order to provide background information on reciprocal teaching, this chapter discusses the literature related to this research, and is comprised of the following sections: a summary of the theories and models of reading, a description of the cognitive and metacognitive strategies, an explanation of the role of metacognition in reading and its components, a detailing of reciprocal teaching and its theoretical framework, and an overview of the studies related to reciprocal teaching.

2.1 Theories of Reading

Reading is a skill that a reader uses to search for world knowledge, understanding and entertainment. Moreover, reading is a matter of an interaction that involves the reader, the text, and the actual interaction between the reader and text (Aebersold & Field, 1997; Rumelhart, 1977).

While reading, readers use their past experiences, called background knowledge. In turn, from doing this and from the text they read, they construct new experiences and acquire new knowledge. Readers have different schema and ways to apply their experiences to what they read, and these differences in experiences make some readers comprehend a text quicker and better than others.
The text itself is another factor in the reading process. There are various types of texts, and each one has a different style of writing, organization, pattern, syntax and grammar, vocabulary, cohesion, and purpose. It is the readers’ responsibility to know the differences between different texts in order to understand what the writer tries to convey to them. The text and the reader are two factors that are essential to the reading process. The reader reads the text to comprehend it. Therefore, the interaction between the text and the reader is, by itself, another vital factor in this process. Different readers may get different meanings from the same text. These differences are due to the differences in the readers’ background knowledge, reading ability, aptitude, personal interest, classroom environment, and so on.

To sum up, it could be said that ESL/EFL reading is an interactive process that involves constructing the meaning of a text. Readers interact with a text to derive the meaning from it, relying on different reading models. Therefore, knowing these models will help understand how readers work out the meaning from a text.

### 2.2 Models of the Reading Process

Reading is a cognitive process that consists of a reader, a text, and the interaction between the reader and the text. There exist three main models for the description of the second-language reading process: the bottom-up model, the top-down model, and the interactive model.

#### 2.2.1 The Bottom-up Model

This reading model focuses on the smaller units of a text such as its letters, words, phrases and sentences. Then, a syntactic and semantic processing occurs
during which reading reaches the final meaning. In this model, the reader reads all of the words in a phrase, or a sentence before being able to understand.

According to Carrell (1989), the bottom-up reading process begins with decoding the smallest linguistic units, especially phonemes, graphemes, and words, and ultimately constructs meaning from the smallest to the largest units. While doing this, the readers apply their background knowledge to the information they find in the texts. This bottom-up method is also called data-driven and text-based reading.

However, the disadvantage of this model is that the readers will only be successful in reading if they accurately decode the linguistic units and recognize the relationship between words. However, it is impossible for the readers to store in their memory the meaning of every word in a passage. Moreover, it is difficult to relate one word to the other words.

From the above information, it could be said that there are some arguments against the bottom-up model. In the reading process, the readers understand that what they have read is the result of their own constructions, not the result of the transmission of graphic symbols to their understanding, and that without their background knowledge, they cannot comprehend the texts.

2.2.2 The Top–down Model

The top-down model was first introduced by Goodman (1967). He proposed the idea of reading as a “psycholinguistic guessing game” in which the reader uses his background (prior) knowledge or textual schemata to connect with
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a text and to relate these to new or unexpected information found in the text in order to understand it. This model focuses on linguistic guesswork rather than graphic textual information. Moreover, the readers do not need to read every word of a text, but rather, they concentrate on predicting the next group of words. They concern themselves with guessing the meaning of the words or phrases.

Nuttall (1996) stated that readers might start predicting from the title of the reading text, something that allows them to limit the scope of their reading. Additionally, while reading, they may hypothesize the message the writer wants to convey and modify their hypotheses according to what they read in the text. Comprehension begins with higher levels of processing (making hypotheses), and proceeds to the use of the lower levels.

2.2.3 The Interactive model

This model is built on the interaction of the bottom-up and top-down models. Nunan (1990), Rumelhart (1977), and Grabe (1991) argue that efficient and effective reading requires both top-down and bottom-up decoding. L2 readers, for example, may use top-down reading to compensate for deficiencies in bottom-up reading. To achieve meaning, they use their schemata to compensate for the lack of bottom-up knowledge (Grabe, 1991).

Stanovich (1980) argued that the interactive model is a process based on information from several sources such as orthographic, lexical, syntactic, semantic knowledge, and schemata. While reading, decoding processes can support one another in a compensatory way. If, when reading word by word, readers with good bottom-up skills do not comprehend the texts, they need to use their prior
knowledge (schemata) to assist them. Alternatively, readers who rely on the top-down model use textual clues and guess wildly at the meaning, but they need to compensate for deficits such as weaknesses in word recognition and lack of effective bottom-up processing.

These three models of the reading process help explain how readers construct meaning and how they compensate for their comprehension deficits. Successful readers usually alter their model based on the need of a particular text and situation. The interactive model, which is the combination of the bottom-up and top-down processes, leads to the most efficient processing of texts. Knowing that the interactive model can help L2 readers in achieving successful reading, teachers should find reading instructions based on this model to promote L2 readers’ abilities.

The reciprocal teaching approach is a type of reading instruction that is based on the interactive model. It covers four main reading strategies. In order to understand more about reading strategy instruction, the aspects of language learning strategies and reading strategies will be discussed.

2.3 Language Learning Strategies

Learning strategies are processes used by learners to help them facilitate acquisition, storage, retrieval, and use of information (Oxford, 1990). They help learners make the learning process easier and more successful. Learning strategies for second language learners are of two vital kinds, the cognitive and the metacognitive strategies (Oxford, 1990). Cognitive strategies are mental processes used in learning and problem-solving, and metacognitive strategies involve the
process by which learners are aware of cognitive and regulatory processes such as planning, setting goals, monitoring or control learning, self-management, and self-evaluation of learning (O’Malley & Chamot, 1987; Wenden, 1999).

In the second language reading class, readers try to use strategies that help them comprehend the texts or facilitate their learning when they face reading problems. To comprehend a reading text, cognitive strategies, metacognitive strategies, and reading for comprehension must be performed (Anderson, 2003).

2.3.1 Cognitive and Metacognitive Strategies and Reading Comprehension

Reading comprehension is a constructive process by which readers use both cognitive and metacognitive strategies to build their understanding of a text (Dole et al., 1991). Cognitive strategies directly involve the target language and include different methods such as summarizing and deductive reasoning, predicting, using organization, taking notes on the main points, using prior knowledge, and guessing meaning from the context (Oxford, 1990). Metacognitive strategies are actions that allow readers to control their own reading; in other words, they are strategies based on “thinking about thinking.” That is, the readers know when and how to use these strategies and adapt them to suit their reading purposes. Metacognitive strategies consist of planning, evaluating, and regulating one’s own skills. These include such skills as determining the reading task, evaluating the predictions, focusing on important information, relating important information, ignoring unimportant new words, checking the effectiveness of guessing meaning, re-reading relevant information when failure in understanding, and checking the effectiveness of achieving the whole reading task (Oxford, 1990).
Many researchers on reading strategy instruction (Duffy, 2002; Palincsar & Brown, 1980; Salataci & Akyel, 2002) confirm that metacognitive strategy training improves students’ reading comprehension. It gives students a chance to plan before reading, control their reading process, organize their own rules, and evaluate themselves. Metacognitive strategy training shapes the students to become independent readers which is the goal of reading. Therefore, in the reading classrooms, students should be trained to use metacognitive strategies to help them comprehend texts.

Allen (2003), Cotterall (1990), and Palincsar and Brown (1984) suggest that the reciprocal teaching approach is one of the reading instruction methods which covers both cognitive and metacognitive strategies and helps students improve their reading comprehension and thus become independent readers. In this approach, the teachers guide their students towards the right strategies to be used and instruct when and how to use them. Following this, the students will construct their own knowledge and make their own rules while reading texts. In the end, they will be able to apply these strategies and, from their application within cooperative groups, to perform reading tasks without any help from others.

2.3.2 Metacognition and its Components

Before discussing metacognition, it is necessary to understand the cognitive and affective states of which it is composed. The cognitive states involve knowledge of the world, one’s own knowledge and capabilities, and knowledge of strategies. The affective states are knowledge of emotions, motivations, and attitudes. This being said, metacognition is explained as the higher level of mental
process that learners learn and which they use to control their thoughts or knowledge. It consists of metacognitive knowledge and metacognitive experience (Flavell, 1987).

Metacognitive knowledge relates to an awareness of one’s knowing about cognitive states and affective states, and one’s control of this knowledge to reach a goal. This metacognitive knowledge is declarative, procedural, and conditional (Brown, 1980). Declarative knowledge involves knowledge of what one knows about cognitive stages and activities and affective states (Brown, 1980; Flavell, 1987); procedural knowledge refers to the way these cognitive states and activities and affective states are used; and conditional knowledge refers to the reason and the appropriate time to apply this knowledge and evaluate the effectiveness of the application of these kinds of knowledge.

For their part, metacognitive experiences involve the awareness of one’s own cognitive and affective processes (Flavell, 1979). These experiences can change learners’ thought processes; they can integrate and justify their current experience with the new metacognitive knowledge experience (Hacker, 1998).

In conclusion, metacognition includes two components, knowledge and experiences. Metacognitive knowledge is declarative (what one knows about one’s cognitive states and activities and one’s affective states), procedural (how to apply those types of knowledge), and conditional (when and why to apply those types of knowledge). Metacognitive experiences refer to the way one controls and regulates this kind of knowledge through planning, monitoring, problem solving, and evaluating. Knowledge and experiences that are repeatedly used and proven
effective will be stored and used in the future, whereas ineffective knowledge and experiences will be rejected.

2.3.3 Role of Metacognition in Reading

Metacognition is thinking applied to one’s own thinking. It appears to be the key for thoughtful and active reading and plays an important role in reading comprehension. Duffy (2002) states that metacognition is a core strategic behavior and leads to have control over one’s own reading. Not only do successful readers know the reading strategies, but they monitor and control their use. That is, they know what strategies to use, when, and why to apply them, and they adapt them to fit their purpose. Metacognitive readers plan, monitor, evaluate, and regulate their own skills (Block, 1992; Salataci & Akyel, 2002).

There are three foundational parts to metacognition: developing a plan, monitoring and controlling the plan, and evaluating the plan (Cohen, 1998; Pressley, 2002). Additionally, through these three fundamental parts, readers have a chance to solve the reading problems they face. They use their background knowledge and interact with the text in order to solve problems and learn new experiences.

Effective readers develop a plan before actually reading a text. They organize what they have to do in a pre-reading stage, a while-reading stage and a post-reading stage (Cohen, 1998). In pre-reading, they develop a plan, organizing all the steps of their reading task (Billingsley & Wildman, 1988; Cohen, 1998). While they are reading, they control those steps. Moreover, they perform a conscious reading of the texts to increase their awareness of the problems they face.
and of what they need to do to solve them, such as choosing the right reading strategies and when and how to use them. Finally, they evaluate the effectiveness of their planning, checking, for example, whether the reading strategies they chose solved the problems or whether they need other strategies to resolve any misunderstanding (Cohen, 1998).

Metacognition relates to the ability to apply reading strategies to solve problems when readers face difficulties in reading texts. Metacognition leads readers into thinking about their learning process, supports them in their development of a plan of action, helps them monitor their own learning in order to construct their own knowledge, and teaches them how to evaluate their own learning process (Borokowski et al., 1990; O’Malley & Chamot, 1990). Metacognition facilitates the readers’ improvement of their reading ability and helps them to reach the ultimate goal which is to become independent readers (Danuwong, 2006).

The next section focuses on the reading instruction approach called reciprocal teaching, consisting of multiple metacognitive reading strategies, which promotes metacognition and which shows positive results in improving the English reading comprehension of native speakers of English.

### 2.4 Reciprocal Teaching

Reciprocal teaching has been defined in many different ways. According to Rosenshine and Meister (1994), reciprocal teaching is an instructional strategy that directly teaches students to apply metacognitive thinking as they make meaning from a text. Carter (1997) defined reciprocal teaching as the following:
Reciprocal teaching parallels the new definition of reading that describes the process of reading as an interactive one, in which readers interact with the text as their prior experience is activated. Using prior experience as a channel, readers learn new information, main ideas and arguments. Most important, readers construct meaning from the text by relying on prior experience to parallel, contrast or affirm what the author suggests. All excellent readers do this construction. Otherwise, the content would be meaningless, alphabetic scribbles on the page. Without meaning construction, learning does not take place. Reciprocal teaching is a model of constructivist learning. (65-66)

Klingner and Vaughn (1996, p. 275) reported the following definition of reciprocal teaching defined by Lysynchuck, et al. (1990): “The reciprocal teaching model has been used to improve comprehension for students who can decode but have difficulty comprehending text.” Palincsar and Brown (1984) added in an article reported by Hacker and Tenent (2002) “Reciprocal teaching is an instructional procedure in which small groups of students learn to improve their reading comprehension through scaffold instruction of comprehension-monitoring strategies” (p. 669).

From the definitions above, it can be concluded that reciprocal teaching is a scaffolded discussion method that is based on reading comprehension strategies, scaffolding and modeling, and social interaction. This instruction allows a teacher to model and give the students enough practice on those four main strategies to
construct the meaning of a text in a social setting. The students monitor their own thinking through the reading process. Reciprocal teaching develops reading comprehension and promotes readers to be better in reading and helps them reach the most important goal of reciprocal teaching, becoming independent readers.

2.4.1 Reciprocal Teaching and Reading Comprehension

Palincsar and Brown (1984) explained that the purpose of reciprocal teaching is to promote the readers’ ability to construct meaning from texts and facilitate the monitoring of their path to comprehension. It is based on a socio-cultural method through which readers are modeled, explained, and guided in acquiring strategies within a social, supportive environment. Moreover, the four main strategies of predicting, questioning, clarifying, and summarizing promote and enhance reading comprehension (Dole et al., 1991). Baker and Brown (1984) and Palincsar and Brown (1985) stated that those four main strategies were based on the following criteria: 1) the successful readers employ these strategies; 2) these strategies support both comprehension monitoring and comprehension fostering; 3) each strategy is applied when there is a problem in reading a text; 4) these strategies are regarded as metacognitive strategies.

For these reasons, the readers who are taught through reciprocal teaching are more aware of their own thinking and reading process. Indeed, they build effective reading plans such as setting a purpose to the reading, hypothesizing on what is being read, and drawing and testing hypotheses, interpretations, and predictions; they monitor and control their thinking process and check whether they understand; and they evaluate their own reading process, problem solving
skills, and comprehension. Reciprocal teaching builds in the readers a metacognitive awareness of the active nature of reading, of task demands, and of self-regulating, in order to succeed in reading comprehension.

In conclusion, reciprocal teaching is a method providing vital reading strategy instruction that emphasizes metacognitive awareness. Its goal is to improve readers’ reading comprehension and to facilitate their becoming independent readers. It offers three features: scaffolding and direct instruction, practice of the four main strategies, and social interaction. It has been influenced by Vygotsky’s developmental theory.

In order to understand the background of reciprocal teaching, its theoretical framework is dealt with here in detail.

2.4.2 Reciprocal Teaching and its Theoretical Framework

The reciprocal teaching approach is a model originally developed by Annemarie Palincsar and Ann Brown during the mid-1980s. It is one of the reading instruction methods which cover the necessary reading strategies: predicting, generating questions, clarifying, and summarizing. It helps students improve their reading comprehension, and thus become better readers. The goal of reciprocal teaching is to use discussion to improve students’ reading comprehension, develop self-regulatory and monitoring skills, and achieve overall improvement in motivation (Allen, 2003; Borkowski et al., 1990). Its theoretical framework is based on three sociocultural theories namely, the zone of proximal development, proleptic teaching, and expert scaffolding (Brown & Palincsar, 1984).
The zone of proximal development refers to a learner’s potential ability to learn with help from an expert or a more capable partner. It is Vygotsky (1978) who pointed out that all learners have two levels of thinking development: an actual development level and a potential development level. The actual development refers to the thinking level at which children are able to solve problems by themselves, and the potential development refers to the thinking level at which learners need help from an expert or a more capable partner. The zone of proximal development (ZPD) is the distance between the actual development and the potential development (see Figure 2.1 below). Learners can push themselves from the actual development level to the potential level or learn beyond their actual development level with explicit scaffolding through social interaction until they internalize the strategies (Rosenshine & Meister, 1994).

**Fig. 2.1 Vygotsky’s Model of Zone of Proximal Development**

The second concept that forms the theoretical ground of the reciprocal teaching is called proleptic teaching and refers to procedures most often found
during apprenticeship instruction in which a teacher shapes a student until he or she is ready to perform the task independently (Palincsar & Brown, 1984). The important feature of proleptic teaching is the transfer of responsibility from teacher to students. The teacher explains and models the process for solving problems, and while decreasing his or her role, transfers the responsibility of solving problems to the students (Rogoff & Garner, 1984).

The last concept is called expert scaffolding. The expert acts as a guide, shaping the learning efforts of the students and providing support for learning until the students do not need it (Rosenshine & Meister, 1994). Scaffolding procedures include limiting the tasks to make them manageable, motivating students, pointing out critical features, and demonstrating solutions to problems and explaining them to the students (Palincsar & Brown, 1984). These procedures help students to learn how to perform a task, how to solve problems, and they support them in their attempt to learn until they can perform the task independently. According to Greenfield (1984), scaffolding teaching is adapted to the learners’ current learning state; when the learners’ skills are developed, the teacher’s scaffolding is decreased, and if the text is difficult, greater assistance and feedback are given to the students in order to shape their understanding. However, the teacher acts as a facilitator after the students do not need much help. Scaffolding is eventually internalized and thus promotes the independent performance of reading skills.

These approaches provided the background theories to reciprocal teaching (Adunyarittigun & Grant, 2005) in which: (a) the teacher guides the students into the right use of the four key strategies and gives them a chance to practice them;
(b) the teacher acting as an expert models the whole process of the reciprocal teaching approach for the students’ benefit; (c) the students, supported by expert peers, work in cooperative groups as the teacher decreases support in order for the learners to develop independent reading competence.

2.4.3 The Three Features of Reciprocal Teaching

The theory of reciprocal teaching presents three key features: scaffolding and explicit instruction, four main strategies, and social interaction.

Scaffolding and explicit instruction

The concept of scaffolding is grounded in Vygotsky’s social constructivist learning. According to Vygotsky (1978), every mental function in a child’s development first appears in collaboration with an adult or expert. This collaboration occurs in the zone of proximal development, an area that stands between what children can do by themselves and what they need assistance to do. With enough practice, children internalize this collaborative form in their mental process and can work alone in new contexts. Graves & Graves (2003), Pearson and Fielding (1991), Pressley (2002), and Rogoff (1990) have defined scaffolding as an effective way to assist students in reaching their higher ability by supporting their accomplishment of a task they could not complete by themselves. Once this level of performance is reached, the teacher decreases his or her responsibility whereas the students take more responsibility in their reading tasks until they become fully independent readers (Malock, 2002). The teachers should provide enough support so that the learners do not give up on the task, but at the same time they should not overly scaffold in a way that the learners are not offered enough opportunities to work actively by themselves.
Clark and Graves (2005) review three aspects of scaffolding and its effectiveness: Scaffolding is flexible and supports students in their acquisition of basic skills and higher thinking. It allows for explicit instruction, and allows teachers to teach students of diverse needs.

Reciprocal teaching provides scaffolding through explicit instruction involving the modeling and explanation of the four main strategies, guided practice, independent practice, and the application of the strategies by the students themselves. Rosenshine and Meister (1994) stated that it is easy to memorize strategies, but it is difficult to transfer or apply independent strategic thinking. Teachers need to show their students how to do this through explicit instruction that includes limiting tasks to make them manageable, motivating the learners, pointing out critical features, and demonstrating solutions to problems.

**The four main strategies of reciprocal teaching**

The reciprocal teaching approach concentrates on four key reading strategies: predicting, generating questions, clarifying, and summarizing. Each strategy is useful for students to comprehend a reading text and can be used separately or combined according to the situations, problems, and reading purposes the readers face (Wiseman, 1992).

**Predicting**

Predicting involves finding comprehensive clues by using a reader’s own background knowledge and personal experiences. The purpose of this strategy is to link what the reader already knows about the topic with the knowledge she or he is about to acquire through reading. In other words, predicting keeps the readers
actively thinking on the text while reading (Duffy, 2002). Prediction requires readers to formulate and check their hypotheses about the text. The more readers predict what a particular text is about, the more likely they are to read it with understanding. If the original prediction is incorrect, a new prediction can be made and tested through reading the text. To achieve this, readers are required to activate their prior knowledge and relate it to the knowledge found in the text. Readers are also encouraged by the teacher to use text structures such as the titles, the subtitles, and the illustrations (Bruce & Robinson, 2004), all of which are clues to help predict what a text is about. Prediction is an important strategy that helps students to set a goal before reading.

Clarifying

Clarifying is the strategy that readers use while monitoring comprehension (King & Johnson, 1999). It occurs when the readers meet with comprehension breakdowns or confusion and when they attempt to restore meaning, when, for example, the reference terms are unclear and the vocabulary is difficult or unfamiliar. Readers monitor their reading comprehension when they try to clarify what they have read (Lederer, 2002). Clarifying enables readers to identify and question any unfamiliar, unnecessary, or ambiguous information in the text. The questioning, discussion, and reflection that take place both during and after reading is an opportunity for clarifying. Therefore, clarifying is an important part of monitoring comprehension.
**Questioning**

Generating questions requires readers to identify information in the text they are reading. Questions are constructed to ask about the main idea or important information. The purpose of this strategy is to test whether the readers understand the text and to help her or him identify important information. In addition, encouraging readers to generate questions related to the content of a text has a positive effect on the development of their reading comprehension (Andre & Anderson, 1979). Moreover, questioning can frame and solve comprehension inadequacies, assisting the readers in monitoring their own comprehension.

Rosenshine, Meister, and Chapman (1996) state that when readers create questions, they pay more attention to the content. This makes reading an active process and focuses the readers’ attention on the text. When readers generate questions, they may generate answers that they expect to be correct. If a different answer is offered by a peer, a comprehension failure occurs, and the readers need re-thinking to find the right answer.

Rosenshine, et al. (1996) also describe how students need to use their text to search for information and formulate questions in order to help them understand what they read. This also enables them to become more involved when they are reading (Rosenshine, Meister & Chapman, 1996). Some useful question words are who, what, when, where, why, and how, such as in the questions “What is happening?” and “Why is this happening?” Overall, teaching students to generate questions during the reading process fosters comprehension and improves reading comprehension.
**Summarizing**

In summarizing, readers are required to identify the key idea of each paragraph. A good summary does not include details that are not important. Readers are encouraged to make use of headings, sub-headings, and main ideas in each paragraph to summarize the text they are reading. The readers should think of what a paragraph or a text is mostly about, find a topic sentence, and construct a sentence that reflects the most important information in the paragraph. Summarizing the main idea in each paragraph of a text helps readers not only to connect what they already know to the present piece of reading, but also to predict what might happen in the next paragraph to check the accuracy of their prediction (Greenway, 2002).

Summarization is used to help readers grasp the main idea of a text in order to comprehend the whole picture and to guide them through further reading. It improves reading skills by focusing the awareness on the important information in a text and ignoring the unimportant information (Lysynchuck & Pressley, 1990).

**Social interaction**

Social interaction is based on the zone of proximal development (ZPD) developed by Vygotsky (1978). Through it, students are able to learn or solve harder problems, or reach a more complete development of their potential through some guidance from an adult (teacher or expert) or learning activities such as discussion, brainstorming, and group work. Group work offers four movements of social interaction (Gavalek & Raphael, 1996). First, students in a group learn with the members of their group by sharing, discussing, and peer tutoring. Second, they
internalize this knowledge. In reciprocal teaching, students learn the four main strategies through the teacher’s modeling and, later, working in cooperative groups, they think of the four main strategies they have learned, what strategies to use, and when and how to use them, and why to use them. Third, the students build their own understanding and reading process on the basis of what they have learnt from the social setting and thus engage in a process of transformation. Finally, they share their understanding and thinking with the group. In this stage, the students’ thoughts are shaped through group discussion (Wilen, 1990). In reciprocal teaching, each participant in a group has a chance to be a leader and manages group work by discussion through the four main strategies.

Social interaction is important because it promotes social learning (Dewitz, Carr & Patbery, 1987). In the reading classroom, working in a group provides opportunities for students to improve their cognitive, metacognitive, and affective strategies. Social interaction improves students’ ability to resolve comprehension difficulties, improves their higher thinking or metacognition, and increases their motivation. Finally, students create new knowledge from what they internalize in order to reach a higher development of their potential (Stevens, Slavin & Farnish, 1991).

In brief, through scaffolding and explicit instruction, reciprocal teaching provides four key reading strategies for students to comprehend a text better. These strategies encourage students to be actively and consciously involved with a text. Moreover, the expert-novice interaction between the teacher and the student or between peer and peer helps the students to regulate their own rules. This gradually assists them in their becoming independents readers. The following figure is the summary of the reciprocal teaching theoretical framework (Malock, 2002).
Independent Readers

Reading Comprehension Ability and Metacognitive Awareness

Reciprocal Teaching

4 Main Strategies
Metacognitive reading strategies

Scaffolding and Explicit Instruction
Guided practice Explicit modeling Teacher supports and gradually transfers leader’s role to students

Social Interaction
Teacher and students, and among students themselves

Fig. 2.2. Reciprocal Teaching Theoretical Framework
The following studies support the notion that reciprocal teaching increases reading comprehension.

2.5 Studies Related to Reciprocal Teaching

2.5.1 Palincsar and Brown’s Research

Palincsar and Brown (1984) developed reciprocal teaching to help 7th grade poor readers to improve the reading comprehension. Two studies were conducted to test the effectiveness of reciprocal teaching. In the first one, reciprocal teaching was compared to a traditional teaching method. The results showed that reciprocal teaching produced greater gains than the traditional method. In the second study, the experimental group interventions were conducted by volunteer teachers (not the experimenters). The results were very similar to the ones in the first study.

Later, Brown and Palincsar (1986) compared the effectiveness of four instructional procedures to teach the four strategies of predicting, questioning, clarifying, and summarizing. The subjects were average 5th and 6th graders. The first of the four instructional procedures was the reciprocal teaching approach through which students received training on the four strategies. The students first practiced using the four strategies as they interacted with the teacher. Then they worked in groups in which they were given more responsibility to initiate and sustain the dialogue while the teacher acted as a facilitator, providing them with clues and feedback. In the second instructional procedure, explicit instruction, the teacher modeled and discussed each strategy. The students were then asked to perform exercises applying the four strategies. In the third type of instruction, the students practiced by working in groups with no help from the teacher. They were
given worksheet activities on the four strategies. And in the last instructional procedure, the students received the same training and procedures as group one, but they worked in groups on the 5th day of the six-day instruction period. The findings showed that the reciprocal teaching group gained the highest scores in reading comprehension. The group given explicit instruction and the group with scripted intervention showed better gains than the group in which the participants practiced by themselves.

The studies showed positive results for the use of reciprocal teaching on L1 students. Reciprocal teaching as conducted by Palincsar and Brown was effective with different age groups (5th, 6th, and 7th graders), and with readers of their own language. Moreover, the findings suggest that the components of reciprocal teaching are needed to work in the zone of proximal development; these components are the use of a scaffolded and proleptic approach (transfer of learning responsibility from teacher to students working in cooperative groups), and of the step-by-step training on the four reading strategies (what they are, and when and how to use them).

2.5.2 Reciprocal Teaching in First Language (L1) Context

**Primary school level**

Johnson and Catherine (1998) investigated 59 students (3rd through 5th grade) for ten weeks. The students were assigned into three groups: a reciprocal teaching (RT) group, a visualizing /verbalizing (V/V) group, and an untreated control group. The RT group studied through reciprocal teaching and the four main strategies and the V/V group studied how to create images of texts while reading. The results showed that the students in the trained groups showed significantly
better performance than the untreated control group. The RT group answered more text questions than the V/V group. It can also be noted that there was no significant difference between the V/V group and the RT group in reading strategies.

King and Parent (1999) investigated the four strategies of reciprocal teaching with 5th grade teachers, who conducted reciprocal teaching in an L1 classroom. It was found that when the teacher consistently and clearly modeled all four strategies, the students effectively monitored their reading comprehension and gained deeper insight of the text at hand.

Hess (2004) attempted to investigate and describe the implementation and evaluation of metacognitive reading comprehension strategies taught in the Reading Wings program. Five teachers of 4th and 5th grade classrooms at an elementary school in Northern California, and with limited experience in the program Reading Wings were sampled from a Literacy Orientation Survey (LOS) – a survey of their beliefs and practices in their teaching of reading. Then they were interviewed individually on reading instruction and practices. During their reading class, they were observed instructing students in reading comprehension using two reading strategies, clarification and summarization. The findings revealed that all five teachers’ teaching style, beliefs, and practices were improved. In addition, the students were also observed using metacognitive reading strategies, particularly clarification and summarization. The results showed that the students also improved the quality of their discussion, used more questions at a higher critical level of thinking, and achieved higher scores on the comprehension test.
Bruce and Robinson (2004) assessed the effectiveness of the metacognitive and reciprocal teaching approach for improving word identification and reading comprehension skills of upper primary readers experiencing difficulty in a regular classroom situation. To improve word identification skills, the subjects in the main training condition were given metacognitive training in the analysis and monitoring of word identification strategies. Reciprocal teaching procedures, incorporating the above word identification strategies, were used for comprehension training. The subjects were divided into three groups. The first group received a combined metacognitive word identification and reciprocal teaching program. The second group received traditional classroom word identification and comprehension activities. And the third group received reciprocal teaching of comprehension combined with traditional methods for identifying unfamiliar words. Measures on the improvement in word identification, metacognitive awareness of word identification strategies, and comprehension were applied during the study, which took place over an 8-month period in a school year. The results indicated that the combination of metacognitive word identification strategies and reciprocal teaching for comprehension was clearly more effective than traditional classroom word identification and comprehension activities or than reciprocal teaching for comprehension with traditional methods of word identification.

Diehl (2005) also studied the effect of reciprocal teaching on strategy acquisition of 4th grade struggling readers who could adequately decode words but poorly comprehend a text. A pre-test and a post-test were used to determine the effects of this instruction. Additionally, sessions were taped, transcribed, and analyzed in search of trends in the dialogues relative to strategy use. The results
indicated that reciprocal teaching had positive effects on strategy acquisition of these readers and led them to improve their reading comprehension.

Todd and Tracey (2006) investigated how reciprocal teaching affected vocabulary acquisition and reading comprehension in four at-risk students in a 4th grade inclusion classroom. A single subject research method was used. After determining a baseline, two interventions were applied during a six-week period: reciprocal teaching and guided reading. The key findings indicated that three of the four students increased both their vocabulary acquisition and reading comprehension skills. However, no differences were found when both interventions were used on one student. But all students gained benefits from reciprocal teaching.

In brief, most studies on reciprocal teaching in first language (L1) context at the primary school level revealed positive results. They showed that students who learned through reciprocal teaching improved their vocabulary acquisition and the quality of their discussion. Moreover, they used more questions at a higher critical level of thinking, and achieved higher scores on the comprehension test.

**High-school level**

Rosenshine and Meister (1994) conducted 19 studies that used reciprocal teaching to help students with their reading ability. The review found that (1) when provided before reciprocal teaching, explicit instruction in the four strategies was more effective than when reciprocal teaching only was used; (2) the results were mostly non-significant when all students in a group were below average, but significant when groups included students with mixed abilities; (3) the results were usually significant when the tests were developed by the experimenter, while usually non-significant when standardized tests were used.
Cotterall (1990) used reciprocal teaching with adult students who were poor in English and attending evening classes at the University of Victoria in Canada. The participants were required to clarify what seemed to be unclear in a text, identify the main idea and summarize what had been read, and predict the next sections of the text. It was found that reciprocal teaching was involved with active problem solving and that this teaching approach made learners more conscious of their reading style.

Weedman (2003) conducted a study at a high school in Kentucky, in the United States, to examine the effects of a reading program using reciprocal teaching strategies on the reading comprehension of 9th grade students divided in four groups: a group who received instruction in the four reciprocal teaching strategies, a group who received no instruction in reciprocal teaching strategies, a group who received only the summarization strategy, and a group who received only the generating question strategy. The four reciprocal teaching strategies were compared with the results of the same reading comprehension test given to a group of students who received no instruction in reciprocal teaching. Moreover, the reading comprehension scores from the two groups of students who received only one of the reciprocal strategies were compared with the scores from the group who had received full strategy instruction. No significant difference was found among any of the groups’ pre-test and post-test results. However, the test scores of the group that received instruction on all four key strategies were higher than the group that received instruction on only one strategy.
Clark (2003) studied the efficacy of reciprocal teaching with adult high school students on reading comprehension. Fifteen students of mixed abilities and ethnicities, aged sixteen to fifty, participated in the 5-week study. The instruments in this study consisted of written assignments, group discussions, and surveys of the students’ opinions on reciprocal teaching. Group discussions and written assignments were analyzed. The results from the surveys showed that 90% of the students reported benefits from using reciprocal teaching and preferred it to traditional instruction; 40% of them stated that reciprocal teaching improved their reading comprehension.

In conclusion, most studies on reciprocal teaching in first language (L1) context at high school level also showed positive effects. The students improved their reading ability significantly in groups of mixed abilities. In addition, students who received explicit instruction on the four strategies before reciprocal teaching performed better than when reciprocal teaching only was used. Finally, students showed a more positive attitude towards reciprocal teaching than towards traditional teaching.

*University level*

Hart and Speece (1998) investigated the effects of reciprocal teaching on postsecondary students at risk for academic failure. The sample consisted of 50 students in a community college in Maryland, in the United States, who were divided into two groups: an experimental group and a control group. The results showed that the reciprocal teaching group performed significantly better than the general teaching group on reading comprehension and strategy acquisition.
However, there were no differences on perception of study skills. In secondary analyses, poorer readers in the reciprocal teaching group benefited more on both reading comprehension and strategy acquisition than poorer readers in the control group.

In conclusion, the results from the studies on reciprocal teaching in L1 context were positive for all age groups. In primary schooling, students could decode words adequately, but comprehend text poorly. In high schools and universities, students had problems in reading comprehension. After receiving reciprocal teaching, their scores on reading comprehension tests were significantly better than the ones in the control group. Additionally, the general results from these studies point to the fact that using reciprocal teaching with the four main strategies combined with explicit instruction was the most successful method to help students improve their reading comprehension.

2.5.3 Reciprocal Teaching in ESL and EFL Context

*Primary school level*

Russell (1998) studied the effects of reciprocal teaching on reading and oral language proficiency. Forty-eight 6th grade students were randomly assigned to an experimental and a control group, respectively 25 and 23 in each group. The experimental group received 20 days of reciprocal teaching treatment while the control group received traditional ESL reading instruction. Both groups used the same materials. The instruments in this study consisted of the Language Assessment Scales (LAS) Standardized Reading Test, the oral language proficiency (LAS - O) test, and the Self-Perception Scale (RSPS). Each instrument was administered as
pre– and posttests. This study extended the positive effects of reciprocal teaching on reading comprehension and it was additionally found that reciprocal teaching had a significant positive impact on oral language proficiency and reader self-perception.

**High-school level**

Smith (1998) investigated the efficacy of reciprocal teaching by replicating the Lysynchuk, Pressley, and Vye’s study (1989). Fifty-four ESL students in a junior secondary school (9th grade) in Ghana, West Africa, participated in the 20 sessions of reading. The experimental group received reciprocal teaching whereas the students in the control group received no training. The two groups practiced with the same materials. The results of the study indicated that on the reading comprehension part of the Ghana Junior Secondary School Certificate Examination, the students in the training group performed significantly better than the ones in the control group. Moreover, they gained the same results eight week after the training. The students at all levels of reading ability benefited from reciprocal teaching. Finally, they performed better in generalizing the use of the four main strategies in a social studies class.

Grisha (2005) compared the reciprocal teaching approach with the communicating language teaching technique on 12th grade students’ reading comprehension in Delhi, India. The results of this study revealed that the English reading comprehension of the group who was taught with the reciprocal teaching technique was significantly different, that is, it was higher than the one of the group instructed through the communicative language teaching technique at 0.05 level.
University level

Hansan (1994) compared the effects of reciprocal teaching approach to the translation technique on university ESL students at Kuwait University. The results showed that the students learning through reciprocal teaching had better reading performances than those who had been exposed to traditional teaching. Moreover, the researcher found that the participants in the reciprocal teaching group had the opportunity to use English as a communication tool.

However, Adunyarittigun (2004) found that there were no significant differences in reading comprehension between the students in an experimental reciprocal teaching group and those in a group instructed through regular teaching; though reciprocal teaching had positive effects on the students’ self-perception and attitude.

Jacobraj (2000) compared the effects of the reciprocal teaching approach with the translation technique on university EFL learners in India. The subjects of this study were 60 first year students of the Faculty of Management Studies at Biju Patnaik University. They were divided into a control group and an experimental group, in a two-group, pretest-posttest design. The control group was instructed through the translation technique while the experimental group was taught through the reciprocal teaching approach. The results of the study showed that the students in the experimental group reached higher scores in reading achievement than those in the control group. Moreover, the learners in the experimental group expressed a more positive attitude towards the reciprocal teaching approach than those of the control group did toward the translation technique.
Ajoykumar (1999) investigated whether reciprocal teaching enhanced the reading ability of EFL university students in Central University of Karnataka, India, as well as the effectiveness of reciprocal teaching related to the students’ reading proficiency, and what types of questions are affected by reciprocal teaching. The results showed that this technique improved the EFL students’ reading ability and proficiency. In addition, the less proficient participants benefited more from reciprocal teaching than the more able readers. Finally, the study revealed that the types of questions the students used in relation to the main ideas and to making inferences were significantly improved.

Soonthornmanee (2002) studied whether the reciprocal teaching approach helped EFL Thai university students learning at Chulalongkorn University in Bangkok with text comprehension. The subjects were eighty-four political science students divided into an experimental group instructed through reciprocal teaching and a control group taught through skill-based teaching (a reading instruction that focuses on specific skills such as finding the main idea, finding and inferring details and facts, drawing inferences, and explaining the grammar and structure of a reading passage). The findings showed that the students in the reciprocal teaching group had greater gains than the ones instructed through the skill-based teaching method. Both skilled and less-skilled learners in the reciprocal teaching group benefited from the approach and the participants in this group had a positive attitude toward reciprocal teaching, indicating that it has a significant positive influence on Thai students’ reading comprehension at university level.

Kamelesh (2004) also examined the effects of reciprocal teaching on reading comprehension. The research was conducted with a one-group
experimental design. The participants were thirty-four first year university students of English Literature Students in India. The researcher used both quantitative and qualitative methods: a pretest, a posttest, and a follow-up reading comprehension test; a pre-questionnaire, a post-questionnaire, and a follow-up questionnaire; checklists; and journals. The results showed that reciprocal teaching improved the students’ reading ability. Moreover the students exhibited further gains in reading comprehension in the follow-up test compared to the results from the post-test completed at the end of the training, pointing to the fact that the four strategies in reciprocal teaching were still used by the students in their reading even after the training.

Nagaraj (2006) explored the effect of Reciprocal Teaching intervention designed to enhance the reading skills of engineering college students at Tamilnadu, India. He identified that students acquired comprehending strategies in a relatively short period and showed considerable progress. Thus, the researcher highlighted that university students have a higher meta-cognitive awareness than younger ones.

The studies on reciprocal teaching in ESL and EFL contexts are mostly focused on university level because students at that higher level can decode words adequately. Few studies exist on reciprocal teaching at engineering education level. However, the results from most of the studies are positive. The students who received reciprocal teaching were significantly better in reading comprehension than those instructed through other methods. In addition, those who were part of reciprocal teaching groups showed a positive attitude toward reciprocal teaching.