



Chapter 2

Review of Literature

The purpose of this chapter is to review related literature to the present study. The major contents of the review involve two parts: Part I, literature related to repeated reading, and Part II, literature related to self-directed behavior.

Part I

Repeated Reading

History of Repeated Reading.

The repeated reading of connected material is not a new instructional method to those in the field of reading education (Dowhower, 1987). The history of this old method can be traced to

Huey's classic book:

“Perceive being an act, it is, like all other things that we do, performed more easily with each repetition of the act. To perceive an entirely new word or other combination of strokes requires considerable time, close attention, and is likely to be imperfectly done, just as when we attempt some new combination of movements, some new trick in the gymnasium or new serve at tennis. In either case, repetition progressively frees the mind from attention to details, makes facile the total act, shortens the time, and reduces the extent to which

consciousness must concern itself with the process” (Huey, 1908, 1968 cited in Samuels, 1993).

Huey noted that many children in Europe and the United States, at the turn of the century used repeated reading by merely practicing a text over and over until they could read it fluently. During the 1970s, theorists and researchers in reading have showed a renewed interest in the efficacy of this old but relatively easy procedure. Many studies have been reported which tested the repeated reading method (Barnett & Seefeldt, 1989; Conte & Humphreys, 1989; Eldredge, 1990; Resinski, 1990; Sindelar, Mona, & O’Shea, 1990; Weinstein & Cooke, 1992; Levy et.al., 1993; Ensor, 1994).

Although the terminology and method differ, all the procedures share a common goal that is to increase fluency of the slow, halting readers. The common strategy of these procedures is that students repeat the same meaningful passage until they can read quickly and accurately. One of the other changes which takes place is the student also reads with expression.

Types of Repeated Reading

Repeated reading procedures, in general, have fallen into two categories: unassisted repeated reading and assisted repeated reading. The unassisted repeated reading was developed by S. Jay Samuels (1979). According to Samuels, the unassisted repeated reading means “the method in which a student independently rereads a short, meaningful passage several times until a satisfactory level of fluency is reached”. In this method, students take turns reading a short selection to an assistant, who records their reading speed and number of word recognition errors on a graph. When finished reading to the teacher, the student then returns to his/her seat and practices reading the selection while the next student reads to the teacher. When

the first student's turn comes again, the procedure is repeated until a criterion rate is reached. In short, in unassisted repeated reading the students have no model or audiotape to follow.

At the same period of time, Carol Chomsky (1976) had developed another form of repeated reading called assisted repeated reading. In essence, it involved students with live or symbol models of reading. In other words, the students read along with the respective models. For example, Chomsky (1976) used an audiotape as an assistant. In his procedure, the students chose a book and read along with the audiotape of the book until they could read with ease. The model could be a teacher rereading a story in a fluent style to a student (Rasinski, 1990), peer-mediated reading instruction (Mathes, 1993) or audio supported (Conte & Humpreys, 1989; Parson, 1994)

Although the two repeated readings are different in the assisted or unassisted, the basic purpose is the same. Both procedures are used for improving the students' fluency. Especially, to increase fluency in poor readers.

Many researchers have extended and supported Chomsky's and Samuels' original work, and many reports suggested that both unassisted and assisted repeated reading facilitate the increases in reading speed, word accuracy, expression, and comprehension of practiced passages (Dowhower, 1989). The review on these areas are discussed later in this chapter.

A rationale supports the use of repeated reading so far as can be seen, in the theories based on information processing paradigms. For example, LaBerge and Samuels' (1974) automaticity theory, Perfetti and Lesgold's (1979) verbal efficiency theory, in which repeating the same text increases proficiency in word recognition.

The next section is devoted to the discussion of the automaticity theory which is focused in this study.

Automaticity Theory

“Automaticity is a learned process that enables a person to perform highly complex acts rapidly, with minimal effort and no conscious control” (Samuels, 1993). Samuels viewed that when the automatic stage is achieved, an individual may perform a complex act without attention (p. 39). For example, an experienced automobile driver who can minimize attention to the mechanics of driving a car while maximize attention to steering the car, viewing other cars and getting information on the highway, and even engaging in conversation with a passenger.

Although automaticity can be used to describe many complex skills, it has been commonly used to describe fluent and efficient reading. Samuels (1993) described that the model views the human mind as having only limited ability to process information. The model identifies the two critical components in which fluent reading develops. First, the capacity of the mind to store and process information easily, a person can decode a text and develop reading skill. Second, the difficulty of the text. A text which contains many familiar words and concepts will be easier than a text that contains unfamiliar material.

The interaction between the capacity of the mind and the difficulty of the text is so important because it determines the speed of reading and how the reading will be performed. If, at the beginning stage of reading, the text demands fall within the reader's capacity to process information, then reading will be rapid and the text will be read easily. On the other hand, some texts are so difficult that the initial demands exceed the capacity of the mind, then reading is slow, halt and difficult.

The simple interaction between the capacity of the mind to process information, and text difficulty can help explain differences between beginning and fluent reading stages. In the beginning stage of reading, the task of decoding the text from the printed to the sound representation (e.g., John to /John/) is very difficult and requires so much energy and effort that it may use up the entire capacity of the mind. The decoding gets done but not the comprehension task. Then, attention is switched to the comprehension task and that is completed. What makes beginning reading so difficult is that the reader must keep switching attention back and forth between decoding and comprehension, which puts a heavy load on memory.

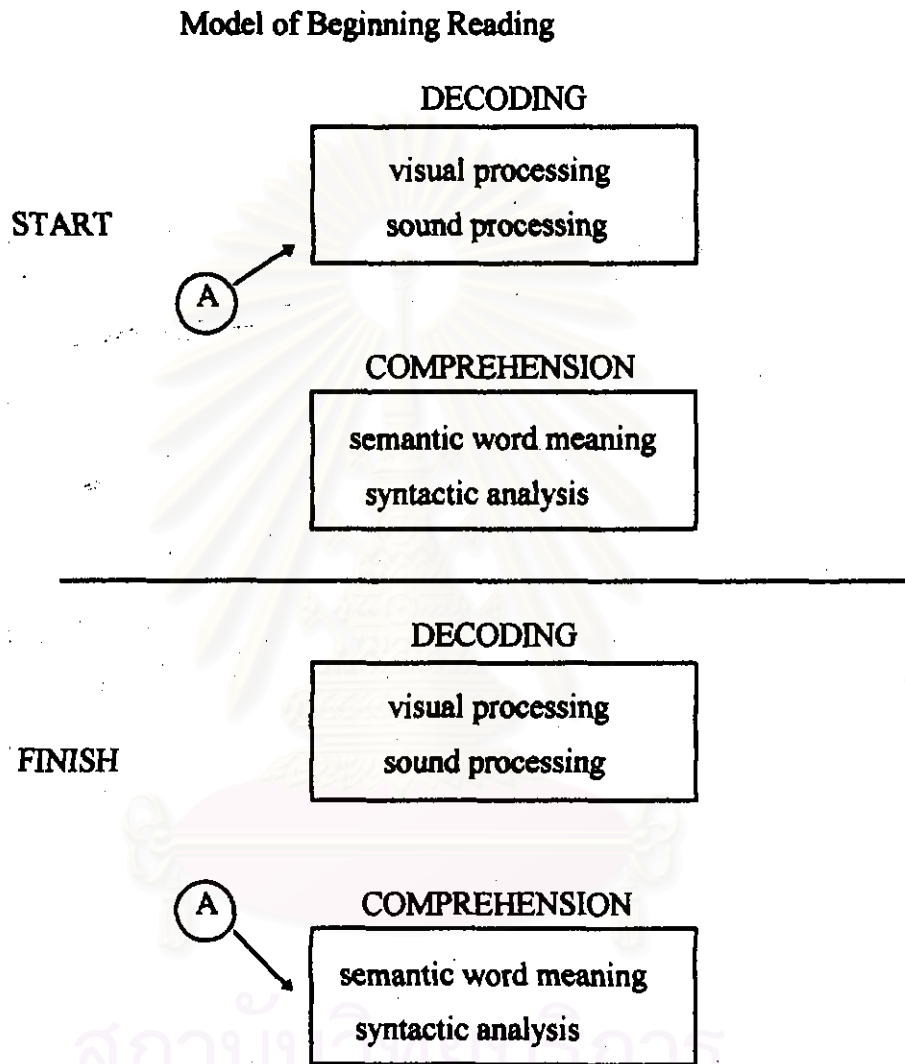
With the method of repeated reading, decoding requires less attention and effort so that both processing of decoding and comprehension fall within the processing capacity of the mind. At this point, both processes can be done at the same time and the automatic fluency stage is achieved.

The differences between beginning and fluent reading can be shown in the models (Samuels, 1994) in figure 1 - 4 below:

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

Figure 1

The Model of Beginning Reading



In figure 1, the beginning reading involves two separate processes, decoding and comprehension. The decoding process starts first and requires all attention. An attention is then switched to the comprehension process. After that it switches back to the decoding again and so on. With fluent reader (Figure 2), in contrast, both processes can occur at the same time but the attention is used only one place. Although both processes are simultaneously occurring, all attention is available for the comprehension whereas the decoding process is done automatically.

Figure 2

The Model of Fluent Reading

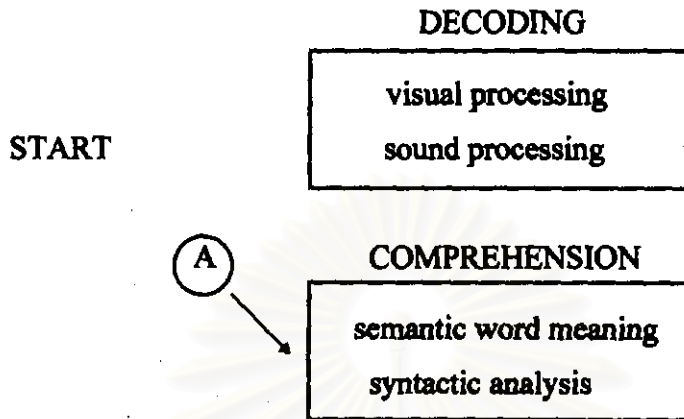
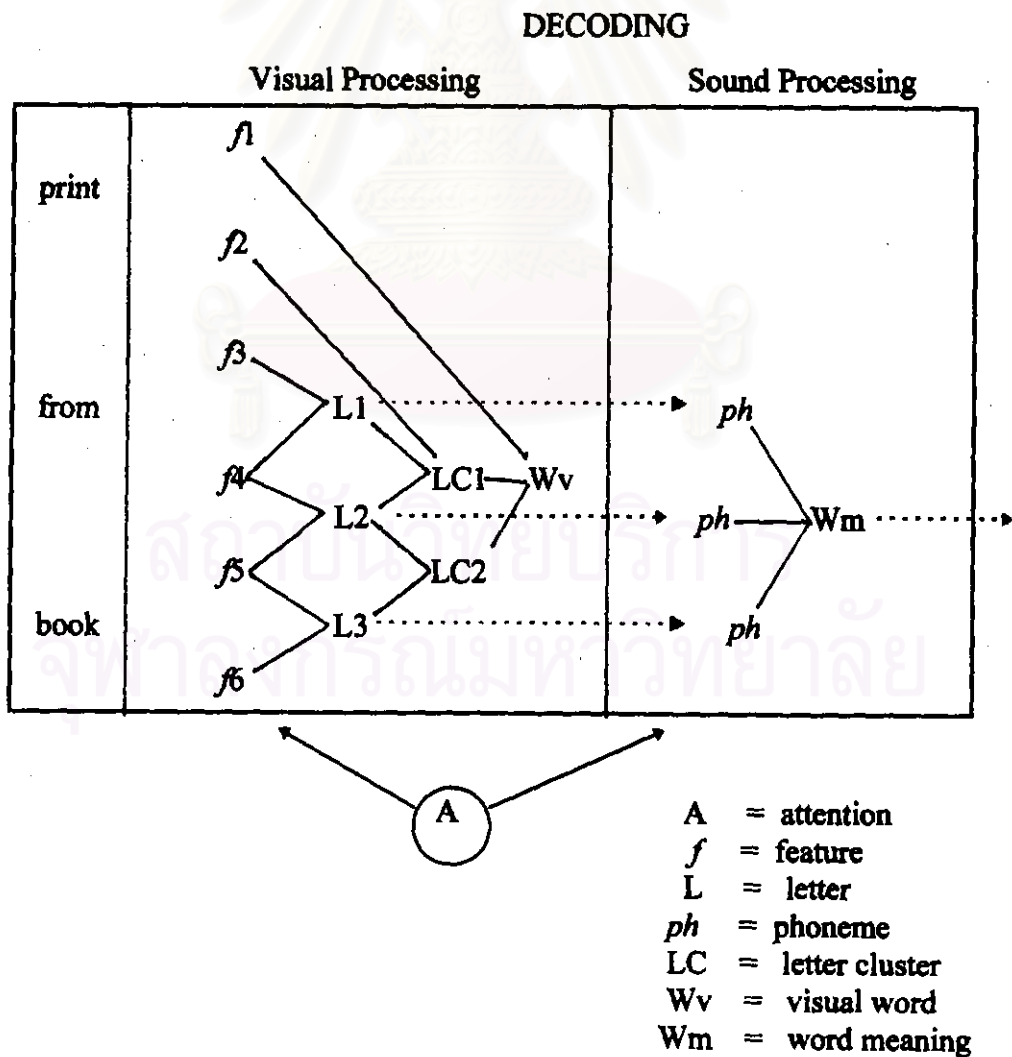


Figure 3

Decoding Model of Beginning Reading Stage



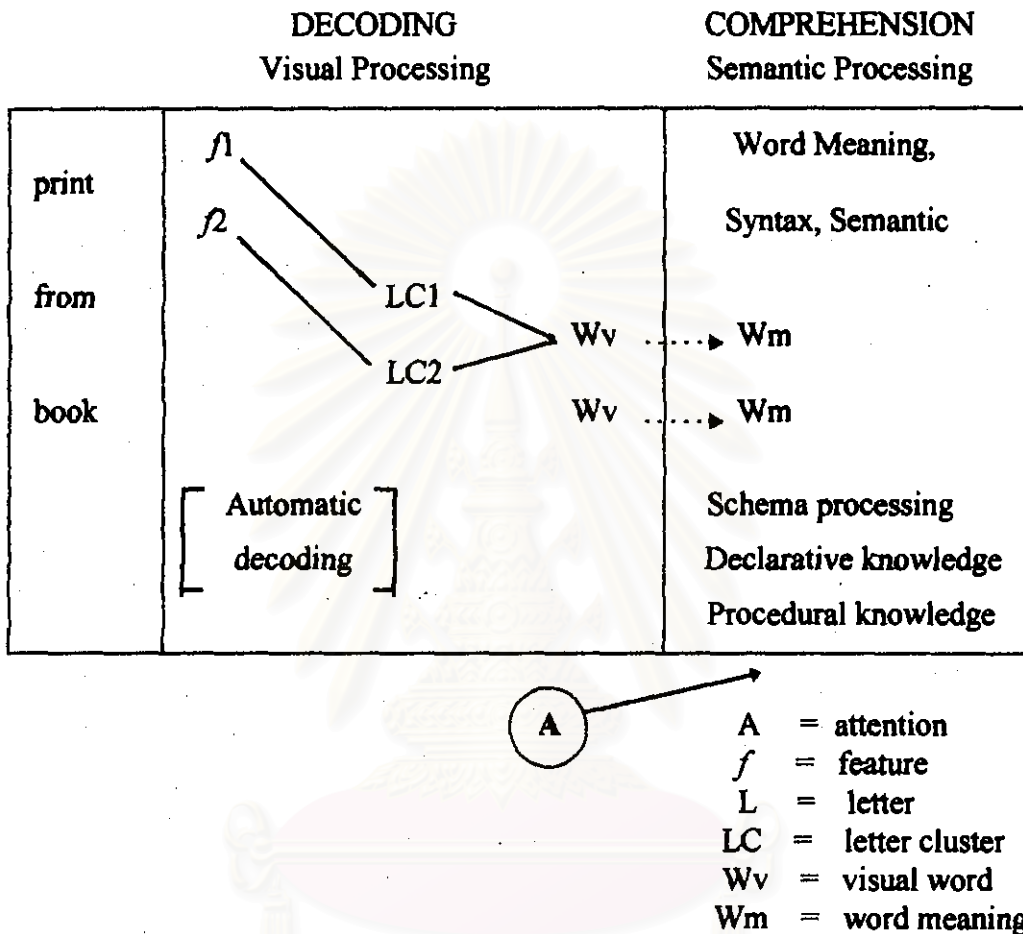
As in Figure 3, the print enters from the left and is analyzed by features (e.g. f_1), which in turn feed into letters (e.g. L2). The features refer to some parts of an object that make it unique and help in its identification. For example, round or sharp edges of a one Baht and a five Baht coin can help in telling them apart. These letters being coded then activate letter clusters (e.g. LC1), which then feed into visual words (Wv), and visual words may sometimes give rise to word-groups. Some features activate a visual word directly (e.g. f_1 , a word feature such as shape of a word). In English word length is a feature. Some features activate letter clusters directly (e.g. f_2 , a feature used to identify letter clusters such as *ing*, *ed*, *sch*, *ch*). As we have seen from the model, the information flows from visual processing to phonologically systematizing, which then connects to meaning.

It is important to note that arrows from attention (A) indicate two-way flow between visual processing and sound processing. This means that both processes of the beginning reading stage require attention.

In Figure 4, the decoding is done automatically (without or with little attention). Both decoding and comprehension tasks can be done at the same time. Thus attention can now be devoted to comprehension and constructed meaning.

Figure 4

Model of Decoding in Fluency Reading Stage



In order to understand the meaning of the printed text (word meaning, syntax), readers require schema, declarative knowledge, and procedural knowledge (Samuels, 1994). According to the schema theory, each person develops large numbers of related concepts around topics such as "school", "religion", "food markets". The school schema, for instance, involves concepts about all the objects in a school (e.g. books, teachers, students, chairs, paper) and the action taken with these objects. The objects (declarative knowledge) and actions (procedural knowledge) make up the schemata for a topic. When reading, the readers identify the topic, activate the

appropriate schemata, and try to match up information from the text with knowledge stored in a schema.

In addition, in order to construct meaning, the reader must find word meanings in the mental dictionary (in memory), identify grammatical constructions, and locate the knowledge base which will be used to comprehend. All processes used in understanding a text are used in semantic processing

Assessing Automaticity

There are a number of techniques to test when the automaticity stage is reached. According to Samuels (1993), speed and accuracy of oral reading are one simple indicator of automaticity. However, the teacher should listen to expression in the voices as an additional indicator.

Since nonautomatic readers usually can not read with expression, telling a student to do so is of little help. A good test of automaticity requires the student to read orally from a new unfamiliar passage and then recall what was read. It is possible for students to be automatic at silent reading but not at oral reading, if silent reading is what they do most of the time, and if they have had little opportunity to practice oral reading. Oral reading with recall is a dual task. Readers have to decode text orally and comprehend the read text. Samuels (1993) stated students who could not to recall the text after oral reading indicated that they were not automatic in decoding. According to Samuels (1979), practice enables almost all students to achieve automaticity in reading, and the method of repeated reading is a useful technique to help achieve this goal.

Reading Skills with Repeated Reading

Fluency

Fluency may be defined as the smooth and natural oral production of written text (Rasinski, 1989). In other words, fluency means the ability to read texts fast, accurately, and expressively. Fluency can be separated into two components, accuracy of word recognition and reading speed (Samuels, 1979). Samuels, suggested that in the rereading of a passage, speed or reading rate should be first emphasized instead of word recognition or accuracy. Students should only be allowed to start a new passage when they reach a predetermined rate of speed. According to Samuels, there appears to be a trade-off between accuracy and reading speed. If word recognition accuracy is most stressed before students can move on to a new passage, the reading rate is slowed down because the students become fearful of making a mistake. In the opposite, if speed is required, word recognition accuracy should not be stressed. In fact, overemphasized accuracy tend to impede fluency. He also claimed that rereading a passage to a criterion would increase word accuracy and comprehension.

As has been stated, the method of repeated reading was developed primarily as a means to build students' fluency. Therefore, the method was very interesting to a number of reading researchers who were concerned with unskilled readers. Several studies have reported gains by using the methods of repeated reading. For example, rereading the same message using unassisted repeated reading increased poor readers' oral fluency and comprehension (Sindelar, Mona, & O'Shea, 1990; Levy, Nicholls, & Kohen, 1993). Rereading the same passage using either the unassisted or assisted repeated reading procedure significantly increased reading rate and accuracy (Rasinski, 1990; Suter, 1992). Practicing one passage to a set rate of reading speed led

to increases of speed and accuracy in new unpracticed passages (Barnett & Seefeldt, 1989; Wilson, 1992; Weinstein & Cooke, 1992; Sweeney, 1993).

There are numerous explanations for the success of repeated reading. According to the automaticity theory, fluency can be achieved when decoding becomes automatic. In other words, a student is able to decode the print at the same time he or she comprehends it. Some researchers disagreed with automaticity; for instance, Moyer (1982) concluded that increased gains in reading fluency occur because repeated reading of entire passages minimized redundancy at all levels of the written language structure. Repetition of entire passages gives the poor reader the needed extra practice in using higher linguistic structure (contextual and syntactic cues) as well as experience in extracting grapho-phonemic word structure. In addition, Schreiber (1980) suggested that the success of repeated reading was not so much a matter of multiple practice of certain skills, but rather the discovery of various morphological and syntactical cues that readers must use in order for fluency to develop. According to Schreiber, this discovery comes about as a result of several repetitions of the same passage. Further more, Goodman (1970) argued that fluency or reading speed is gained when prior knowledge allows the reader to sample rather than fully analyze the printed words.

Reading Speed

One way of testing students' reading fluency is to measure their reading speed or rate of reading. Reading speed or reading rate is measured by timing the children's oral reading represented in words per minutes (WPM) for a test passage. In the unassisted repeated reading, the student repeats the short passage until the criterion is reached. Hence, the criterion being set prior to the actual reading is an important key of indicating students' fluency.

Acceptable oral reading rates being set for criterion may vary, but seem to fall within a range of 75 - 120 words per minute (WPM). For example, Samuels (1979) and Herman (1985) used 85 WPM as a criterion rate with older remedial students. Hoffman (1987a) used a 75 WPM criterion with primary children where as Dowhower (1987) and Erickson & Krajenta (1991) suggested from 90 to 100 WPM as an acceptance indicator of fluency for second graders. O'Shea et al. (1985) found that after repeated reading training, their third-grade students achieved 120 WPM. Criterion rates are also used to indicate whether the students can move to a new passage.

In Thailand, there is no criterion of reading rate for each grade in elementary level. However, the Ministry of Education (1983) suggested that reading rates fall within 120 - 150 WPM for sixth grade students. Three years later Yongyuth Yuengyong (1986) found that the sixth grade students in Chanthaburi province can read an average of 183 WPM for boys and 193 WPM for girls. Many researchers has agreed that girls can read faster than boys (see Thanarat Sirisawadi, 1980). Additionally, Sompong Kounkom (1986) found that Thai students who learn to read English as second language can read an average of 104 WPM.

Word Recognition

“Word recognition is the foundation for reading” (Gough, 1984). In order to read, readers must have ability to identify the printed words. As individuals progress through their grades, they become alike in accessing this finite ability. Singer and Donlan (1989) indicated that, word recognition tends to decrease as a predictor of reading achievement after the sixth grade for individual differences have decreased toward zero in this ability, unless speed of word recognition is computed.

“Word recognition is the comprehension of words as they serve to convey the ideas represented by clauses, sentences, paragraphs- the whole expression in which they occur” (Farr & Roser, 1979). Word recognition skill is behavior that should be learned through reading and not through isolated drill according to Farr and Roser. They also see that word recognition is one of the most important aspects of teaching reading. Teaching each behavior separately may not lead to their efficient application in reading. Fragmented drill may lead only to the mastery of isolated behaviors that have a limited effect on improving reading.

There are three broad classes of theory about word recognition, whole word recognition, letter-by-letter word recognition, and an intermediate position (Smith, 1988). In effect, these three approaches attempt to explain the manner in which a skilled reader is able to identify words on sight. They are the description of what a reader needs to know and do in order to say what a word is.

The whole-word view based on the premise that readers do not stop to identify individual letters (or groups of letters) in the identification of a word. The theory proposes that knowledge of the alphabet and of the “sounds of letters” is irrelevant to reading.

The letter-by-letter theory views that readers are frequently sensitive to individual letters in the identification of words. For example, the whole-word point of view would suggest that if viewers were presented with the stimulus “*Fashixn*” tachistoscopically, they would either identify “the whole word” without noticing the “x”, or else fail to recognize the word at all because there would be no match with an internal representation. In stead, viewers typically identify the word but report that there is something wrong with it. They may not be able to identify the letter “o” in the place of “x”, but they see the misplaced “x”.

The intermediate position views that words are identified through the recognition of clusters of letters. This theory argues that readers become familiar with spelling patterns, such as “ve” and “rn” and even “vern”, which are recognized and put together to form words. according to this view The larger the spelling patterns one recognizes, the easier the word identification.

These three traditional approaches to word recognition rest on fairly solid foundation of data. Despite their shortcomings, no one can conclusively prove them wrong. Each approach, however, has inadequacies that are partly met by an alternative view, which would suggest that they are not individually exclusive and that no one of them has any real claim to be the closest representation of the truth (Smith, 1988).

Word recognition becomes an important way to improve students' fluency. Samuels (1979) has discussed how teachers can help students develop fluent reading skills. As Samuels viewed, the development of word recognition skill comprises three stages: nonaccurate stage, accurate stage, and automatic stage. The nonaccurate stage is when a student has great difficulty in recognizing words. The accuracy stage posits that the student is able to recognize printed words with accuracy but attention is required. In this stage, the oral reading of a student is rather slow and halting, without expression, and despite high word recognition accuracy, there may be poor comprehension. The automatic stage is when the student's oral reading is characterized by a rate which approximates or may even be faster than speaking rate. In this stage, the student reads with expression, and comprehension is improved. Only the final stage is considered reading fluency.

The assessment of word recognition may be divided into two groups (Spooner, 1983). First, an individual oral test, may be a test of “words in isolation”

or "sentence reading". The procedure is that the child reads individually aloud to the teacher or the tester. Sentence reading goes beyond the individual word in which it allows the child the benefit of words in context. In a typical oral test, the pupil reads a series of short sentences until he has made a certain number of errors. Second, group tests with written responses are, in fact, the same aspect of individual oral testing. The children indicate on their papers which of a group of five or six words corresponds to a picture of a word given in a sentence read by the teacher. This, of course, is not quite the same as reading an individual word aloud. Sometimes the right word, though unknown to the child, can be found by the elimination of alternatives, and as with all multiple choice tests, there will be the problem of the lucky guess. This problem will normally have been allowed for in the scoring procedure.

There are also some indirect ways of testing children's word recognition, word recognition error or word accuracy error (Samuels, 1979; Rashotte & Torgesen, 1985). Word accuracy error defined as the number of errors per passage and is recorded by a teacher or an assistant as the student reads the passage. Errors include mispronunciations, nonpronunciations (the subject pauses, but does not produce a response), omissions, insertions, line skipping, and substitutions. As a typical procedure, the observer records the student errors onto his diagnostic form and computes score the results later on.

Some researchers employed an errors detection task to measure word recognition error (e.g., Levy, Nicholls, and Kohen, 1993). In the work of Levy and others, the students read each text four times in succession, crossing out misspelled words as they read. The misspelled words consisted of non-word and word errors. The word and non-word errors were scattered across four versions of the same text; thus



while the reader became familiar with the text, the familiarity did not make the errors predictable. For this reason, errors detection provided a measure of how thoroughly the print was being read on each text exposure. The following example represented non-word and word errors (underlined) which were embedded in a story (Levy et al., 1993).

The Big Cleanup

“What a mass!” said Ryan’s mother. They were stanfing in the doorway of Ryan’s room. They looked at the flour covered with bits of this and that and other things. Ryan’s methet gathered everything into a pile. Then she game Ryan a box and a garbage bag. “Everything you don’t need, throw out. If thene is anything you must keep, put it in the box. Ryan sat down on the floor and pecked up a crayon from the tap of the pile. “Well, I certainly need this,” he said. He lettered on the box; To Keep. “A very uveful crayon,” he said, and he dropped it into the box. Next his hand closed on a thin piece of word. “This would be good for making a plane,” Ryan soid. He put it into the box. Ryan saw a piece of cloth in the pile. “This could make a flug,” he said and put it into the box. Ryan saw one olker skate and one ski.

He suddenly realized what he could do. “I’ll attach the skate to the ski. Then I’ll hare a roller ski!” So the shate and the ski went into the box. He also decided that he might be able to fix the broken flashlight, the cracted hairbrush and the split plastic damp truck. He placed them all in the box.

There was nothing left of the pile bit five old keys. “You can never tell when you’ll find a looked door,” said Ryan, and the keys

went into the box. Ryan's mother came in. "You mean you're keeping everything?" she sighed. Ryan nodded. He took the filled up box and put it in his closet.

Reading Comprehension

Reading comprehension is assumed to be the most important goal of reading; and it is a very important topic in the reading area (Fry, 1972). Fry stated that, "Reading comprehension involves the problem of meaning. What does the author mean? What does his writing mean to the reader?" Hence, reading comprehension is a process by which people who read derive meaning from written text and the meaning the author attempted to communicate (Glover, Ronning, & Bruning, 1990).

Farr and Roser (1979) stated that "Comprehension is an active mental process. It is not something that a reader has; rather, it is something that a reader does". They further pointed out that reading comprehension is neither as an innate ability nor as a set of skills (e.g. finding main ideas, selecting significant details, predicting, organizing, evaluating, and following directions) to be mastered. Thus, it is a teachers' responsibility to promote reading as an active process rather than mastery of a set of separate skills. As Farr and Roser's point of view, reading comprehension should be treated as a whole rather than separate parts. However, as Olson and Dillner (1976) pointed out, the process of reading comprehension is difficult to define clearly because it is influenced by many complex factors such as decoding ability, knowledge of vocabulary, familiarity with the concepts, and cognitive development. For the reader to understand more about the reading comprehension, the next section will be devoted to the models of reading comprehension.

Models of Reading Comprehension

Reading comprehension may be classified in three models according to how a reader processes information while reading, data-driven, conceptually driven, and interactive (Glover et al., 1990).

Data-Driven Model, which has also been called the bottom-up model, refers to processing guided basically by external stimuli. In essence, the model starts readers with the processing of letters and words in order to construct the meaning (Samuel, 1993). In this perspective, reading comprehension mainly refers to decoding processing. One distinct data-driven model was formulated by Gough (1972).

Gough's model emerged from his eye-tracking research. In his view, readers proceed "through a sentence, letter by letter, word by word". The reading processes begin with an eye fixation at the first segment of text, followed by a saccade (the length of eye movement), a second fixation, and so on through the text. Gough estimated that each fixation placed about 15 to 20 letters in the iconic store. Once the information was placed in the iconic store, pattern matching processes begin, moving one letter at a time from left to right. He posited that it would take about 10 to 20 msec. for the identification of each letter, and that information in the iconic store would last about .25 seconds, thus the readers could read about three fixations per second. On the basis of these assumptions, Gough estimated that reading rates of about 300 words per minute were possible.

Once pattern-matching processes on each letter were complete, the occurrence of a mapping response in which the representations of letters' sounds in a word were recalled and blended together to form the representation of the sound of the word. After that, the word meaning was retrieved from memory and the process repeated

with short-term memory. The meaning of entire sentences is determined, and if clear meaning has been achieved, the gist of the meaning passes on to long-term memory.

Conceptually Driven Model, the role of previous knowledge. Unlike the bottom-up model, conceptually driven models are based on the premise that readers' expectations about a material and their old knowledge of the subject matter determine the comprehension process. In this model, readers use the printed symbols on a page to construct meaning. Conceptually driven models have also been called top-down models. The well-known model that has strongly emphasized conceptually driven processing is Goodman's.

Goodman's model emerged from observation of children's errors in oral reading. In his initial research (see 1982a, 1982b), Goodman asked children to read stories aloud, and analyzed the kinds of mistakes children made. Based on his analysis of the mistakes, Goodman concluded that reading was governed by processes that led readers to predict the contents of later text. In addition, he believed that once readers were into a story, they used the text as a means of confirming or denying their predictions.

Goodman believes that four cycles of processing occur simultaneously and interactively; they are, optical (picking up the visual input), perceptual (identifying letters and words), syntactic (identifying the structure of text), and meaning (in which meaning is constructed for the input). Since a reader initiates the reading process, a meaning is constructed for the text, and is used for the prediction of the future input. If the prediction is confirmed, reading continues and the constructed meaning is enriched with new information. However, if the prediction is incorrect, the reader may slow down, reread, or seek additional information in order to allow for the construction of a more accurate meaning.

Interactive Models of Reading. In this model, reading is an interaction between external sources of information, which come from the words on the page, and internal sources of information, which come from the old knowledge of the reader (Samuels, 1993). One of the interactive models that had led to considerable research and applied interest is that of Just and Carpenter (1987).

Just and Carpenter proposed the processes at the level of pattern matching, working memory, and long-term memory. These processes are not sequential; rather, they are highly interactive. Reading comprehension begins at the first fixation, at which visual stimuli enter the iconic store. Unlike Gough, who argued for a fixed number of letters in iconic store, Just and Carpenter suggest that the amount of input depends on several individual differences—reading ability, knowledge of the content area being read out, and the reader's purpose. Assigning meaning to a word, of course, depends on the extraction of physical features, the reader's long-term memory for words, and the reader's memory of the meaning constructed for the current passage.

The Just and Carpenter model strikes a balance between data-driven and conceptually driven processes. Similar to Gough, a series of relatively automatic processes based on the input are described. However, each of these processes each are interactive with the reader's constructed meaning and general knowledge. Similar to Goodman, there is emphasis on predictions (predicting the meaning of a passage based on memory for what stories are like, predicting word meanings based on their context), but these are tempered by continuous decisions based on the interaction of input and reading knowledge.

Types of Comprehension

There are two types of comprehension which are usually assessed by reading achievement tests, literal and implicit inferential comprehension (Singer & Donlan, 1989). Literal comprehension only require recall or recognition of information directly stated in the text. Implicit inferential comprehension requires readers to make a deduction from major and minor premises stated in the text. For example, a text might state that "All men die". "Aristotle is a man". The reader would infer that "Aristotle is dead".

Reading comprehension can be classified in several subskills. For example, in Barrett's taxonomy (Spooner, 1983), reading comprehension skills are subdivided into three categories:

1. Reading the lines: literal or explicit comprehension. The child can answer simple, direct questions by reference to the text as it stands.
2. Reading between the lines: interpretive or implicit comprehension. This involves the ability to make inferences not directly stated in the text, but implicit in it. It may involve features such as predicting what will happen next or why someone behaved as they did, when these are not immediately apparent from the material.
3. Reading beyond the lines: evaluation and appreciation. By this stage, the child can judge the appropriateness of a text for its purpose, distinguish emotive propaganda from fact and reason, and is developing a personal taste in his reading activities.

Reading Levels

Spooner (1983) described the reading level as:

1. Independent level: The children need little help; the material is easy for them, so they can consolidate their already learned skills.

2. Instruction level: The children can benefit from instruction by the teacher. They can manage for much of the time, but need some help.

3. Frustration level: Useless to the children; they can do little with it and it is largely wasting their time.

It is possible to estimate the student's reading level and capacity. Using the informal reading inventory (IRI) (Margaret, JoAnne, Joyce, and Janet, 1996), a reading teacher can determine the student's independent, instructional, and frustration reading levels. The instructional level is determined by comparing the student's reading level with the level at which the student should be reading. For example, if a student's IRI instructional level is third grade, but he is in a fifth-grade class, he would be have a reading problem.

The level of an orally read passage is based upon (a) the word recognition accuracy score for the passage (b) the comprehension score. The level of a silently read passage is based upon the comprehension score. Margaret et al., (1996) suggest the criteria for the different IRI levels as in Table 1.

Table 1

IRI Passage Criteria for Three Reading Levels

Reading Level	Word Recognition (%)		Comprehension (%)
Independent	98 - 100	and	90 - 100
Instructional	95 - 98	and	70 - 89
Frustration	Less than 95	or	Less than 70

Reading Comprehension with Repeated Reading

According to Samuels' (1979) point of view, comprehension may be poor with the first reading of a material. But with each additional repeating a student is better able to comprehend the material because the decoding barrier is gradually overcome. With beginning reader, much attention is required for decoding processing particularly with the first reading, but it is less required in the later rereading; therefore, attention becomes available for comprehension. For a fluent reader, decoding and comprehension are processed at the same time, in which decoding processing is automatic; thus, attention is fully available for comprehension. For these reasons, repeated reading facilitates both fluency and enhances comprehension. Samuels has suggested that to build up more comprehension, different questions can be asked of the student at each rereading of the story.

There are a number of studies indicating that repeated reading significantly increase comprehension (Koskinen, Gambrell, & Kapinus, 1989; Selvey, 1990). In addition, using repeated reading comprehension gained on old texts seems to carry over to new texts when the stories are at the same reading level, and when accuracy and speed have also increased. For example, Dowhower (1987) found that after reading a series of five practice stories written at the second-grade level, students had a comprehension increase of 66% to 88% on pretest and posttest of unpracticed passages. Morgan and Lyon (1979) found that junior high poor readers averaged 11.5 months progress in 6.25 months on a standardized comprehension test after 12-13 weeks of practice. However, a number of studies have reported that comprehension was not effected or could it be generalized by the method of repeated reading (e.g. Suter, 1992). Thus, comprehension needs further investigation in the method or repeated reading.

Individual Differences in Reading and Learning

A number of factors account for individual differences in reading achievement, particularly at the elementary level. Sex differences in language and reading are of primary interest to most teachers and researchers. Many of the studies reviewed found that more boys have reading problems than do girls. In the United States, at the elementary level, boys achieve in reading below girls, on average (see Singer & Donlan, 1989, in the literature review). Girls had better comprehension than boys (Walaiporn Artidtieng, 1986). The reading efficiency of the girls was higher than the boys (Yongyuth Yuenyong, 1986).

A number of explanations have been given to this phenomenon. One theory is that most teachers in the primary level are women, so girls may identify with a female role, but the boys have no such model with a male to identify. However, Singer and Donlan (1989) suggest that, under conditions where boys and girls are given equal instruction, their rates of learning to read do not differ significantly. Another one is that many adults consider reading to be a feminine activity because it does not entail physical movement while boys are assumed to prefer physical activity. Still another reason posited is that the content in many basal readers hold little interest for boys.

The culture may also account for individual differences in reading achievement. Students who learn to read in environments where their peers are also engaged in reading, have parents who expect, foster and promote reading, are likely to read more than those students whose parents do not (Singer & Donlan, 1989). Kriksak Boonyanupong (1987) found significant relationship between the students' need for higher education and race and their scores after they had finished Mathayom Suksa three. The Hmong students saw a greater need for higher education than other tribe students because they have more experience in contacting people in the city.

That probably resulted in promoting their expectation to achieve the highest education.

For good and poor readers, much of the literature suggests that differences in intelligence and in short term memory can account for much of the differences (Rayner & Pollatsek, 1989). Other things being equal, someone with an IQ score of 120 will be a better reader than someone with an IQ score of 90. Perfetti (1985) has concluded that when IQ differences are taken into account, differences in short term memory processing can account for much of the difference between good and poor readers.

Part II

Self-Directed Behavior

Definition

The term self-directed behavior is related to self-direction. To understand the deep meaning of self-directed behavior, the self-direction concept must be determined. According to the dictionary of psychology (Reber, 1985), self-direction means "a rough synonym of self-determination but used more neutrally. That is, this term does not invite the theoretical disputes that underlie the connotations of its approximate synonym" (p. 678). In philosophy, free will and determination have been pungently debated since the beginning and even continue today (Wit Witthawet, 1993)

Self-direction has been applied to explain various kinds of phenomena. However, when used in behavioral perspective, self-direction means that people have the ability of self-control, that is, their behaviors are under their control. In other

the ability of self-control, that is, their behaviors are under their control. In other words, when it is needed to change, they can (Watson & Tharp, 1985). For example, people need to change their responses to goals, in order to adapt to the changing environment. They can do that by themselves. In essence, self-direction includes choosing goals and designing strategies to meet them, evaluating outcomes, changing tactics when needed, and solidifying new gain. Self-direction, thus, is the combination of skills by which goals are achieved. When people implement their acts to meet the goals, they are engaged in self-directed behavior. In this sense, self-directed behavior refers to any action people select and perform by themselves in order to achieve their own goals.

Self-direction is a skill because people are able to do and change what they want to change; that is, they are able to regulate a particular behavior (or goal) in a definite situation. Sometimes the goal is to stop behaving in a particular way. For example, a person's goal is to stop being nervous when taking tests because being so always interferes with that person's performance. Sometimes the person's goal is to start behaving in a certain way, for example, increasing the behavior of studying in the library, in one room, or with someone. According to Watson & Tharp (1985), it is really possible to learn self-direction and perform self-directed behavior because people can increase the control over ones own behavior and ones own life. Watson and Tharp stated that "Obviously, you can not control all the events in your life. We are all limited by lack of talent, ... But within broad limits you can direct yourself toward your chosen goals, and change when you want to" (p.4). There are a variety of techniques related to self-directed behavior (see Sompoch Iamsupasit, 1993) such as self-change, self-management, self-regulation, and self-administered behavior therapy. These techniques, although, different in their terminology and method are

similar in that a person is responsible for modifying his or her own behavior. In fact, it involves selecting goals and appropriate strategies leading to specific goals.

Background

Self-directed behavior has a long and diverse history of theoretical and empirical interest in its nature and existence (Schutz, 1991). Self-directed behavior has been discussed in many fields of interest, such as, biology and physiology, physics, psychology, and educational psychology (see Schutz, 1991). Although the fields are different, theorists describe that self-directed behavior regulates in the same way. For example, the theorists discussed goals and goal setting in self-directed behavior. Goals, therefore, are one of the important keys to explanations of the directionality of behavior. Before going to other topics, the nature of humans in which goals and standards in self-directed behavior occur should be mentioned.

The Nature of Human System

In his review, Schutz (1991) has noted one critical characteristic of the human system related to goals and standards. The human system has a tendency to show what may seem, on the surface, to be two different and relative contradictory processes of being and becoming.

Being processes are involved in maintaining and/or structuring the system. For example, in our body, over 1 week, hundreds and thousands of cells die and are replaced by other similar cells; yet, at the end of that week, we look pretty much the same. The regulation of skin layers, hair, and nail are other being process examples. Thus, in an organic system, there are processes of maintaining its basic organization by which material, energy, and information, are continuously exchanged.

Becoming processes are involved in a continued emergent growing and developing of the system into a new condition of irreversible change. Thus, at the end of that week, even though the people may appear to look and act the same, their experiences and processes that occurred during that week have resulted in irreversible change. For example, a 1-year-old child growing into a 70-year-old adult man. This change is irreversible; that is, the old man can not reverse to the former child any more. In this sense, becoming processes can be considered as changing goals, whereas being processes can be considered as standards.

The purposes of being and becoming in the human system are to develop and maintain a dynamic equilibrium (see Schutz, 1991). The human system can maintain its dynamic equilibrium by an exchange of matter, energy, and information within an environment. This continuing exchange provides what is needed for maintaining the system's basic organization, and also provides potential for emergent growth, development, and irreversible changes at the same time. Thus, living systems can exist by a continuing exchange of matter, energy, and information, for maintaining the dynamic equilibrium within the environment.

The theories that deal with self-directed behavior or goals, in general, discuss both being and becoming processes either implicit or explicit. For example, learning goals (becoming), are those in which individuals seek to increase their competence, to understand or master something new. Performance goals (being) are those in which individuals seek to gain well adjustments of their competence (Dweck, 1986; Dweck & Leggett, 1988). Ability goals (being) are goals in which individuals show a concern with being judged able and confident in ability, and mastery goals (becoming) are goals in which individuals show an ability to develop new skills (Ames & Ames, 1984; Ames & Archer, 1988).

Some theories have tended to focus more on the being aspect of self-direction. Control theory, as developed by Carver & Scheier (1982b), is an extension into psychology of the body of thought known as self-regulation. A good example of self-regulation is the regulate of thermostat. A thermostat is a negative feedback loop that involves these three subprocesses: (a) a thermometer, to sense the actual temperature; (b) a goal, which is the temperature a person wants the room to be; and (c) a mechanism, to maintain the temperature within the goal range. Some processes in the human system, such as blood-sugar level, body temperature, and respiration, also work in a similar manner. Other theorists who developed cybernetic type models (e.g., Bandura, 1977, 1986; Zimmerman, 1989) tend to focus on regulation that is directed toward equilibrium or homeostasis. These theories tend to focus on the regulation involving maintenance in certain outcome situations rather than growth, development, and change.

Goals and standards referring to becoming and being emerge from the interaction of many factors that may fall into one of two general categories: (a) hereditary or evolutionary species specific influences; and (b) environmental and personal influences, such as the physical environment, the self, family, culture, and other cultures (see Schutz, 1991). The evolutionary influences involve personal genetic factors and life cycle processes, such as growth, puberty, maturity, and physical decline. The environmental and personal influences include personal experiences, values, needs and beliefs as well as cultural experience, values, needs, and beliefs as factors that interact in the emergent development of goals.

The dynamic interplay of both the hereditary and the environmental and personal influences results in a development of goals and standards that emerge over the course of one's life. Throughout the course of one's life, new goals and standards

can emerge that have the potential to replace existing goals and standards in terms of their importance and priority in the person's life. For example, a goal for getting a Ph.D. may give way to goals for higher position and being accepted.

Goals in Self-directed Behavior

The purpose of this section is to present goals related in personal adjustment or self-modification discussed by Watson & Tharp (1985).

According to Watson and Tharp, when dealing with any problem or a goal, a person must have well-defined objectives that are specified in terms of particular behaviors in particular situations. They have suggested eight tactics to specify goals clearly:

Tactic one: Make a list of concrete examples. Giving a concrete example of the problem will decrease the vague statement. However, the person should be specific as to the behavior and the situation in which the behavior occurs. For example, "I talk about myself too much when I'm with my friends" or "I can't read fast when I am exposed to a new text".

Tactic two: List the details of the problem. Research in problem solving suggests that people who list details increase their problem solving ability compared with those who do not (NeZu, & D'Surilla, 1981). This tactic involves making a list of the relevant details and selecting lists that seem important to the solution of the problem. Listing the details helps individuals to see clearly what their target goal should be.

Tactic three: Become an observer of oneself. Watson and Tharp (1985) have stated that "A critical step in specifying the problem is to stop speculating about your

behavior and start actually observing it” (p.28). People thoughts concerning their problem will probably remain vague unless they actually observe themselves acting in various situations.

In observing the behavior, the person should keep note of one’s own behavior. For example, keep narrative accounts of one’s daily life then note instances of behavior related to the problem. The best way to make these observations is to write down the list of behaviors and the situations in which they occur as soon as possible.

Tactic four: The strategy should always be increase some desirable behaviors. This tactic is very useful to create a satisfying behavior. Even if the problem is that not to do something, the person should specify one problem in term of a desirable alternative behavior. For example, a student have been recorded that he talk too much to his friend when he went to the library. In this case, he could have the desirable behavior, studying. Thus, his alternative plan would not to be decrease directly the undesirable behavior, talking too much, in stead, to increase the desirable behavior of studying when being in the library. One of the techniques that can be used as alternative behavior is incompatible behaviors (see Sompoch Iamsupasit, 1993).

Tactic five: Specify the chain of events that will produce personal goal. In general, what happen to people is a series of events. The chain of behaviors, either behaviors of oneself or of other people, once set in motion lead unyielding to an end. When designing a plan for self-change, therefore, people will often involve in specifying not only the target behavior, but also the change of behavior that would produce it. For example, the person goal is to study at night. The chain of events might enable this person to reach the goals are: do not watch TV, do not talk too much to anyone else, stay in one room and study, and so on.

Tactic six: Observe people who do well what the person is trying to do.

When the person do not know what the chain of events that would lead to goal, just observe other people do would be helpful. There are two ways of getting other people performance. First, observe directly other people do the behavior that one want to do. Second, if the person can not observe people do the desirable behavior, just ask them for advice. Remember that what an observer wants to know from other people is the particular behaviors and the chain of events that lead to the goal.

Tactic seven: Think of alternative solutions. In fact, there are several alternative solutions to a problem. People can select one or more alternatives to execute. There may be several ways to find alternative solutions, for example, make lists of solutions, or using a technique called brainstorming.

Tactic eight: Even if the goal is not a specific behavior, reaching that goal will require changing certain behavior. Some goals such as slimness, being healthy, and critical thinking, are not behaviors. However, to achieve these goals, people have to develop the necessary behaviors. For example, to be a slim person, people would engage in behaviors opposite to those that contribute to the problem of overweight, eating smaller dishes, exercising regularly, and so on. Watson & Tharp (1985) have suggested that, in order to reach a nonbehavioral goal, people must change their behavior. That is, people need to eliminate some old behaviors or habits that give rise to the problem and build new ones that help them to reach the goal.

The Evolution of Goals

As stated earlier, goals are dynamic interdependent and multilevel, and emerge over the course of one's life. At one point in time, a goal can be viewed as a whole or as an individual unit; at a different level and time, that goal is also a part of

subgoals of a larger goal. For example, at one level, a person's academic goal of getting a degree is a whole in itself; at another level, the person's academic desire may be only part of his identity in the overall social context.

When encountering a problem, people always engage in their thoughts or actions that will not interfere with their well-being. They may go through a series of self-discoveries. For example, a woman may discover a real cause of her depression; which she first believed came from her husband. After three weeks of self-observation, recording, and analyzing her records, she sees that her husband is not a major cause of the problem. It is her low self-concept. She always has negative thinking about herself; such as she is not smart, or low of intelligence. From her analyzing records, she realizes that she often compares herself with people who are superior, and she feels bad because she can not be like those people. People who go through a series of successive approximations have been reported gaining higher skill, self-efficacy, and intrinsic interest in problem solving tasks (Bandura & Schunk, 1981); succeeding in self-change, and often changing the target of their self-change efforts several times (Watson & Tharp, 1985). For example, people who want to be an expert writer might start off with the goal of reading the good works of well-known writers, learning to write a simple story, and developing their skill in the subtle writing. As they learn more about how to write effectively, they might set new targets for themselves, for example, have someone read their written work or send the written work to some editors.

Living is adjusting. As people go through life, they take up new goals (becoming), and at the same time, they maintain some old ones as standards (being). They may also discard some goals. This same process applies to any life situation. By observing themselves, people will understand how and when they should change

their goals or standards, and what are the appropriate techniques for the changes. Complex goals, with several self-observations will help people specify their goals precisely. Watson & Tharp (1985) suggested that self-observation is the basic rule to get data about oneself, then develop specific goals to work on.

Some Techniques of Self-directed Behavior

There are a variety of techniques of self-directed behavior as has been mentioned. However, some important techniques or strategies which often are widely used in the self-changing process will be presented in this section. These techniques include self goal-setting, self-recording, and self-reinforcement.

1. Self Goal-Setting

Goals and self goal-settings are the most important components in self-directed behavior (Schutz, 1991), and are also an important element in the social learning theory (Bandura, 1977). The concept of goal setting falls within the broad domain of cognitive psychology and is consistent with recent trends such as cognitive behavior modification.

A goal is what an individual is trying to achieve; it is the object or target of an action (Locke & Latham, 1990). The effects of goals on behavior rely on their properties, specificity, proximity, and difficulty level (Schunk, 1990). Specific goals foster performances by an increasing amount of effort needed for success and enhancing self-satisfaction. Specifics goal promote self-efficacy because improvement is easy to evaluate.

According to Schunk (1990), proximal goals result in greater motivation than distant goals; because it is easier to gauge one's progress toward a proximal goal. In addition, perception of progress raises self-efficacy. Young children are usually

influenced by proximal goals ; because they do not represent long term goals in thought.

Goal difficulty, or the level of task proficiency required is assessed against a standard. It requires much effort on the part of learners to attain a goal. Assuming requisite skills, individuals expend greater effort to attain difficult goals than when standards are lower. Learners initially may doubt whether they can attain difficult goals, but working toward them builds self-efficacy.

A study of self goal-setting with learning-disabled sixth graders who received subtraction instruction and practice over a series of sessions revealed that self goal-setting led to the highest self-efficacy and subtraction performance. The self-set goal children judged confidence for attaining goals higher than the assigned-goal subjects (Schunk, 1985). Hom & Murphy (1985) had college students classified as high or low in achievement motivation to self-set goals or assigned-goal conditions. Self-set subjects decided the number of anagrams they could solve. Assigned-goal subjects were given comparable goals. Subjects evaluated their confidence for goal attainment, a measure analogous to self-efficacy. The study found the students high in achievement motivation performed equally well under the two goal conditions. Self-set goals enhanced the performances of students low in achievement motivation. No difference emerged in confidence, however, perhaps because of restricted variability in this measure.

2. Self-Recording

Recording is considered to be a critical step in behavioral observation. It provides the recorders with an understanding of a pattern of behavior which occurred over a period of time. The observation of a behavior or event over a period of time may be vague unless systematic observation and recording are employed. There are a

variety of ways of recording behavior, for instances, continuous recording, frequency recording, duration recording, latency recording, and time sampling (see Sompoch Iamsupakit, 1993). Recording can be done by oneself (self-recording) or by other observers. The next section will indicate some important techniques of self-recording.

2.1 Structured diary.

A structured diary is a record people keep of their behaviors. The record consists of the antecedents, and consequences of those behaviors. Unlike the diary in which people write down random thoughts or thoughts about the day, the diary entries are made in connection with one goal for change. The tactic is thinking of the behavior as imbed in a situation, with the antecedents before the behavior and the consequences after it. The record should be done as soon as the relevant behavior has occurred. Table 2 shows an example of a structured diary.

Table 2

An Example of Structured Diary

Antecedent (A)	Behavior (B)	Consequence (C)
08.00 P.M. I was about to read a book. Mali call me to watch the show on TV with her.	I went to see the show with my sister.	I watched TV about 30 minutes. I felt bored.
08.30 P.M. went back to my room. Picked up the book. Tot called me.	Talked to Tot 15 minutes.	We went to see a film together. I felt I wasted the time.
10.00 P.M. I sat in my room. I said to myself "Read the book now".	I read about 10 pages.	I went to sleep. I didn't understand the text.

2.2 Recording frequency.

Recording frequency is sometimes called event recording. It is the record of a number of target behaviors occurring within a time limited. The period of time used in observation and recording depends on the aspects of the behavior. Some behaviors take a short time to occur, for example, the hand raising of a student ask a question. Some behaviors take a long periods of time to occur such as the response of a shy student.

The easiest kind of record keeping is a simple count of how often people do something. Suda, for example, keeps a record of her reading speed; her record sheet appeared as in Table 3.

The easiest kind of record keeping is a simple count of how often people do something. Suda, for example, keeps a record of her reading speed; her record sheet appeared as in Table 3.

Table 3

An Example of Recording Frequency

Number of Words Per minute (WPM) of five passages				
Passa	1st reading	2nd reading	3rd reading	4th reading
Passage 1	50	55	66	70
Passage 2	55	58	63	71
Passage 3	60	65	77	80
Passage 4	70	77	79	82
Passage 5	75	78	85	90

Maintaining a strict count helps people often understand clearly how often they engage in the actual target behavior, instead of other behavior. In the recording above, Suda can learn how she progressed in each rereading; thus, she can make her later plans of reading by using the previous outcomes as her baselines.

3. Self-Reinforcement

Self-reinforcement is generally recognized as the element most integral to the self-directed behavior (Watson & Tharp, 1985). Self-reinforcement refers to the process by which individuals, in the relative absence of controlling influences regulated by others, increase and maintain their own behavior both by freely imposing certain contingencies for the self-administration of reinforcing stimuli, and by exhibiting full control over available reinforcers (Jones, Nelson, & Kazdin, 1977).

Actually, it is a question whether if people can actually self-administer rewards contingently, or in self-control terms, can people abstain from taking immediate rewards in favor of gaining long-term rewards? For example, Catania (1975) argued that it isn't really self-control, any more than refraining from shoplifting is self-control. If there were no external punishment for shoplifting (or taking the food), everyone would eventually walk out with whatever reinforcers they wanted. The argument tried to point out that there has to be some external reason to self-reinforce and to stick to the contingencies.

Numerous studies on the effectiveness of self-reinforcement procedures with children revealed that these procedures can produce effects equivalent to, or better than, those achieved when contingencies are externally administered. However, when deeply determined, children's control in these reports may not be as free of externally administered contingencies. In fact, externally imposed contingencies may be an important variable in children's self-management success (Gross &

Wojnilower, 1984). Speidel & Tharp (1980) indicated that children can be taught to accurately self-reward, but if the contingencies for accuracy are removed, the children will begin to take an inaccurately large amount of reward. They further pointed out that, for contingent self-rewarding to occur, there must be some external or longer-range reason present. When this meaningful reason is present, people will not “cheat” or take quick rewards.

There are several subtechniques of self-reinforcement. The following sections describe the two widely used subtechniques of self-reinforcement, tokens and verbal self-reinforcement.

3.1 Token Reinforcers. Token reinforcers are symbolic items that have value because of what they stand for or can be exchanged for real reinforcers (Spiegler & Guevremont, 1993). Money, for example, is a token reinforcer for it can be exchanged for valued goods and services. Other examples of token reinforcers include a good grade, gold stars, stickers, stamps, and credit cards.

Token reinforcers are useful when reinforcers can not be arranged to follow quickly after the behavior. Thus, the main function of tokens is to bridge the delay between the time when a person performs the desirable behavior and the time when he or she can receive the reinforcer.

Many people use a point system of token reinforcement to adjust their behavior. The performance of a desirable behavior earns a specified number of points, which can be exchanged for reinforcers later. The cost of reinforcement is specified in the point system contract. For example, 1 point for 30 minutes of TV watching, 2 points for 60 minutes, 3 points for seeing the movie, and 4 points for doing what one wants to do.

Token economy is a reinforcement system for motivating clients (for example, children in a classroom) to perform desirable behaviors. Children earn token reinforcers such as points for good behavior and lose token reinforcers for bad behavior. The token reinforcers are then exchanged for actual reinforcers called backup reinforcers. The token economy provides a detailed, explicit set of procedures for clients' earning and spending tokens. Token economies are more often used for groups of clients than for individuals (Spiegler & Guevremont, 1993).

3.2 Verbal Self-Reinforcement. Praise, in fact, is one of the basic methods of control in all society. Many people encourage behavior by praising. "Verbal reinforcement is only a technical term for praise and an acknowledgment that praise is a most powerful reinforcer" (Watson & Tharp, 1985).

The technique of using verbal self-reinforcement is merely to tell oneself, for example, "Good! I can do it". Such statement can be said covertly or loudly, but expressde it clearly, and certainly after each occurrence of desirable behaviors.

Self-praise is often omitted for two reasons according to Watson and Tharp (1985); that is, people may think it seems silly or absurd and bragging. However, that is not correct because bragging is an effort to get reinforcement from other, but self-reinforcement is a realistic recognition of accomplishment. It is not an attempt to get praise from other people, or it does not attempt to puff oneself up without reason.

Self-Directed Behavior and Repeated Reading

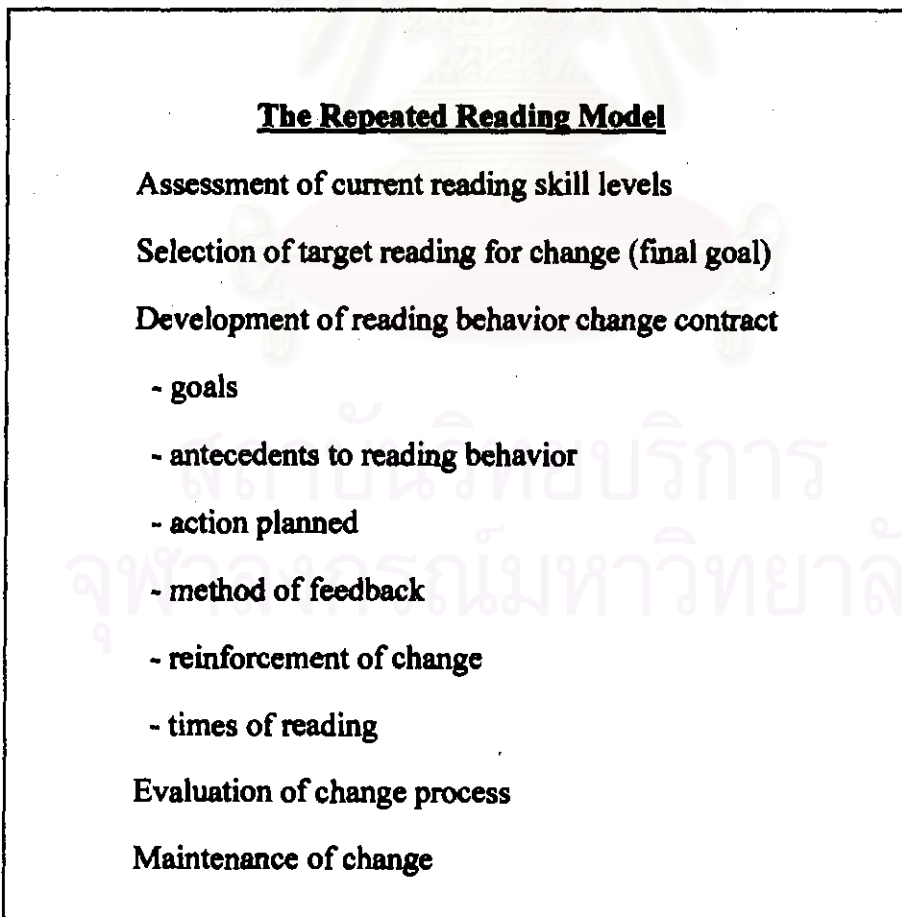
Reading is like any other behavior in which readers can perform by themselves. For example, a student can select an interesting book and reread either

aloud or silently to himself or to herself without any help from other people. In addition, when reading alone, the students can implement some techniques, such as self-questioning, self-reinforcement or using goal-setting techniques to specify their reading outcomes that may enhance their reading skills. Supporting themselves with those actions, the students are engaging in self-directed behavior.

The critical principles of self-directed behavior as outlined by Watson & Tharp (1985) may be applied to repeated reading models as in the following sections (see Figure 5).

Figure 5

The Diagram of Repeated Reading With Self-Directed Model



1. Assessment of Current Reading skill Levels

The current level is an important step for any self-changed process because it informs a person where he is related to where he wants to be. The current level of reading skills can be assessed in several ways. First, observing oneself, for example, recording how fast one can read a passage or how well one can answer comprehension questions from the read text. Second, assessing reading skills by using standard tests. Finally, having other people observe and evaluate that person's reading skills.

2. Selection of Target Reading for Change

The target of reading is the final goal or a standard to be achieved, and it is stated in terms of behavior. In repeated reading, the final goal may be reading at a criterion rate of reading; for example, the student can read 100 words per minute (WPM), or answer comprehension questions 80% correctly, or detect rapidly misspelled words. These targets are clear, specific, and attainable goals.

3. Development of Repeated Reading Change Contract

Contracting is a strategy used to implement behavior change. It identifies the desired behavior change and provides a systematic plan for reinforcing the behavior.

A written contract has the advantage of formalizing the commitment to the change and reinforces responsibility for follow through. The self-contract in Figure 6 includes specific goals, antecedents to the behavior, a plan of action to achieve the goal, methods of obtaining feedback, reinforcements to be used and time parameters for the project.

4. Goal Setting

Students first select a broad goal indicating the expected outcome, for example, to increase reading speed. Subgoals are then identified. Thus, the subgoals might be: Increase reading performance rate to 70 WPM at the second rereading, and at 75 WPM at the third rereading, and 80 WPM at the fourth rereading or at the final goal.

Goal-setting may be divided into two aspects: proximal goals and distant goals (Schunk, 1990). According to Schunk, proximal goals result in greater motivation than distant goals and they also are especially affective with young children who do not visualize distant outcomes in thought. However, distant goals led to higher increase of interest, perhaps because subjects viewed proximal goals setting as extrinsic pressure.

Figure 6

Reading Behavior Change Contract

<p><u>Reading Behavior Change Contract</u></p> <p>I,, have decided to commit myself to the following reading behavior change:</p> <p>My goal (or standard) is:</p> <p>My subgoals are:</p> <p>Number of rereadings I expect will be required to reach my goal:</p> <p>Antecedents to behavioral/baseline data:</p> <p>Plan of action and rules to follow:</p> <p>I will get feedback by:</p> <p>If I reach my subgoals I will reward myself by:</p> <p>If I reach my goal by the 4th reading, I will reward my self by:</p> <p style="text-align: center;">Signature</p> <p style="text-align: center;">Date</p>

5. Antecedents to Reading Behavior

Knowledge of the antecedent behavior is a vital basis in planning appropriate action for eliminating old patterns of behavior and establishing new. Understanding the predisposing factors leading to unwanted actions and feelings, and assists in planning the specific actions necessary to accomplish a change. This basic data also provides the information needed to evaluate the program at the end of the project. In the case of repeated reading, the prior recorded rate of reading, is the most effective way of obtaining the information necessary for evaluating the results of the next rate. Using a graph is a good example of recording students' reading outcomes-reading speed, number of words detected, or number of correct answers comprehended from questions.

6. Action Plan

Specific actions must be used for executing the plan. These actions often take the form of self-instruction. In repeated reading, the statements might include "Reading faster", "Look for misspelling while reading". It is important that such self-instructions must be very precise since generalized statements lack the specificity necessary for actions.

7. Method of Feedback

Any effective plan must incorporate a system for collecting information about progress made. The "feedback" must be compared with subgoals to determine how well the plan is working. Adjustment can then be made as necessary. For example, a student who observed he or she was not reaching his/her commitment to 70 WPM. in the second rereading might adjust his rate to 65 WPM. in the third rereading.

Each student in this model has to use self-recording as an important technique of providing feedback. Other sources of providing feedback may input from other people.

8. Reinforcement of Change

Reinforcers strengthen behavior and must be a part of a self-contract in order to effectively achieve behavior change. Reinforcers can be either positive or negative, but theories suggest that those of a positive nature are more effective.

Reinforcers in repeated reading may use a point system or other forms of token reinforcement. Points should be gained as soon as the preset reading criterion rate is achieved. They exchanged later for real reinforcers.

Self-reinforcement has shown to produce positive effects equivalent to, or better than, those achieved when contingencies are externally administered (O'Leary & Dubey, 1979). For example, simply verbal self-reinforcement, praising oneself, following desired behavior is an effective technique used by many in setting program. However, self-reinforcement or other self-control may be not as free of externally administered contingencies (Gross & Drabman, 1982). In fact, externally imposed contingencies may be a critical variable in successful self-management with children (O'Leary & Dubey, 1979).

9. Times of Reading

The contract must include the time parameter within the occurrence of change. In cases of repeated reading, the number of rereadings is necessarily to set for fluency or optimal comprehension. For example, one to five rereadings may be produced satisfactory gains.

for fluency or optimal comprehension. For example, one to five rereadings may be produced satisfactory gains.

10. Evaluation of Change Process

The evaluation can be done at the end of the practice, and It may be that the greatest learning occurs at that time when the students reflect on the practiced process. They analyze the outcome at each text exposure, obstacles encountered, the effective of self-reinforcers, and what they will do later in planning for reading behavior change.

11. Maintaining the Behavior Change

A follow-up study should be included in the project to evaluate reading change, and the continuation of repeated reading method that students use for improving their reading skills. This is part of the experimenter's commitment to survey the progress of students' reading behavior. The follow-up may be taken as long as 6 months after the termination of the project.

The results may show how many students are still effectively maintain the reading changes, how the students feel after they read a text more than one time, or what are the students' attitudes on repeated reading.

In conclusion, self-directed behavior occurs in our daily life either in an explicit or implicit manner. It involves a variety of techniques which people implement to achieve their own goals. Thus goals and goal-setting are considered to be the critical component of self-directed behavior.