CHAPTER ONE
Reading Comprehension: Theory and Practice
1. Reading and Comprehension

The traditional view held towards reading is that it is a two-component process: decoding and comprehension. Decoding is the visual analysis of the printed word, and comprehension is deriving the meaning from the decoded words. Many researchers proposed a third component, that is metacognition. Casanave (1988: 283),\(^1\) (cited in Davis (1988:615), suggested that metacognition is “the ongoing activity of evaluating and regulating one’s understanding of written (or spoken) text”.

Goodman (1988) views reading as a psycholinguistic guessing game. Meaning does not come from the printed letters alone. It involves an interaction between thought and language. Readers, while reading, hypothesise ideas, guess and predict what will come next, then they test and check those predictions. Smith (1973)\(^2\) (cited in Kiato and Kiato, 1995) holds a similar view. Smith claims that reading is not the passive reception of meaning from the text. It is an active process; it makes use of the interaction between the reader’s knowledge and the text. This

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\(^1\) N.B.: Where citations are taken whether quotations or referencing, the cited reference is listed fully in the References, and the reference details of the original work are given in the footnotes. This is simply because we could not get access to the original.


knowledge includes grammar, syntax, semantics and the world in general. The prevailing view is that reading is an interactive process involving both knowledge of the world and knowledge of the language, where they coordinate and interact to contribute the comprehension of the text (Williams and Moran, 1989). Thus, comprehension is affected by the reader’s background, purpose and strategy, as for example, questioning the text truthfulness.

2. Reading

The reading process is quite complex. It involves many elements simultaneously. First, there is the perception of the elements of the code, whether these elements are alphabetical letters, or symbols and signs. The reader should have the ability to discriminate among them. Then, the reader should be able to decode these various elements according to the original code and the language writing system. The reader should know the meanings of the vocabulary and the relations of the words, normally these relations become much clearer and more meaningful in their positions and functions in the sentence. That is, the reader should have an innate syntactic structure of the language of the original code. After that, there comes the association of the world to the meanings of these elements. Finally, the reader should hold together these meanings and their outcomes.
in order to get the significant meaning intended by the writer. I used the word ‘outcomes’ here to imply what is widely known as ‘reading between the lines’, or more precisely the total comprehension, or text interpretation.

These elements interact in a parallel processing, and therefore not necessarily in the same ‘logical’ view expressed above. Currently, the widely-held view divides this processing into two types. Top-down processing, in which general predictions are made about the situation and checked against the incoming information. Bottom-up processing, which occurs when the reader perceives the incoming data first, and then makes inferences about the general situation. Advanced readers implement both processes, nearly automatically and almost simultaneously. Generally speaking, native speakers tend to be top-down processors, whereas foreign and second language readers tend to be bottom-up processors. These models are reported in some detail in section 3 below.

3. Reading Models

According to Urquhart and Weir (1998), models of reading can be classified into two major classes: The process models and componential models. Compositional models describe what factors are involved in the
reading activity, whereas process models try to describe how factors operate and interact during reading.  

3.1 Process Models

Most of the literature on reading refers to the bottom-up, top-down, and the interactive processes. This is how it seems that these different approaches emerged. We will take them in turn in order to give a comprehensive background on the field of our study, i.e. reading and comprehension.

The Bottom-up approach: The most popular is that of Gough's (1972) in which the reader starts with the small units of the text, that is, letters. These letters are recognised by scanner. After that comes the transfer of the information to a decoder, which converts these letters into systematic phonemes. This string of phonemes is thus passed to the Librarian, with the help of the lexicon, it is recognised as a word. Now the word can be uttered (as it is the case in reading aloud). Then the reader fixates on the following word and continues processing words in the same way to the end of the sentence. Finally, they proceed to a component called Merlin, in which syntactic and semantic rules assign a meaning to the sentence.

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3 Since Urquhart & Weir (1998) covered this area comprehensively, I will follow their classification as a model to begin with, but I don't intend to stick precisely to what they have written. I will refer to the original work where necessary and once accessible.
Top-down Approach: The term ‘top-down’ implies the opposite of the term ‘bottom-up’. In reality it does not exist. We do not begin by looking at the whole text down to the sentence and then down to the letter: It is argued that “the term is used to refer to approaches in which the expectations of the reader play a crucial, even dominant, role in the processing of the text” (Urquhart and Weir, 1998, p.42). The reader comes with hypotheses, then reads and verifies his hypotheses; checks and tests his guessing (Goodman 1967). The top-down approaches are usually associated with Goodman (1967) and Smith (1971, 1973).

Interactive Approach: If in the bottom-up model the process of reading is thought to be sequential, in the interactive model it is simultaneous, in the sense that all patterns and elements from different sources interact simultaneously to synthesize comprehension. Interactive approaches are accredited to two authors: Rumelhart (1977) and Stanovich (1980). Urquhart and Weir (1998, p.45) provide a summary of Rumelhart’s model: “... once a Feature Extraction Device has operated on the individual Information Store, it passes the data to a Pattern Synthesizer which receives input from Syntactical, Semantic, Lexical and Orthographic Knowledge, all potentially operating at the same point”.

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3.2 Componential models

The process models try to describe the actual reading process, how it really occurs and comes to existence. The componential models, on the other hand, do not try to describe the process, but they tell us which components are involved in the reading process. They in fact provide us with a description of which skills, namely word recognition and knowledge are thought to influence the reading ability rather than the reading process. We briefly discuss these models in the following paragraphs.

The Two-Component Approach: This model was first introduced by Hoover and Tummer (1993), to which they refer as 'the simple view'. It consists of two components: word recognition and linguistic comprehension. They claim that Fries (1963) and others share the same view.

Hoover and Tummer (1993) provide evidence to 'prove' that these two variables are separable. The strongest evidence is that L1 illiterates understand language but they cannot decode. Dyslexics are linguistically competent, but they are deficient decoders on the other hand. Children suffering from hyperlexia show having high decoding skills, but they generally show low linguistic comprehension. Finally, longitudinal studies of correlation between decoding and comprehension show that correlation
between these two variables is low in the early stages of learning but becomes steadily high as the children advance in the early stages of learning.

The Three-Component Approach: Coady (1979) and Bernhardt (1991)\(^4\) described L2 reading as consisting of three variables. For Coady, these variables are Conceptual Abilities, Process Strategies and Background Knowledge. Conceptual abilities are similar to intellectual capacity, which might explain the failure of foreign students to achieve the competence necessary for university instruction, not because they cannot learn English. Background knowledge is what we all know about it, but for Coady, it is not an addition to comprehension, it is a component of it. Process strategies mean both knowledge of the language system and the ability to use this knowledge. Urquhart and Weir (1998) point out that Coady's model is lacking an important component which is found in Hoover and Tummer's (1993) model: "The only acknowledgement Coady makes of this is to include phoneme/grapheme correspondences as part of the process strategies component" (p.50).

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A Model for Reading based on Urquhart & Weir (1998)
Bernhardt's model also consists of three variables: *Language*, *Literacy* and *World Knowledge*. World knowledge equals background knowledge. Language includes those elements perceived from the text such as word structure, word meaning, syntax and morphology. Like Coady in this component, she lacks a separate word-recognition component. "Literacy equals operational knowledge: knowing how to approach text, knowing why one approaches it and what to do with it" *(op.cit., p.50).* Thus, we have five types of approaches to reading and how it is viewed. Indeed, they are all important in understanding reading comprehension. Unless we know the components of reading, we may not be able to understand how the reading process operates.

A model that was created by Just and Carpenter (1987) and expanded by Urquhart and Weir (1998) is given on the following page. This model is the most comprehensive of many models proposed earlier. It integrates both *process* and *componential* types of models. It shows how they complement each other, and how interaction and coordination between different elements of ‘reading and comprehension’ are achieved through the *monitor*. In this model, the monitor is central and it seemingly represents the mental consciousness and strategies awareness, as we would prefer to call it.
4. Comprehension

There are certain factors necessary for comprehension. As Sanford (1971) claims that these factors may fall into two categories: those which are related to the characteristics of the reader, and those relating to the material which is being read. In 4.1 and 4.2 below we present some of the most important factors pertaining to the two categories.

4.1 Characteristics of the reader

a) *Adequately functioning perception and cognitive skills.* Perceptive skills are seeing and hearing: Seeing the letters, decoding them and uttering them (normally when one learns to read, but it seems – presumably – that most people preserve this method for the rest of their life, so that vocalisation is fully established and fossilised). However, eyesight can be substituted by touch in the case of blind people. Cognitive skills, on the other hand, are necessary “to bring about comprehension, primarily the mental abilities to remember, relate either by analogy or by inference, and to classify and distinguish” (*ibid.*, p.373).

b) *Knowledge of the code of writing.* If we take the case of Arabic and Persian as an example, we may well clarify this point further. A literate Arabic reader can ‘read’ (decode) a Persian text quite easily, but with very little understanding: this kind of ‘reading’ occurs because the script of the
two languages is the same; ‘little understanding’, because they share the same code, and due to the fact of the similarities in structure and vocabulary. The absence of “more” understanding is mainly attributed to lexis and semantic relations between words and structures. Therefore, decoding is not reading; it is a part of it.

c) Prior experience. A person has to bring some background knowledge and past experience to the reading act in order to make sense of the material being read. This point is discussed thoroughly in Schemata, section 6 below.

d) Motivation, purpose, interest: These are essential ingredients to successful comprehension. It can be stressed that if interest is absent, comprehension can be low; Sanford goes further to say that "even when the material is easy in terms of vocabulary and structure it will remain incomprehensible to the reader who is not interested" (op.cit., p.375). However, we should strongly claim that it is purpose which outweighs both motivation and interest. One is forced to read in order to achieve one’s purpose. Purpose of reading could be to pass time, to get information and knowledge, to study and the like. Thus, motivation is created. Interest can be created by both the content of the material and the style of the writer.
4.2 Characteristics of the reading material

a) *Perceptibility:* This characteristic might be termed a concrete factor for the simple reason that it is concerned with the clarity of the written (or printed) word (or text). If the message is not perceived, it cannot be understood; if the message is partially obliterated, it becomes more difficult to comprehend. Moreover, the regularity of the letters' shape aids reading. Automacity and rapid reading is maintained due to paying less attention to the changing 'styles' and 'shapes' of the letters.

b) *Adequacy and completeness of coding systems:* All written codes make use of symbols and devices that either carry meaning (lexical) or show the relationship between these meaning-carrying symbols (grammatical). Example of the latter can be the prepositions *of* and *for.* This relationship becomes central in comprehension when we look at the two sentences below.

(1) *The boy hit the ball.*

(2) *The ball hit the boy.*

They signify two different meanings, because the lexical meaning of 'hit' is changing due to the grammatical/syntactic structure (word order in the sentence construction).
c) **Readability:** It was thought for years that readability can be determined by vocabulary (simple, complex, subject-specific, low or high frequency, short or long words, etc.) and the length and complexity of the sentences (mainly in terms of sentence and clause structure). However, a third linguistic feature can influence readability, and hence affect comprehension, that is the figurative meaning.

In some occasions, and that depends on the context of the sentence, a sentence (such as *He took the chair*), can be simple at a literal level (*He carried the chair away*), or at a figurative level (*He assumed leadership*). We will have more to say about readability in a separate section later in this chapter. Knowledge of text readability becomes important for selecting suitable material for teaching a certain level of language learners.

d) **Unstated meaning:** This characteristic is generally known as 'reading between the lines' or technically speaking, *inferencing*. It differs from readability in the sense that it deals with suggested meaning either at the sentence level or above, whereas readability deals particularly with linguistic/syntactic features of the text at large. According to Sanford:

> The writer's meaning ... is composed not only of the simple sense of the words, but of suggested meanings, purposes, attitudes, and organisation. Successful comprehension involves an effort by the reader to uncover these meanings and requires the ability to predict outcomes to envision the larger context within which the reading properly belongs, and to make comparisons and contrasts between what is written and what is not. In order to comprehend a passage, the reader must understand the main idea being presented, whether the idea is stated or implied (Sanford, 1971: 376-7).
5. Vocabulary and Text Readability

Readability refers to the combination of structural and lexical difficulty (Nuttal, 1982). It was first introduced to facilitate the selection of the right and suitable reading material (see Fry 1965). Fry argues that readability formulae, despite their faults, are more reliable than teachers' judgements, and that "the use of a readability formula is valuable only if the teacher knows the reading ability of the student" (ibid., 135). Fry's Readability Formula Chart is given in the Appendix.

1) Fry's Formula: Readability can be estimated as follows:

a) Select three hundred word passage from near the beginning, middle, and the end of the book.

b) Count the total number of sentences in each hundred words passage (to 0.1 of a sentence). Add these sentences together and divide by three.

c) Count the total number of syllables in each 100 words sample. Then, average the total number of syllables for the three samples.

d) Finally, plot the results on the graph to judge the difficulty of the book.

Suppose, for example, you selected two texts and followed the procedure above, then you got the following results:

(i) Average sentence per 100 words = 9.2, average syllables per 100 words = 126.
The first text is suitable for elementary level as interpreted according to the chart. The second text will be suitable for intermediate, since the text has longer words and longer sentences than the first one.

2) **SMOG Formula**: SMOG index was meant for L1 learners, but L2 teachers found it useful and similar to other readability measures. The formula can be computed as follows:

a) Choose three passages of ten sentences each from near the beginning, middle and end of the text.

b) Count all words of three or more syllables in the 30 sentences. The total is the *difficult words* (DW).

c) Calculate the square root of the difficult words (\(\sqrt{\text{DW}}\))

e) Add 3 to the square root; the total is the SMOG index.

It can be interpreted by first establishing the SMOG number that matches with the learners’ level. The teacher may choose a text from the teaching material and apply the four steps above. He or she will get the SMOG index. When selecting any text for his or her reading class, it can be compared to the original number to see its suitability. If the difference is

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5 It was first devised by G. McLaughlin (1969) 'SMOG grading - a new readability formula', *Journal of Reading*, No. 22 (pp.639-46). Here it is cited from Nuttal 1982, p.27. I have no idea to what the abbreviation SMOG stands for.
high, it is not suitable for the learners, they will find it slightly challenging their language ability.

3) The **Fog Index** is the third formula we would like to mention. The *Fog Index* formula is:

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\frac{\text{No. of words}}{\text{No. of sentences}} + \frac{\text{No. of 3-syllable words}}{\text{No. of words}} \times 100 \times 0.4 = 1
\]

The result is interpreted as: 12 and below is easy, 13-16 is good for undergraduates, 16+ is suitable for a postgraduate level. (See introduction in Alderson and Urquhart 1984, and Urquhart, 1984).

6. **Text Function and its Structure**

Learners’ knowledge of the text structure can be expanded to that of story, report, article or others. It will facilitate understanding and strengthen comprehension, as argued in most of the literature. Wallace (1986) and Yorkey (1970) can be good examples.

Yorkey provides the following functions of a paragraph. Recognizing paragraph patterns while reading a paragraph is usually about a single topic; a part of a larger subject, but still a self contained topic by itself. Although a paragraph may contain several ideas about the topic, there is
the dominating topic, main idea. This idea is usually stated in the topic sentence.

1. Paragraphs of Analysis: The topic of a paragraph is broken into causes, effects, reasons, methods, purposes or any other category. The main idea might be presented at the beginning, general-particular (deducting organisation) or might be presented at the end, particular-general (inductive organisation)

2. Paragraphs of Description: Usually paragraphs of description, as the name suggests, depict a person, a place or a thing, each of which has a structure of its own. When learners are made aware of these structures it will not only help them comprehend the text quickly, but an essential element in the improvement of their writing skills.

3. Paragraphs of Comparison and Contrast: A third type of paragraph pattern is one in which several things are compared or contrasted. Paragraphs of this kind express the main idea in the first sentence. Then, the idea is developed in subsequent sentences, often with examples.

4. Paragraphs of Analogy: A paragraph pattern which is organized around an analogy for the purpose of clarifying a particular point. There may be no topic sentence but the main idea is clearly implied by the analogy.
5. **Paragraphs of Definition:** The purpose here is to define, explain or clarify the meaning of something. Because of the nature of definition, it may involve analysis, comparison or contrast, description, or perhaps even analogy.

7. **Schemata and Background Knowledge**

As mentioned earlier in this chapter, a schema is one of the most important notions, which has been studied intensively by many researchers. We draw from different sources to give a summary of the main essential features of schemata.

A schema is an abstract structure representing concepts stored in memory. It is structured in the sense that it indicates relations among constituent concepts. It is abstract in the sense that one schema has the potential to cover a number of texts that differ in particulars. In some studies and particularly in discourse analysis, the term ‘script’ is interchangeably used to refer to the same thing. The role that background knowledge plays in comprehension has been formalised in schema theory.

Rumelhart (1980),

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A schema theory is basically theory about knowledge. It is a theory about how knowledge is represented and about how that representation facilitates the use of the knowledge in particular ways. According to schema theories, all knowledge is packaged into units. These units are the schemata. Embedded in these packages of knowledge is, in addition to the knowledge itself, information about how this knowledge is to be used.

A schema, then, is a data structure for representing the generic concepts stored in memory. There are schemata representing our knowledge about all concepts: those underlying objects, situations, events, sequences of events, actions, and sequences of actions. A schema contains, as part of its specification, the network of interrelations that is believed to normally hold among the constituents of the concept in question. A schemata theory embodies a prototype theory of meaning. That is, inasmuch as a schema underlying a concept stored in memory corresponds to the meaning of that concept, meanings are encoded in terms of the typical or normal situations or events that instantiated that concept.

Many studies in the field of reading comprehension in the early seventies revealed that the better a reader is able to access background knowledge about either the content area of a text or the rhetorical, formal structure of a text, the better that reader will be able to comprehend, store in long-term memory, and recall.

Most of these studies show that EFL readers read, understand, and remember better texts that deal with their own familiar culture, than they comprehend and understand texts that deal with unfamiliar culture. See for example Johnson, (1982). Steffensen, Joag-Dev and Anderson (1979) conducted an experiment on Indians and Americans. Subjects were requested to read two letters: one about an American wedding the other about an Indian marriage ceremony. Since American and Indian wedding ceremonies are quite different, subjects were supposed to have different schemata, which will affect both comprehension and recall.
In fact, subjects spent less time reading the ‘culturally familiar’ letter. It is hypothesised that they already had slots available in their schemata to match and easily assimilate the information in the letter. On the other hand, subjects spent more time reading the non-native and unfamiliar letter. They allowed themselves time to fit their schemata into the slots and information given in the letter in order to comprehend. Interestingly, subjects could recall more of the content of the ‘native and familiar’ letter, despite the fact that they spent lesser time in reading it than that of the other unfamiliar letter.

Functions of Schemata

Schemata are accessed and activated during comprehension and the role they play in comprehension is well established in literature. We now turn to list the functions schemata may serve, as argued in Wilson and Anderson (1986).

- A schema provides ideational scaffolding. A schema embodies structural organisation of the information it represents. Important text information fits into places called slots within the schema.

- A schema depicts allocation of attention. A schema can help a reader determine the important aspects of a text. Skilled readers may use their schemata to judge how important and how familiar information is, and
then they pay more attention to what is more important and less familiar.

- **A schema enables inferential elaboration.** As stated earlier somewhere that no text is completely explicit. Facts necessary to comprehension are often omitted. This leads to what is called “text ellipticalness”. The reader’s schema provides the basis for making inferences that go beyond the literally stated information to couple the meaning of the text, thus ensuring comprehension.

- **A schema allows orderly searches of memory.** A schema has slots for certain types of information. This can guide the reader to the kinds of information that needs to be recalled.

- **A schema facilitates editing and summarising.** A schema contains criteria for the relative importance of different information. A reader can draw on these criteria in order to compose summaries that include significant propositions and omit trivial ones.

- **A schema permits inferential reconstruction.** When there are gaps in memory for a text, the reader’s schema helps to generate hypotheses about the missing information.
Carell (1983), in her introductory statement for coherence, reports three components of background knowledge that affect comprehension. These are context, text transparency and familiarity which:

play a role in the way native speakers read, understand, and recall passages. Native speakers utilize context in a top-down processing mode to make cognitive predictions of what a text is going to be about as it is being read. Further, they utilize textual transparency clues, especially lexical clues, in a bottom-up processing mode to confirm those cognitive predictions and to build up a mental representation of what a text is about from the information in the text itself. Finally, they are influenced by their prior knowledge of the text's content — novel information appears to be more salient, more memorable, than familiar information, at least in short-term memory recall. (Carrell, 1983: 199).

Carrell also conducted a study to examine the role of the above three components in reading comprehension. The study was conducted on 48 native speakers of English, 66 advanced ESL learners and 42 High-Intermediate ESL learners. Regarding the difference between L1 and L2 learners/readers, she concluded that:

Non-native speakers of English, reading in English, don't read like native speakers; they do not process text as native speakers do. Neither advanced nor high-intermediate ESL readers appear to utilize context or textual clues. They are not efficient top-down processors, making appropriate predictions based on context, nor are they efficient bottom-up processors, building up a mental representation of the text based on the lexical information in the text. Only advanced ESL readers are affected by familiarity — the more novel the text, the more salient it is and the better recalled in short-term memory. In this respect, they are like native readers. (Carrell 1983: 199).

In a later study, Carrell (1984) listed ways in which a reader may not comprehend, or that miscomprehension may take place, due to ways that schemata interact with the text. These ways are:

- No schema: The text assumes background knowledge which the reader does not possess.
• **Naive schema:** insufficiently developed schema

• **Poor text:** not enough cues to be appropriate schema.

• **Multiple schemata appropriate:** more than one interpretation of the text possible, and the reader does not know which one to choose.

• **Schema intrusion:** it occurs when the reader chooses an inappropriate schema.

8. **Metacognition**

If schema has to do with content and meaning, metacognition is concerned with style of reading. They both involve the text and the reader. However, whereas the former tends to lean towards the text, the latter tends to depend on the reader’s cognition, and is influenced by his experiences and purpose, particularly when it comes to fast reading. We introduce the term metacognition here as the start of our discussion of reading strategies, which is, then, be followed by discussing reading skills.

In his review of Ruth Gardener’s *Metacognition and Reading Comprehension*,7 Davis (1988) provides a summary of the three aspects of metacognition which Gardner discussed. To quote Davis:

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Firstly, metacognition knowledge refers to what we know about the strategies we use to succeed in the tasks we are faced with daily. Knowledge about cognitive processes is a domain of knowledge not that different from what we might know about mathematics or history. Secondly, metacognitive experiences occur when we are aware of the success or failure of our cognitive processes. A common example of this kind of experience is a breakdown in comprehension when we are reading a conceptually difficult text. Thirdly, strategy use refers to the activation of our metacognitive and cognitive resources when we sense that we are not understanding. In the example of the difficult text, we may reread or find a simpler, less dense source for the same information” (Davis 1988, pp.616-617).

According to the definition above, we can say that metacognition involves the conscious interaction between the reader and the text and how the reader applies certain strategies in order to comprehend the text while reading. Readers become aware of their metacognitive activities when they consciously use certain problem-solving techniques so as to overcome their failure in understanding.

Metacognition here resembles reading strategies, as argued in this study. However, a distinction should be made. Metacognition does not allow for different styles of ‘reading’ according to purpose. ‘Reading strategies’ allows flexibility according to material, situation and purpose. They cannot be taught as easily as metacognition though. They require intensive and lengthy training through a carefully prepared program. They sometimes are automatic so that readers become unaware of their application. Despite all this, it is difficult to make a clear-cut distinction between ‘metacognition’ and ‘reading strategies’. Metacognition is a part of a broader category of reading strategies. Thus, metacognition may be said to be those reading
strategies applied by a reader either to overcome failure in understanding or to increase comprehension.

9. **Reading Strategies**

Reading strategies can refer to a monitoring system which involves self-reflection and awareness of what we know or need to know in a particular situation and what needs to be done if things go wrong, and what techniques to be used in order to achieve the highest and the best outcome (comprehension) of our reading of any text (Langer, 1982).

Barnett (1988, p.150) defines reading strategies as “the mental operations involved when readers approach a text effectively and make sense of what they read”. She refers to ‘reading strategies’ as ‘problem-solving techniques’ which include guessing word meanings from context and evaluating those guesses, recognising cognates and word families, skimming, scanning, reading for meaning, predicting, activating general knowledge, making inferences, following references, and separating main ideas from supporting details.

She classifies these strategies into two categories: text-level strategies and word-level strategies. *Text-level* strategies are those which the reader uses in trying to understand the whole passage (or text) or a part of it. *Word-level* strategies, on the other hand, involve words or phrases within sentence, such as guessing the meaning of unfamiliar words.
Interestingly not so much research has been done on reading strategies. Much of the research, which is indirectly relevant to our study, has been focused on the reading process. In studying the reading process the researcher tries to understand how readers comprehend the written language: from decoding the written symbols and structures, to the application of the background knowledge. Researchers found that good and bad readers differed on the basis of their use of different strategies.

From studying the reading process rather than analysing the reading comprehension product, researchers deducted the readers’ strategies in getting the meaning out from the text. We present here the results of Olshavsky’s (1977) study on reading strategies. She used the protocol analysis in getting the data. Her results were divided into three categories: word-related, clause-related, and story-related strategies.

- **Word:** Use of context to define a word, synonym substitution, stated failure to understand word

- **Clause:** Re-reading, inference, addition of information (using knowledge of world), personal identification (drawing on personal experience), hypothesis, stated failure to understand clause.

- **Story:** Use of information from story to solve a problem.

In 1987 a study conducted by Sarig followed, in which she used a similar technique to investigate the behaviour of Hebrew-speaking students
reading in English and in Hebrew. A ‘think-aloud’ technique was used.

The strategies she discussed and categorised were as follows:

- **Technical aid**: Skimming, scanning, skipping.

- **Coherence detecting**: Identification of macroframe, use of content schemata, identification of key information in text.

- **Clarification and simplification monitoring**: Syntactic simplification, using synonyms, change of planning, mistake correction, ongoing self-evaluation, controlled skipping, repeated reading.

The above two studies do not indicate the degree of influence on comprehension, nor do they show differences between good and poor readers. It is assumed that the frequency of strategy use is dependent on the situation’s demand, and that all types of readers may at a given situation apply one or the other of these strategies. Therefore, we would like to discuss the variables of reading strategies as well as the differences between good and poor readers in the following two sub-sections.

9.1 **Variables of Reading Strategies**

Metacognition in reading is expanded to involve the knowledge of four variables and how they interact to affect learning outcome: text, task, strategies, and learner characteristics. (Brown et.al., 1986).
**Texts:** The features of reading materials that influence comprehension and memory (for example, difficulty, clarity, structure). Readers' knowledge about the salient aspects of the material they read would influence their learning. To the above example can be added familiarity with the topic and vocabulary. Learners need to be sensitive to text difficulty, importance, contextual constraints, and to text structure. For text importance readers must be able to distinguish between central ideas in a text version those trivial ones. They need to be able to identify the main points of a passage.

Good readers "use context as much as possible in constructing a representation of text. they use context to make predictions about subsequent information and to organize words into higher order units" (Brown et.al 1986:52).

Mature readers are sensitive to various kinds of text structure and use this information to understand and remember what they are reading, e.g. a description of a process. Learners need to be trained to identify the text structure, since major text structures are standardized; but it depends on the writer's style to guide (or misguide) the reader. Teachers, in this respect, have to be selective.

Brown *et al.* (1986:54), who cite a number of studies to support their argument, assert that: "Although text features may affect learning in the absence of awareness, awareness of the role of text features in learning is
essential if the learner is to use the features consciously to enhance learning from text”.

**Task**: This variable is related to what is termed 'flexibility is reading'. The primary goal of reading is to understand the meaning of the content, not to decode the words of sentences. If meaning is not attended to, then learners will find difficulty in monitoring their strategies.

**Strategies**: Garner (1987) (See Davis 1988) suggests a number of guidelines for teaching reading comprehension strategies, that direct instruction should make it clear to the student that:

- Why learning the strategy is useful
  - What, explicitly, the strategy is
  - How to use it
  - When and where to use it
  - How to evaluate the use of the strategy

**Learner Characteristics**: This is concerned with the qualities an individual possesses. Individuals vary in their mental abilities, they differ in their knowledge and experiences; and they will not come to the same understanding of the texts, because of their reading purpose and background knowledge of the world.
9.2 Good Readers

According to Berg (1971), a good reader is one who:-

- has a purpose;
- can concentrate;
- comprehends what is read;
- remembers what was read;
- has good vocabulary; and
- can read rapidly, but with rate depending on the material.

Later, Hosenfeld (1984) found that good readers tend to use certain strategies in order to get the most of their reading. They tend to keep the meaning of the passage in mind, read in broad phrases, skip inessential words, have good self concepts as readers, examine illustrations, use the title for predictions, use orthographic information such as capitalization and punctuation.

9.3 Poor Readers

Bad reading habits can be due to many reasons. According to Berg (1971) it might be lack of effective practice with new techniques; there must be an attempt to change accompanied by meaningful and enough practice. In addition, one of the causes could be insufficient background on topics read,
which demands slow reading, as it is the case with scientific and technical material.

Swan (1975), in the introduction of his book *Inside Meaning* mentions some defective reading habits, which he claims can affect the right comprehension. And it can be said, too, that these habits are usually labelled with poor readers. These habits are summarized as follows:-

- That while reading the reader reads slowly, usually word by word looking for minor details which results in losing the overall meaning of the text.

- The reader reads fast but ignores some important details (even if small like negation or contrast) it becomes at times vital in getting the meaning value, otherwise the reader will have a false impression on the overall meaning.

- That there are "imaginative readers" who bring their experiences and emotions to the text, and this results in the difficulty of separating what they feel from what the writer says. In other words, in such cases subjectivity is imposed on the next.

Nonetheless, difficulty in reading is not only from the reader's ability to have good habits and effective strategies in tackling the text, but it is
usually created by the text as discussed under Text Readability in 4.2 above.

To sum up, the idea is to acquire good reading habits which save time and cover a wide range of material with little effort and better comprehension. This brings us to the speed of reading.

10. Fast Reading

Look at Table 1.1 below and compare the advantage the different categories have upon one another over time: starting by weeks and ending in years.

Table 1.1. Showing the benefit of increased speed in reading (we assume that a reader reads 1 hour a day, 7 days a week, books of an average length of 70,000 words). (Based on Fry 1965)

<table>
<thead>
<tr>
<th>Category</th>
<th>Speed</th>
<th>1 Week</th>
<th>1 Month</th>
<th>1 Year</th>
<th>5 Years</th>
<th>10 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very slow</td>
<td>100 wpm</td>
<td>60% of the book</td>
<td>2.6 books</td>
<td>31.2</td>
<td>156</td>
<td>312</td>
</tr>
<tr>
<td>Slow</td>
<td>150 wpm</td>
<td>90% of the book</td>
<td>3.9 book</td>
<td>46.8</td>
<td>234</td>
<td>468</td>
</tr>
<tr>
<td>Fair</td>
<td>200 wpm</td>
<td>1.2 books</td>
<td>5.2 book</td>
<td>62.4</td>
<td>312</td>
<td>624</td>
</tr>
<tr>
<td>Good</td>
<td>250 wpm</td>
<td>1.5 books</td>
<td>6.5 books</td>
<td>78</td>
<td>390</td>
<td>780</td>
</tr>
<tr>
<td>Fast</td>
<td>300 wpm</td>
<td>1.8 books</td>
<td>7.8 books</td>
<td>93.6</td>
<td>468</td>
<td>936</td>
</tr>
</tbody>
</table>

Once FL learners are trained to read between 150-200 wpm they can easily cover a book every week. This is promising indeed, as it is not their mother
tongue. And through time, once the skill of fast reading habit is established, they can reach the level of 250-300 wpm. It means that more material can be covered easily.

Fast reading is emphasised upon in many specialised books of reading comprehension. In this section we cover the main faults that cause slow reading, getting rid of which one will be able to improve one's speed. It should be noted, however, that reading speed *varies* according to purpose and material. This is usually referred to as flexibility in reading. Therefore, reading a newspaper will be faster than, say, an instruction manual or a text-book.

The most common faults in reading habits which slow down the speed of the reader, according to Fry (1965), are pointing at words, head and eye movements, regression, vocalisation and subvocalisation.

**Subvocalisation:** Subvocalisation differs from vocalization in the sense that no body movement occurs. The lips, tongue and vocal cords remain intact. In subvocalisation, an inner speech persists and the reader can mentally listen to his speech as though internally pronouncing the words to himself. Vocalisation and subvocalisation are developed in the early stages of learning reading, when students are trained to read and normally requested to read aloud. One major step towards curing this problem is asking students to read silently and at the same time trying to understand
the idea communicated by the author not necessarily going through all words one by one.

11. Reading Skills

It seems in many situations that there is an interconnectivity between reading skills and reading strategies. Reading skills are those abilities to have for completing the reading process and extracting the meaning from the text; whereas reading strategies are the higher level of the reading skills and which readers apply to make the reading skills more effective. We may say that there are minimum reading skills which poor readers usually rely on, whereas good readers usually have a variety of reading skills and strategies.

Olshavasky (1977) theoretically differentiates between reading skills and reading strategies. A skill is defined as an acquired ability, which has been automaticised and generally operates subconsciously. A strategy, on the other hand, is a conscious procedure carried out to solve a problem.

Assuming that the reader knows the code of the language and has the ability to decipher the written symbols etc., reading with comprehension involves the following skills, as argued by some researchers and applied linguists.
Davis (1968)

- Identifying word meanings.
- Drawing inferences.
- Identifying writer's technique and recognising the mood of the passage.
- Finding answers to questions.

Lunzer et al. (1979)

- Word meaning.
- Words in context.
- Literal comprehension.
- Drawing inferences from single strings.
- Drawing inferences from multiple strings.
- Interpretation of metaphor.
- Finding salient or main ideas.
- Forming judgements.


- Recognizing the script of a language.
- Deducing the meaning and use of unfamiliar lexical items.
- Understanding explicitly stated information.
• Understanding explicitly information when not explicitly stated.

• Understanding conceptual meaning.

• Understanding the communicative value (function) of sentences and utterances.

• Understanding relations within sentences.

• Understanding relations between the parts of a text through lexical cohesion devices.

• Understanding cohesion between parts of a text through grammatical cohesion devices.

• Interpreting text by going outside it.

• Recognizing indicators in discourse.

• Identifying the main point or important information in a piece of discourse.

• Distinguishing the main idea from supporting details.

• Extracting salient points to summarize (the text, main idea, etc.).

• Selective extraction or relevant points from a text.

• Basic reference skills.

• Skimming.

• Scanning to locate specifically required information.

• Transcending information to diagrammatic display.
Aafner (1977) classified reading skills under seven sub-divisions. He nearly covered all the skills given by Munby. The problem is that his classification was broad and overlapping. Aafner stresses that students should be taught to understand various patterns of explanation; that is, definition, analysis, cause and effect, comparison and contrast, analogy, chronology, and dialogue.

Williams and Moran (1989) point out that there exist many taxonomies of reading skills, but there is no consensus concerning both the content and the terminology. Urquhart and Weir (1998:91-92) suggest some possible criteria for ranking hierarchically the taxonomies of the skills (See Lunzer et.al above):

(a) *Logical implication*: One component in the system can logically be considered to presupose all components below it.

(b) *Pragmatic implication*: A reader displaying one skill can be assumed to possess all the 'lower' skills.

(c) *Difficulty*: The components are arranged in order of increasing difficulty.

(d) *Developmental*: Some skills are acquired earlier than others.

(e) *Discourse level*: A skill is ordered with respect to the size or level of the discourse unit it relates to. It would explain a tendency to rate 'thematic' questions, aimed at the whole of a text, as being 'high level'.
12. Perspectives of Reading and Comprehension

We introduced earlier in this chapter some notions which we would like to expand in this section. We believed that they are the core elements in the reading process. They are known in reading literature as 'the general perspectives of reading comprehension', on which the major bulk of research on reading is based. (Adapted from Smith 1985, Goodman 1988, Aslam 1992).

• A text has no meaning; it has potential for meaning. Therefore, this makes comprehension a product and a process. Product in the sense of comprehension gained, and a process in the sense that it is an active interaction by which the reader reconstructs the message in the text.

• Knowledge of the language in which the text is written: a necessary element, but not sufficient. Background knowledge complements the language knowledge, so that comprehension is improved whether this background knowledge is culture-specific or topic-specific.

• Prior knowledge is not sufficient to ensure comprehension, if it is not identified and activated by the reader to comprehend the text at hand.
• Comprehension is a goal-oriented process. It takes place by the reader's construction of a context that helps him make sense out of what is actually perceived by him in a text.

• The information actually used by the reader in order to comprehend the text is much more than the information presented in a text, because no text is completely explicit, as the writer assumes some background knowledge from the reader's side.

• Comprehension is not a simple process of decoding information presented in the text. Comprehension involves creating information by means of experience, inferencing and deduction.

• Reading is a prediction-based activity. The process of meaning-construction is not over till the reader has read the text fully. Based upon how much is read, the reader makes hypotheses and predictions which may later be confirmed or rejected, refined or abandoned.

• Almost all understanding is contextual. The reader does not understand each individual sentence independently of what appeared earlier. That is to say, there is the reader's expectation of sense-constancy.

• No two readers are intellectually alike. The reading ability is not absolute. Two readers understand the same text differently.
• A text when viewed from different contexts, can be interpreted to mean different things.

And we, finally, assert that comprehension is affected by the writer’s style and text structuring, the reader’s strategies and reading experiences as well as the text readability.

To conclude, the literature and research on reading is too vast to be condensed in a short chapter. We opted to cover only those areas which are of direct relevance to our study. This was purposefully targeted to give a theoretical background on reading comprehension, mainly models, strategies and skills besides other related issues in the field. In Chapter Two, the teaching of reading is considered so that these first two chapters complement each other. Moreover, they provide the basis for understanding the aims and purposes of our study, first, as mentioned in the following section, second, as investigated by the study and its results, and finally, as projected in the last chapter.

13. Aims and Purposes of the Present Study

It is hoped that the present study will serve many purposes, theoretical as well as practical. Aims and purposes might be summarized in the following points.
1. To study and analyze English reading habits of speakers of Arabic, since English is a foreign language in Yemen, learners will have 'peculiar' habits, because their goal is to master the language and understand the foreign culture.

2. To identify strategies adopted by speakers of Arabic while reading and comprehending a written English text.

3. To study the speed of reading and comprehension; that is the relation of speed rate and comprehension gain as displayed by undergraduate students learning English at Sana’a University.

4. To study the general comprehension level of Arabic undergraduates learning English. That is, the extent to which they can fully understand a written text.

5. Once we feel that the above points are covered and successfully achieved, then all that will be compared with the mother tongue (MT/L₁ reading abilities and strategies (as reported in the literature).

6. The study will hopefully help us investigate the relation between general language ability (competence), reading comprehension, and reading strategies.
7. To assess and evaluate the EFL programmes at Sana’a University, with the focus being on reading skills and strategies, and syllabus of reading and comprehension, particularly drills, exercises and reading activities and practices recommended.

8. The findings of the study will enable us to suggest effective proposals to improve reading skills and strategies in general, and in an EFL situation in particular, more specifically for English reading strategies for speakers of Arabic.

9. The final and practical focus of the present study will be in devising a programme that enables students to read unfamiliar authentic texts effectively without help, at appropriate speed, silently and with acceptable and reasonable understanding.