Sudan University of Science and Technology

College of Graduate Studies

College of Languages

Investigating the Relationship between Students' Depth of Vocabulary and their Proficiency in Reading Comprehension

The case study: Ibn Khaldoon College

تقصي عمق العلاقة بين الذخيرة اللغوية وكفاءة القراءة الصامتة لدى طلاب الجامعة

(دراسة حالة: كلية ابن خلدون)

A Thesis submitted in the partial fulfillment for the requirements of Ph.D in English Language (Applied Linguistics)

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الآية

قَالَ تَعَالَىٰ:

﴿ ٱقْرَأْ بِٱسْمِ رَبِّكَ ٱلَّذِى خَلَقَ ﴿١﴾ خَلَقَ ٱلْإِنسَـٰنَ مِنْ عَلَقٍ ﴿٢﴾ ٱقْرَأْ وَرَبُّكَ ٱلْأَكْرَمُ ﴿٣﴾ ٱلَّذِى عَلَّمَ بِٱلْقَلَمِ ﴿٤﴾ عَلَّمَ ٱلْإِنسَـٰنَ مَا لَمْ يَعْلَمْ ﴿٥﴾ ﴾

سورة العلق: ١ - ٥

Dedication

Dedicated to my Parents, my Family, and my close friends.

Acknowledgement

All thanks and praises are due to Allah for empowering me to achieve this academic work. My thankfulness and gratitude are extending to my supervisor prof: Mahmoud Ali Ahmed for his guidance throughout the period of this thesis. Most thankfulness, respect, and gratitude are due to Ibn KHaldoon A private College presenting me all the assistance to fulfill scientifically the requirements for presenting study ,Library of Languages at Sudan University of Science and Technology for providing me all the sources to be the base of the scientific materials of the study, College of Languages, Library of University of Bahri,and sincere gratitude and thankfulness are presenting to my husband who encourage me to success this study.

Abstract

The study aims to the investigating the relationship between students' depth of vocabulary and their proficiency in reading comprehension in the university level, to help tutors to opt for the type of authentic vocabulary that will enrich their word power, and help students plan for increasing their vocabulary knowledge through suggesting certain types of reading material and advising them to use the internet. Vocabulary knowledge and reading comprehension are the problem of this study, Vocabulary knowledge and reading comprehension are important components in the language and literacy development of ES\FL students, and have a profound effect on their overall academic achievement and language proficiency. However, it is observed that the standard of English language proficiency among the Sudanese tertiary level students is rather weak, despite the fact that English is learned for seven years in the basic and secondary school levels. They seem to have problems in all aspects of English skills, specially their reading skills. Their proficiency in reading skills is very poor. This study hypothesized the depth of vocabulary knowledge correlates with good reading comprehension, independent reading help develop vocabulary affects reading comprehension. The method adopted in this research is descriptive analytical approach. Data has been collected by using two tools: a diagnostic test for (30) EFL Sudanese university students and a questionnaire for (30) EFL Sudanese university teachers at Ib Khaldoon Private College, all the data has been then analyzed through SPSS (Statistical Package for Social Sciences).This study sets out main findings: . There is a direct correlation between the depth of vocabulary knowledge and reading comprehension. In order for the students to proceed with their overall learning across the different disciplines, they should have good grasp of reading and good

vocabulary, written language has the power to take the mind to different places, times and events; it can put us in the shoes of fascinating characters and hold our attention through gripping plots, suspense and intrigue, and Texts can inform and develop knowledge, provide us with new vocabulary and provoke new ways of thinking. the following recommendations are suggested:
Though a number of researches has been done on reading comprehension, the area of reading comprehension is still open to further investigation especially at the university level, tutors at the university level handle their reading comprehension texts along traditional or classic methods, and an alternative approach to examining the process of reading is to inspect the product of reading and, often, to compare that product with the text originally read. This study puts forward the following suggestions:
More contrastive studies to be carried out on reading comprehension along the lines of new method of investigation on the area in question, and future investigation on reading comprehension should pay attention to the process and product.

Abstract Arabic Version

المستخلص

هذه الدراسة تهدف لتقصي العلاقة بين العمق اللغوي للطلاب وكفاءتهم في القراءة في مستوى الجامعات، بجانب أنها تساعد الأستاذ لاختيار المفردات الأصلية، وتنمي مقدرتهم في استخدام الكلمة، وتساعد الطلاب لزيادة المعرفة اللغوية من خلال اختيار نصوص محددة باستخدام الشبكة العنكبوتية. هذا، وتدور هذه الدراسة حول المعرفة اللغوية والقراءة إذ هما العنصرين الأساسيين في تعلم اللغة، وتعلم وتطور القراءة والكتابة للغة الأم والناطقين بغيرها. إذ أنه بالرغم من أن الطلاب يدرسون اللغة الانجليزية سبع سنوات إلا أن المستوي اللغوي ضعيف في جميع مهارات اللغة. وتفترض هذه الدراسة أن العمق اللغوي تقترن مع القراءة الجيدة، والقراءة المستقلة التي تساعد على تطور المفردات والتي بدورها تعزز القراءة. منهج البحث هو المنهج الوصفي التحليلي، وقد تم جمع المعلومات عن طريق الاختيارات والاستبانة واستخدام التحليل الاحصائي، وكان ميدان الدراسة في كلية ابن خلدون الخاصة. وكانت أهم النتائج: اقتران بين المعرفة اللغوية والقراءة، واللغة المكتوبة دائما تربط الماضي بالحاضر والواقع بالخيال، والنصوص دائما تعلم وتطور المعرفة. وقد اوصت الدراسة بالآتي: مواصلة الجهود في الدراسات في مجال القراءة، ويجب على الأستاذ أو المعلم استخدام الطرق الحديثة في التدريس لترغيب الطلاب، ويجب على الأستاذ أن يأخذ بعملية فحص استيعاب الطلاب للنصوص. وقد اقترحت الدراسة أن تكون هناك دراسات مماثلة تؤخذ بعين الاعتبار في القراءة.

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CHAPTER ONE
INTRODUCTION

1.0 Introduction

This chapter provides the theoretical framework of the study. It includes the statement of the study problem, the study questions, the hypotheses of the study, objectives of the study, the significance of the study, the limits of the study and the research methodology.

1.1 Context of the Study

There is a direct correlation between the depth of vocabulary knowledge and reading comprehension. In order for the students to proceed with their overall learning across the different disciplines, they should have good grasp of reading and good vocabulary.

The basic function of language is to convey meaning through the sharing of information, ideas and perspectives. When written message are carefully written in a way that they can easily be read and understood, the sheer reading operation becomes highly enjoyable and wonderfully inspiring. This is because the message has to convey information and transform experience Written language has the power to take the mind to different places, times and events; it can put us in the shoes of fascinating characters and hold our attention through gripping plots, suspense and intrigue. Texts can provide escapism and offer alternative perspectives on the world; what's more, they can 'kindle' our imaginations to create rich mental images that may stay with us forever. Texts can inform and develop knowledge, provide us with new vocabulary and provoke new ways of thinking. Proficiency in reading comprehension is usually seen as important to the academic success of foreign language learners. In the Sudanese EFL context, the efficiency in reading comprehension is becoming increasingly significant to the students. The ability to read and

understand textbooks written in English is needed to the tertiary level students to learn professional knowledge as well as strengthen their English proficiency. However, reading textbook written in English in the Sudanese tertiary level context has been considered a challenge for many undergraduates, especially those who are specialized in disciplines other than English. Many students have difficulty in decoding and understanding English words in different context.

In fact, reading comprehension, in both first (L1) and second language (L2), is affected by many variables, the most researched being background knowledge, reading strategies, and vocabulary knowledge. From both my personal learning and teaching experience and the literature, vocabulary appears to play a more important role and constitute more of a problem than people usually recognize. Many learners feel that they cannot effectively comprehend what they read. One major reason accounting for this phenomenon is that learners have not perfectly mastered vocabulary knowledge. Research consistently reveals that vocabulary knowledge heavily relates to proficiency in reading comprehension.

So, to achieve the desired success in language teaching learning process especially EFL, vocabulary knowledge proficiency is one of important factors to be taken into consideration. In this context, therefore, it seems that vocabulary knowledge proficiency and reading comprehension have close relation. This study is carried out with the intention of finding some empirical evidence to the relationship between vocabulary knowledge and reading comprehension performance of the Sudanese EFL learners. More specifically, it compares the relative importance of two aspects of vocabulary knowledge, the superficial, word-counting, or 'breadth' aspect,

and the more complex, multidimensional, or 'depth' aspect, in the L2 (English) reading performance of Sudanese university students.

1.2 Statement of the Problem

Access to reading resources in the age of the internet has become quite an easy affair. However, this situation which might look moderately delightful it can also be very unpleasant due to the abundance of knowledge and information provided by the internet. Consequently, there is no apparent problem as to the source of reading material.

Vocabulary knowledge and reading comprehension are important components in the language and literacy development of ES\FL students, and have a profound effect on their overall academic achievement and language proficiency. However, it is observed that the standard of English language proficiency among the Sudanese tertiary level students is rather weak, despite the fact that English is learned for seven years in the basic and secondary school levels. They seem to have problems in all aspects of English skills, specially their reading skills. Their proficiency in reading skills is very poor. A large majority of them cannot access English textbooks prescribed in their syllabus due to luck of the required proficiency of reading skills in English. In fact, a reading knowledge of a foreign language is often important for academic studies, professional success, and personal development. This is particularly true of English as today so much professional, technical, and scientific literature is published in English. Reading ability is the most important skill needed by learners of English as a foreign language. Yet, despite this specific need for the foreign language, most of our students fail to learn to read adequately. Very frequently, students reading in a foreign language seem to read with less understanding than one might expect from them, and read considerably slower than they reportedly read in their first language.

This issue has been a source of concern for researchers, teachers and parents for a long time without having a solution. While Sudanese ES\FL learners are suffering from such a problem, there is a need to investigate the variables that may affect their reading comprehension proficiency. A large number of variables influence the way a learner comprehends a reading passage, of which are depth and size of vocabulary Knowledge. The significant role of vocabulary knowledge depth and size in reading comprehension has been well recognized in first language studies and this has appeared to be the case in second language settings as well (Nation, 2001 and Read, 2000). Researchers have suggested several models to describe the relationship between vocabulary knowledge and reading comprehension. According to Nation (2000), the factors involved in these models include language knowledge (of which vocabulary knowledge is a part), knowledge of the world (sometimes called background knowledge) and skill in language use (of which reading comprehension is one result).

Though there are many studies conducted on the relationship between reading performance and different aspects of language proficiency, there is still an absence of studies exploring the relationship between aspects of vocabulary knowledge and reading in the Sudanese EFL context. This indicates the importance of running a research in this respect. Given that, the current research reports the results of an empirical study, addressing the extent to which the reading performance is associated with proficiency in vocabulary knowledge. The study would be worthwhile enterprise in Sudan, not only for pedagogical purposes but also for the insights it affords into the cognitive processes involved in reading and vocabulary acquisition. Any research that attempts to do so may advance our understanding of the nature of vocabulary knowledge and its relation to reading comprehension.

1.3 Objectives of the Study

This study sets out to achieve the following objectives:

1. To state the relationship between the students' vocabulary knowledge and their reading comprehension.
2. To help tutors to opt for the type of authentic vocabulary that will enrich their students' word power.
3. Help students plan for increasing their vocabulary knowledge through suggesting certain types of reading material and advising them to use the internet.

1.4 Significance of the Study

This study derives its importance from the fact of handling a very important issue that of vocabulary and its relevance to increase of overall knowledge. Reading comprehension and vocabulary development seem to be the most important and useful activities in any language class, especially for the students of English as a foreign language (EFL) in Sudan. In fact, most students learning English in such poor-input contexts compensate their lack of exposure to spoken English by engaging in reading comprehension activities. Studies on these two aspects can be of great value for education administration and even for universities.

Moreover, students' vocabulary knowledge allows teachers to set the language goals for the course within communicative language teaching. This study would be helpful because of the insights it offers for the cognitive processes involved in reading and vocabulary acquisition. Therefore, any research in line with these points may broaden our understanding of the nature of vocabulary knowledge and its relation to reading comprehension. With regard to the crucial role of vocabulary knowledge, little is known about how and what aspect of vocabulary knowledge can affect reading comprehension more effectively in Sudan

as an EFL context. The findings of this study may prove to be an asset for the Sudanese ministry of education and tertiary level instructors. This study also attempts to make suggestions in the field of text and techniques selection. These suggestions give teachers a new and real insight into the ways by which they can help students.

1.5 Questions of the Study

In order to conduct this study the following research questions have been formulated.

1. To what extent does the depth of vocabulary knowledge correlate with good reading comprehension?
2. To what extent does independent reading help develop vocabulary quite significantly
3. To what extent does the depth of vocabulary knowledge affect reading comprehension?

1.6 Hypotheses of the Study

1. The depth of vocabulary knowledge correlates with good reading comprehension.

2. Independent reading help develop vocabulary quite significantly.

3. The depth of vocabulary knowledge affects reading comprehension.

1.7 Methodology of the Study

The methodology to be used in the present research is both descriptive and analytical. It also combines quantitative approach of data collection technique. In order to assess the students' vocabulary and reading comprehension proficiency, three instruments are used for the data collection; namely, Vocabulary Levels Test, Vocabulary Depth Test, and the Reading Comprehension Test. This was decided because using multiple measures where different types of data are collected can help validate each type and give more in-depth results. Using three tools of

data collection can also to guarantee the flow of data from different sources, which would be valuable and resourceful for the present study. It also helps in finding detailed answers for the posited research question. On other hand, Tests are also proved to be of great value in language testing. Seliger and Shohamy (1989) cited is Chen (2011) states that tests are generally effective tools used to collect data about the subject's ability or knowledge in second language areas such as vocabulary, grammar, reading comprehension or general language proficiency.

1.8 Limitations of the Study

This research was conducted chiefly to examine the correlation between the depth of vocabulary knowledge and reading comprehension without giving any consideration to the three remaining skills. The study does reflect a number of limitations including:

1. This study first and foremost focuses on the relationship between vocabulary knowledge depth and size and reading comprehension in the Sudanese EFL context.
2. The treatment is only about vocabulary knowledge and reading comprehension; other skills such as, listening, writing, and speaking are barely touched upon in order to avoid overgeneralization in connection with the findings.

CHAPTER TWO

LITERATURE REVIEW AND PREVIOUS STUDIES

2.0 Introduction

This chapter reviews relevant literature on the issue of reading comprehension and other related topics with some emphasis on the nature of reading comprehension as associated with the concept of culture and how reading comprehension can be developed. Important findings and arguments from opponents and proponents of an English-only teaching method will be discussed. The chapter is divided into two parts, the first one is on the theoretical framework, and the other is on previous studies.

Part one

2.1: Theoretical Framework

2.1.1 Review

The question of reading comprehension can be a very challenging issue especially if the language is mostly unfamiliar technical or complex. Some readers can work out the meaning of individual word but linking them together for full meaning often does not happen as it ought to be. These readers have the ability to decode single or individual words however they have not developed sufficient skills to work to grasp the underlying deeper meaning of stretches of words or sentences or full paragraphs. Comprehension refers to the ability to go beyond the words, to understand the ideas and the relationships between ideas conveyed in a text.

This part of the chapter shall give attention to the cognitive processes involved in comprehension as well as the types of techniques to be employed to enhance readers' abilities to comprehend the text. Students' cultural background should not be neglected and has to be pinpointed as an important tool that helps maximize the process of comprehension. So

the focus is on reading comprehension strategies. No doubt that using appropriate techniques or reading comprehension strategies shall have the effect of improving learners' understanding of the texts to be approached.
There is a great deal of evidence for the importance of reading strategies. One source of evidence is that successful readers know when and how to use deliberate strategies to repair comprehension. One implication from that finding is that teaching reading strategies to struggling readers may be a key toward helping them to improve comprehension. And it is. Teaching struggling comprehenders to use strategies improves their comprehension and their ability to learn from challenging text. Therefore, it is a fundamental part of reading comprehension is the use of strategies.

2.1.2 Nature of reading

Reading, through which we can access worlds of ideas and feelings, as well as the knowledge of the ages and visions of the future, is at once the most extensively researched and the most enigmatic of the so-called language skills. Reading has been investigated from numerous perspectives by linguists, psychologists, educators and second language researchers and a huge volume of research is now available. Reading also plays a critical role in applied linguistics re- search and in the day-to-day professional life of the language teacher. Similarly, the assessment of reading ability is of critical importance in a wide range of educational and professional settings, and the need for expertise in this area is widespread.
Most preceding studies have considered that the nature of reading comprehension is impossible. The sheer volume of research on the topic belies any individual's ability to process, much less to synthesize, everything that is written. Similarly, the number of different theories of reading is simply overwhelming: what it is,

how it is acquired and taught, how reading in a second language differs from reading in a first language, how reading relates to other cognitive and perceptual abilities, how it interfaces with memory. All these aspects of reading are important, but will probably never be brought together into a coherent and comprehensive account of what it is we do when we read. Added to this are the inevitable complications when we consider the complexities of analyzing texts: since the nature of *what* we read must have some relation to *how* we read, then text analysis must be relevant to theories of reading and to research into reading. Yet the simple phrase 'text analysis' covers an enormous range of study within linguistics, which again no individual can hope to overview.

Any review, therefore, of 'the nature of reading' is bound to be somewhat pretentious, and this introductory chapter will inevitably be selective, rather than exhaustive. Yet consider the dilemma for anybody wishing to assess reading. In order to assess the **construct-** the ability we wish to test – we need to know what the construct is. In order to devise a test or assessment procedure for reading, we must surely appeal if only intuitively, to some concept of what it means to read texts and to understand them. How can we possibly test whether somebody has understood a text if we do not know what we mean by 'understand'? How can we possibly diagnose somebody's 'reading problems' if we have no idea what might constitute a problem, and what the possible 'causes' might be? How can we possibly decide on what 'level' a reader is 'at' if we have no idea what 'levels of reading' might exist, and what it means to be 'reading at a particular level'? In short, those who need to test reading clearly need to develop some idea of what reading is, and yet that is an enormous task.

2.1.3 Process and product of reading

It is ordinary to make a distinction between the *process* of reading and the outcome of that process, the *product*. The process is what we mean by reading proper: the interaction between a reader and the text. During that process, presumably, many things are happening. Not only is the reader looking at the text, deciphering in some sense the marks on the page deciding what they mean and how they relate to each other. The reader is presumably also 'thinking' about what he is reading: what it means to him, how it relates to other things he has read, to things he knows, to what he expects to come next in texts like this. He is presumably thinking about how useful, entertaining, boring, crazy, the text is. He may be consciously reflecting on the difficulties or ease he is experiencing when reading, and on ways of overcoming the difficulties or of continuing the plea- sure. He may be completely unconscious of how he is reading, and of what is happening around him: he may be fully absorbed in 'reading'.

Evidently, many different things can be going on when a reader reads: the process is likely to be dynamic, variable and different for the same reader on the same text at a different time or with a different purpose in reading. It is even more likely, then, that the process will be different for different readers on different texts at different times and with different purposes. Understanding the process of reading is presumably important to an understanding of the nature of reading but at the same time it is evidently a difficult thing to do. The process is normally silent, internal, and private.

2.1.4 Eye movement

Research has focused on examining the eye movements of readers, and interesting insights have been gained from eye movement photography. Watching what the eyes are doing, however, may not tell us what the brain is doing if, in Smith's (1971) terms, 'What the Brain Tells the Eye is More Important than What the Eye Tells the Brain. Asking the reader to read aloud is an alternative to eye movement photography as a means of externalizing the reading process, and **miscue analysis** (which analyses the mistakes readers make when reading aloud for details see Goodman, 1969) is one method of investigating the reading-aloud process. Yet reading aloud is not the 'normal' way in which people read, and the process of reading aloud may be very different from reading silently. Externalizing the private process of reading may be the only way to inspect it, yet such externalizing risks distorting and changing the nature of the process.

Introspection, through think-aloud protocols or verbal retrospection in interviews, is an increasingly frequently used method of investigating the reading process, and researchers have identified different strategies that good and poor readers appear to use when reading; they have investigated the parts of text that cause problems when reading; and they have also looked at the affective issues that arise when readers are processing particular texts. Introspective methodologies have their critics and are obviously limited in how much light they can throw on the process, but, equally obviously, such methodologies have their uses.

An alternative approach to examining the process of reading is to inspect the product of reading and, often, to compare that

product with the text originally read. It is sometimes said that, although different readers may engage in very different reading processes, the understandings they end up with will be similar. Thus, although there may be many different ways of reaching a given understanding, what matters is not *how* you reach that understanding, but *the fact that* you reach it, or, to put it another way, what understanding you do reach.

The problem of potentially infinite variation in processes of interpreting text is then supposedly reduced by a focus on what one has understood. Product approaches to reading have been unfashionable in recent years as research efforts have concentrated on under- standing the reading process, and as teachers of reading have endeavored to improve the way in which their students approach text. However, a great deal of research into reading earlier this century used essentially product approaches to reading, and much research into the effect of linguistic variables still concentrates on the product of reading. Both a growing realization that processes of reading are more complex than originally assumed, and the inevitable pendulum swing in research and teaching fashions, have led to revived interest in the product of reading.

2.1.5 Levels of understanding

It is commonplace in theories of reading as well as in everyday talk about reading to distinguish different levels of understanding of a text. Thus, some may distinguish between a literal understanding of text, an understanding of meanings that are not directly stated in text, or an understanding of the main implications of text. Similarly, the distinction between understanding details and understanding

the main idea of a text is familiar enough to teachers of reading, as is Gray's (1960) distinction between reading 'the lines, reading 'between the lines', and reading 'beyond the lines. The first refers to the literal meaning of text, the second to inferred meanings, and the third to readers' critical evaluations of text.

Such distinctions clearly relate to the product of reading, and enable us to describe some of the observed differences in under-standing among readers. They also enable the evaluation of such differences, since it is believed that inferred meanings are somehow 'deeper' than literal meanings, and that a critical understanding of a text is more highly valued by society than a 'mere' literal under- standing. Such value judgments lead to an implicit (at times explicit) hierarchy of levels of understanding: the literal level being considered somehow 'lower' than critical understanding. This in turn leads to an assumption that it is more 'difficult' to reach a critical understanding of text than it is to infer meanings, and that both of these are more difficult than 'merely' understanding the literal meaning. Thus the notion of levels of understanding becomes over-laden with an ordered hierarchy of increasingly valued and increasingly difficult 'meanings'. The next logical leap is from this ordered hierarchy of difficulty and value to a hierarchy of acquisition: it is very frequently assumed that readers first learn how to understand texts literally, then to infer meanings from text, and only later do they learn how to approach text critically, to evaluate text, and so on. Thus it is often asserted that the levels are ordered: i.e. one must understand the lines in order to read between them, and one had better understand both before adventuring beyond them. In fact, the empirical justification for such assumptions is very slim indeed, but the

theoretical notions are persuasive, especially to teachers of reading, and they are thus pervasive.

2.1.6 To be able to read

What does it mean to be able to read? Discussions of 'levels of understanding' frequently merge into a discussion of a reader's ability to understand at certain levels. Kintsch and Yarbrough (1982), for instance, distinguish levels of comprehension: it is possible to comprehend the words but not the meaning of a sentence, and sentences but not the organization of the text. Kintsch and van Dijk (1978) relate the former to 'micro-processes' and the latter to 'macro-processes': micro-processes have to do with local, phrase-by-phrase understanding, macro-processes with global under- standing. In fact, as mentioned above, reading researchers have frequently attempted to identify reading skills or abilities by giving subjects a series of passages, and asking them questions intended to test different levels of understanding of the passages. Thus 'the ability to make inferences' becomes defined as 'the ability to answer a question relating to meanings not directly stated in text'. There is, of course, a degree of circularity in such definitions, but that has not stopped researchers and theorists from positing the existence of reading skills and sub-skills from the answers to such questions. It is common to factor-analyze the results of such answers, and then to state that questions that load on the same factor measure the same skill or sub-skill. In such a fashion, many different lists, taxonomies and even hierarchies of skills have been developed, as Alderson and Lukmani (1989) point out. The New York City Board of Education is cited by Lunzer and

Gardner (1979) as identifying thirty-six different skills. Davis (1968) defines eight skills, as follows:

1. Recalling word meanings

2. Drawing inferences about the meaning of a word in context

3. Finding answers to questions answered explicitly or in paraphrase

4 weaving together ideas in the content

5. Drawing inferences from the content

6. Recognizing a writer's purpose, attitude, tone and mood

7. Identifying a writer's technique

8. Following the structure of a passage

However, there is a considerable degree of controversy in the theory of reading over whether it is possible to identify and label separate skills of reading. Thus, it is unclear (a) whether separable skills exist, and (b) what such skills might consist of and how they might be classified (as well as acquired, taught and tested). Nevertheless, the notion of skills and sub-skills in reading is enormously pervasive and influential, despite the lack of clear empirical justification.

2.1.7 Bloom’s taxonomy

Bloom's 'Taxonomy of Educational Objectives in the Cognitive Domain' (Bloom *et al.* 1956) appeals to similar theorizing about the components of educational achievement, and his taxonomy has been enormously influential in the devising of curricula, instructional material and tests. In second-language education, Munby's taxonomy of micro-skills has been influential in

syllabus and materials design as well as the design of language tests. Munby (1978) distinguishes the following reading 'micro-skills':

- recognizing the script of a language
- deducing the meaning and use of unfamiliar lexical items
- understanding explicitly stated information
- understanding information when not explicitly stated
- understanding conceptual meaning
- understanding the communicative value of sentences
- understanding relations within the sentence
- understanding relations between parts of 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 discourse
- distinguishing the main idea from supporting details
- extracting salient details to summarize (the text, an idea)
- extracting relevant points from a text selectively
- using basic reference skills
- skimming
- scanning to locate specifically required information
- trans-coding information to diagrammatic display

Such lists or taxonomies are seductive because they offer an

apparently theoretically justified means of devising test tasks or items, and of isolating reading skills to be tested. They also suggest the possibility of diagnosing a reader's problems, with a view to identifying remediation. They are potentially very powerful frameworks for test construction and will doubtless continue to be so used.

2.1.8 Skills involved in reading process

What do we do when we read? If theorists are not (yet) agreed on what skills are involved in the reading process, is it at least possible to find some consensus on what happens when we read? What kinds of tasks characterize the activity involved in reading?

Clearly, reading involves perceiving the written form of language, either visually or kinesthetically (using Braille). Here we already encounter the first problem: do readers then relate the printed form of language to the spoken form? If so, then once that translation has taken place, reading is the same sort of activity as listening, and the only specific aspect of reading that we need to concern ourselves with as testers is the process of transformation from print to speech. One argument, put forward by theorists like Smith (1971), is that readers proceed directly to meaning, and do not go via sound. They claim that readers can process print much faster than sounds, and so there would be an upper limit on the speed with which we read if we had to go from print to sound. Fluent reading is frequently done at speeds up to three times as fast as many people speak in everyday conversation.

Recent accounts of the fluent reading process tend to emphasize that it is rapid, purposeful, motivated, interactive (in terms of component skills as well as in the relation between knowledge

and the printed word), it is comprehending (readers expect to understand), it is flexible, and it develops gradually (it is the product of long-term effort and gradual improvement).

When we are reading, we are clearly engaged in a great deal of mental activity, some of it automatic, some of it conscious. For example, we may consciously decide to skip a page or two in a rather boring text, we may decide just tofocus on the headlines in a news- paper, or to read the end of the detective story first before reading the introduction. We may scan through a telephone directory ignoring all names except the one we are looking for; or we may read every letter and word of a memorandum we are writing to our boss, in which we want to be sure we have made no spelling mistakes, and have ex- pressed ourselves diplomatically but clearly.

These conscious strategies involve a deliberate choice of process or task, each of which may involve different constellations of skill and knowledge (being able to spell words in English, for example, or knowing the order of the alphabet). Such strategies may be semi- conscious, or at least recoverable to consciousness, as when we try to figure out the meaning of a word we have never met before by thinking about the context in which it comes, its form, the sort of word it is (noun, verb and so on) and the sort of meaning it is likely to have. We may consciously decide to look the word up in a dictionary, or not to worry about its 'exact meaning', since we have sufficient idea of what it must mean to be able to continue reading without disruption.

Other activities are not amenable to consciousness – hence the use of the term automaticity**.** We are not normally conscious of pro-

cessing the distinctive features in each letter in English text, for example, yet word recognition for the normal reader must involve some process of discriminating visual shapes. When we are absorbed in a novel we are not normally conscious that we are visualizing the setting – the faces, dress, voices of the characters, the location of the action, the surrounding scenery yet evidence suggests that we do precisely this, and that what we visualize becomes part of our meaning for what we are reading. Researchers seek to identify and characterize these processes and strategies, and useful lists have been developed in recent years (see for example Harri-Augstein and Thomas, 1984; Nevo, 1989; Storey, 1994).

There are two broad approaches available for assessment for those who feel that the view of reading as a series of strategies and activities is correct, or at least relevant to their purposes. One is the analytic approach: to seek to test whether readers successfully engage in, or master, those aspects of the process which testers consider to be important. Thus one might seek to devise test items which explore whether a reader can successfully deduce the meaning of unknown words from context. One might devise tasks that require readers to scan rapidly through a number of headlines in order to identify the one(s) that are relevant to a particular need or topic. In other words, one seeks to isolate and identify components of the reading process relevant to the purpose for which one is testing. Some aspects will, however, be easier to test than others: can one for example, successfully test whether readers are visualizing settings 'appropriately' when reading a short story? Can one assess whether readers are fully absorbed in a novel, with no sense of their surroundings, or are just pretending for the sake of

the assessor?

The other broad approach is to recognize that the act of assessing itself risks disturbing parts of the process one is wishing to assess, and to acknowledge that individual readers may well not need to engage in a particular activity in order to read 'successfully' (they may already know the meaning of the word, they may find an irrelevant news story interesting). Such an approach would entail seeking to simulate as far as possible the conditions in which one is interested reading newspapers in order to get an overview of the day's events, scanning TV guides in order to plan the evening's viewing and then assess whether the reader had successfully completed the task. The assumption would be made that if the task was successfully completed, then either the reader would of necessity have engaged in the sorts of processes of interest or had not, and such processes were not necessary.

2.1. 9 Top-down and bottom up

Much has been made in reading research over the last twenty years or so of an apparent dichotomy between two different approaches that may be taken by readers. One is the bottom-up approach, and the other is the top-down approach. The latter owes much to the work of Smith (1971) and Goodman (1969, 1982), who emphasize in their writings the importance of the contribution made by the reader to the reading process, and who downplay the importance traditionally ascribed to the printed word.

Bottom-up approaches are serial models, where the reader begins with the printed word, recognizes graphic stimuli, decodes them to sound, recognizes words and decodes meanings. Each component involves subprocesses which take place

independently of each other, and build upon prior subprocesses. Subprocesses higher up the chain cannot, however, feed back into components lower down (identify- cation of meaning does not lead to letter recognition, for example). This approach was typically associated with behaviorism in the 1940s and 1950s, and with 'phonics' approaches to the teaching of reading that argue that children need to learn to recognize letters before they can read words, and so on. In this traditional view, readers are passive decoders of sequential graphic-phonemic-syn- tactic-semantic systems, in that order.

On the other hand, as we shall see in, much research has emphasized the importance in reading of the knowledge that a reader brings to text. Models of reading that stress the centrality of this knowledge are known as **schema-theoretic models.** They are based upon schema theory, which accounts for the acquisition of knowledge and the interpretation of text through the activation of schemata: networks of information stored in the brain which act as filters for incoming information (for much more detail, see Bartlett, 1932; Ausubel, 1963; Hudson, 1982; Carrell, 1983a, Carrell *et al.,* 1988). In this view, readers activate what they consider to be relevant existing schemata and map incoming information onto them. To the extent that these schemata are relevant, reading is successful. **Top-down** approaches emphasize the importance of these schemata, and the reader's contribution, over the incoming text. Goodman (1982), for example, calls reading a 'psycholinguistic guessing game', in which readers guess or predict the text's meaning on the basis of minimal textual information, and maximum use of existing, activated, knowledge. Smith (1971) claims that non-visual information

transcends the text, and includes the reader's experience with the reading process, knowledge of the context of the text, familiarity with the structures and patterns of the language and of specific text types, as well as generalized knowledge of the world and specific subject matter knowledge.

A typical statement of the top-down approach can be found in Schank (1978):

> "We would claim that in natural language understanding a simple rule is followed. Analysis proceeds in a top-down predictive manner. Understanding is expectation based. It is only when the expectations are useless or wrong that bottom-up processing begins. (Schank, 1978:94).

However, many psychologists and psycholinguists now question the usefulness of schema theory to account for, rather than provide a metaphor of, comprehension processes. One issue is *how* prior knowledge is called up from memory, and how it is then used in understanding. The problem is that schema theory does not lead to explicit definitions or predictions of processes of understanding, although it has clearly provided a powerful incentive to research into the products of understanding for first- as well as second-language readers.

2.1.10 Bottom up and fluent reading comprehension

Partly as a result, recent research tends to emphasize the important contribution of bottom-up or data-driven processing to fluent reading. In particular, numerous studies of eye movements using sophisticated instruments have consistently shown the importance of rapid and automatic processing of most of the words on the page: one estimate is that fluent readers process some 80% of content words and 40% of function words (in English). What distinguishes good from poor readers is not the number of letters in a fixation,

nor the number of words fixated per page, but the speed of the fixation – the automaticity of word recognition – and the processes that occur during fixation. **It** has been suggested that after initial word identification, but still during the fixation, good readers move onto higher-level prediction and monitoring, as well as planning of subsequent fixations. This is thought to be because they use less capacity to analyses the visual stimulus, and therefore have other resources available for other sorts of processing.

Not only are good readers rapid in their word recognition, they are precise as well. Readers take in letter features of short words simultaneously and appear to recognize all the letters in a word. The ability to recognize words rapidly and accurately is an important predictor of reading ability, especially with younger first-language readers, and even for college-level students.

In fact, however, neither the bottom-up nor the top-down approach is an adequate characterization of the reading process, and more adequate models are known as **interactive models,** in which every component in the reading process can interact with any other component, be it 'higher up' or 'lower down'. Processing, in fact, is now thought to be **parallel** rather than **serial** (Grabe, 1991:384). Rumel- hart's (1977) model, for example, incorporates feedback mechanisms that allow knowledge sources (linguistic as well as world knowledge) to interact with visual input. In his model, a final hypothesis about the text is synthesized from multiple knowledge sources interacting continuously and simultaneously. Stanovich (1980), on the other hand, has developed an **interactive compensatory model** in which the degree of interaction among components depends upon knowledge deficits in individual components, where interaction occurs to compensate for

deficits. Thus, readers with poor word recognition skills may use top-down knowledge to compensate. (However, the evidence that such compensation does in fact occur is controversial.

Although Goodman's model is often characterized as a top-down model, and Smith's popularizations acted as useful correctives to excessively bottom-up approaches in the 1970s, Goodman himself (1982) rejected the label, and claimed that his model assumed that the goal of meaning is the construction of meaning which requires interactive use of graphophonic, syntactic and semantic cues to construct meaning. Readers are not passive identifiers of letters and words but active constructors of their own knowledge. He saw reading as a complex process of **sampling** the text for graphic clues, **predicting** grammatical structures and meaning, **confirming** the validity of the hypotheses advanced and **correcting** the hypotheses as necessary as text sampling proceeds.

Less proficient readers often appear 'word-bound'. Traditional psycholinguistic models such as Smith's claimed that such readers need to take more risks, but more current views suggest that these readers are not yet efficient in bottom-up processing. They do not recognize the words sufficiently rapidly and accurately (and for second-language readers there might well be graphic as well as lexical problems anyway-there are too many new forms for students to attend to). Guessing will not overcome this deficiency and lead to automatic recognition- there are no short-cuts to automaticity, although some research has attempted to improve automatic recognition.

More recent approaches to reading have begun to investigate the

importance of the visual input once more. **It** is recognized that letters are not processed serially in order to identify words (Samuels and Kamil, 1988) -there are syntactic and semantic effects on word recognition, so that related pairs of words will be recognized more quickly than unrelated pairs, and in word recognition errors, substitutions are often of the same syntactic category as the word being substituted. It has been shown that good readers do not simply sample text - they do not skip over words in normal fluent reading: 'the single immutable and non-optional fact about skillful reading is that it involves relatively complete processing of the individual letters of print'(Adams, 1991:105). What seems to matter is the speed of recognition, the automaticity of the process.

2.1.11 Poor readers

Poor readers are distinguished from good ones by: poor phonetic decoding; insensitivity to word structures; and poor encoding of syn- tactic properties (Vellutino and Scanlon, 1987). They see reading difficulties as a linguistic problem, involving a failure to recognize how particular structures encode information, and not as a problem of insufficient background knowledge or insufficient top-down strategies. Thus, the pendulum swings. It is clear that both bottom-up and top-down information is important in reading, that the two interact in complex and poorly understood ways, and that the balance between the two approaches is likely to vary with text, reader and purpose (see Chapter 2). Given the emphasis placed by researchers and teachers alike on more top-down approaches in the 1970s and 1980s, it is likely that we will soon see some change of emphasis as the importance of text recognition receives more attention from research and pedagogy.

What are the implications for assessment? Clearly there are diagnostic issues: causes of poor reading can be hypothesized to be more bottom-up or more top-down, depending upon one's model and the data available, and diagnostic testers would do well to pay attention to both possibilities. rather than to concentrate on one. One can envisage situations where poor reading may be due to poor bottom- up strategies or inappropriate application of background knowledge, and knowledge of which approach has prevailed might be useful.

However, reading achievement and proficiency tests may well be less influenced by notions of the nature of the process and the strength of the arguments in the debate, since I would argue that, by their very nature and purpose, at least as presently conceived, such tests concentrate on product rather than process (but see Chapter 9). It is, moreover, difficult to envisage a reading test that would *require* students to adopt either a bottom-up or a top-down approach, since it may well be that either can result in a given understanding. It might be useful for testers to ask themselves, when looking at test items they have devised: is this a top-down or a bottom-up item? Would top-down reading give a better chance of getting this item right or wrong? But it is highly unlikely that any test item involving meaning would involve only one or the other approaches. It is most likely that there will be an *interaction* between textual clues and the reader's knowledge.

2.1.12 Cognitive reading strategies

Cognitive strategies are so powerfully linked with mnemonics. Mnemonics are simply reminders that help people remember things such as list of things a line of poetry or prose. One example of a mnemonic to

aid memory of a list of items is to imagine a well-known spatial route and visually place each item in a particular location along the route. Then, to recall the items, the person imagines traveling the route and *picking up* each item along the way. Another mnemonic, called *chaining,* is to create sentences out of the words in the lists. For example, with the words, *table, helicopter*, *saxophone,* and *leg* a sentence such as *'the table inside the helicopter had a saxophone for a leg'* would link the words visually, and thus the words would become more memorable.

So, with excessive practice these memory aids fashioned along that manner can maximize the process of recall. At first, these types of strategies take more time than just reading the list, but with practice, they become rapid, efficient, and effective—you remember more, with less effort. Likewise, reading strategies take more time at first, but with practice, help the reader to understand and remember much more from the text in less time than it would take without using reading strategies. For example, one reading strategy that spreads through the literature is asking questions before, while, and after reading. At first, such a strategy will take the reader much more time and effort, and may even seem inefficient. But, with practice such strategies become more automatic, and then they become a natural part of reading. The focus of this volume is on why, when, and for whom such strategies are effective.

The kind of reading strategies to be discussed here are somewhat different from those handled by other writers in a couple of ways. First, there is a heavy focus throughout on theories of reading comprehension: How well do current models of reading comprehension account for the importance of reading strategies? And most important, how do theories of reading comprehension motivate and support reading comprehension interventions?

Second, there is a focus on how current technologies can aid in helping teachers to provide reading strategy training to their students. One-on-one strategy training, and even focused group training is challenging for many teachers who are not specifically trained in reading and who don't have time to divert energy away from the teaching of critical content. New technologies are described that help the teacher be better prepared to engage their students in reading strategies in the classroom. And, computer-based tutoring technologies are described that offer further solutions to teachers' challenges by providing students with strategy training that can interact with and engage the student, and adapt to their individual needs.

2.1.13 Reading comprehension strategies

Reading is an astonishing accomplishment in view of the number of levels and components that must be mastered. Consider what it takes to read a simple story. The words contain graphemes, phonemes, and morphemes. Sentences have syntactic composition, propositions, and stylistic features. Deep comprehension of the sentences requires the construction of referents of nouns, a discourse focus, presuppositions, and plausible inferences. The reader needs to distinguish given versus new information in the text and implicitly acknowledge what is shared among most readers in a community (called the *common ground*). At more global levels, the reader needs to identify the genre, rhetorical structure, plot, and perspective of different characters, narrator, theme, story point, and sometimes the attitude of the author. The coding, interpretation, and construction of all of these levels are effortlessly achieved at a rate of 250 to 400 words per minute by a proficient adult reader.

Comprehension is not always effortless and fast, of course. When beginning readers struggle over individual words, reading is slowed to a

near halt and deeper levels of comprehension are seriously compromised. This happens when proficient adult readers struggle with technical expository text on unfamiliar mysterious topics, such as a mortgage on a house or the schematics of computer's operating system.

Cognitive strategies are particularly important when there is a breakdown at any level of comprehension. A successful reader implements deliberate, conscious, effortful, time-consuming strategies to repair or circumvent a reading component that is not intact. Reading teachers and programs explicitly teach such reading strategies to handle the challenges of reading obstacles. Such strategies are the direct focus of this chapter, and indeed this entire part.

It is arguable that reading strategies are also important for many adults who consider themselves to be skilled readers. There are basically three arguments to bolster this claim. First, many readers do not know whether they are adequately comprehending text. In research on comprehension calibration (Glenberg & Epstein, 1985; Maki, 1998), ratings are collected from readers on how well they believe they have comprehended texts, and these ratings are correlated with objective tests of text comprehension. The comprehension calibration correlations are alarming low (r = .27), even among college students. Acquisition of better reading strategies holds some promise in helping readers improve their comprehension calibration.

According to Baker, 1985; Otero & Kintsch, 1992 many readers have an illusion of comprehension when they read text because they settle for shallow levels of analysis as a criterion for adequate comprehension. Shallow readers believe they have adequately comprehended text if they can recognize the content words and can understand most of the sentences. However, deep comprehension requires inferences, linking ideas coherently, scrutinizing the validity of claims with a critical stance,

and sometimes understanding the motives of authors. Shallow readers believe they are comprehending text when in fact they are missing the majority of contradictions and false claims. Acquisition of better reading strategies is apparently needed to crack the illusion of comprehension in readers who are settling for low standards of comprehension. They need to acquire and implement strategies to facilitate deeper levels of comprehension.

Third, nearly all adults have trouble comprehending technical expository text at deep levels even though they are skilled readers. Deep comprehension of technical text is a difficult challenge, because the reader has minimal knowledge of the technical terms, key conceptualizations, mental models, and other forms of background knowledge. Even those with high relevant background knowledge and general reading skills can struggle. Researchers in my laboratory recently conducted an experiment on students in a college physics course who were assigned to one of three conditions: (a) work on physics problems with an intelligent tutor (called *AutoTutor*), (b) read a textbook on the same content for a duration yoked to the AutoTutor condition, or (c) read nothing (Graesser, Jackson, et al. 2003; Van Lehn et al., in press). Before and after training, there was a pretest and a posttest with multiple choice questions similar to the Force Concept Inventory (Hestenes, Wells, & Swackhamer, 1992), a test that taps deep physics knowledge.

We were thrilled to learn that there were substantial learning gains from AutoTutor, but that is not the main news from the present standpoint. We were surprised to learn that the college students had zero learning gains from reading the textbook, and their posttest scores did not differ from reading nothing at all. A similar finding was obtained on the topic of computer literacy (Graesser, Lu, et al., 2004). Results such as these strongly suggest that the reading strategies of literate adults are far from

optimal when considering deep comprehension. Our college students did not achieve deep comprehension on texts about physics and computer literacy even when they had a nontrivial amount of world knowledge on these topics and sufficient reading strategies to land them in college. Acquisition of better strategies of reading comprehension may best be viewed as a lifelong mission.

Some skeptics argue that the comprehension strategies will follow naturally from reading a large body of texts and from being intrinsically engaged in the content. The problem with this conclusion is that it fails to explain the above findings on comprehension calibration, illusions of comprehension, and the poverty of deep comprehension. Readers are not at all optimally comprehending texts even after decades of practice with reading.

Other skeptics raise the concern that there is a cognitive overhead in applying comprehension strategies and that this overhead can potentially interfere with learning the substantive content. There are two rebuttals to the second worry. Regarding the first rebuttal, a comprehension strategy will have a cognitive cost when first implemented, but these costs will diminish over time as the cognitive strategy becomes more practiced and eventually automatized. As in the case of all skill acquisition, the initial learning requires consciousness, is effortful, is time consuming, and taxes cognitive resources but, after practice, many skills are automatized to the point of being unconscious, effortless, fast, and unimposing in cognitive resources (Ackerman, 1988; La Berge & Samuels, 1974; Perfetti, 1985).

2.1.14 SQ3R

According to Wikipedia**, SQRRR** or **SQ3R** is a reading comprehension method named for its five steps: **survey, question, read, retrieve, and review**. The method was introduced by Francis P. Robinson, an

American education philosopher in his 1946 book *Effective Study*. The method offers a more efficient and active approach to reading textbook material. It was created for college students, but is extremely useful for young students as well. Classrooms all over the world have begun using this method to better understand what they are reading.

2.1.14.1 Process

(i) Survey ("S")

The first step, survey or **skim**, advises that one should resist the temptation to read the book and instead first go through a chapter and note the headings, sub-headings and other outstanding features, such as figures, tables, and summary paragraphs. This survey step only takes 3–5 minutes, but it provides an outline or framework for what will be presented. The reader should identify ideas and formulate questions about the content of the chapter.

(ii) Question ("Q")

Generate questions about the content of the reading. For example, convert headings and sub-headings into questions, and then look for answers in the content of the text. Other more general questions may also be formulated:

- *What is this chapter about?*
- *What question is this chapter trying to answer?*
- *How does this information help me?*
- The Question step again only takes 3–5 minutes to complete, but it will motivate the reader to seek answers to the questions.

(iii) Read (R1)

Use the background work done with "S" and "Q" in order to begin reading actively. This means reading in order to answer the questions raised under "Q". Passive reading, in contrast, results in merely reading without engaging with the study material.

(iv) Retrieve (R2)

The second "R" refers to the part known as "Retrieve." The reader should try to retrieve from memory what was learned in the same manner as telling someone else about the information. It is important that the reader use his/her own words in order to formulate and conceptualize the material. Try recalling and identifying major points (heading/subheadings) and answers to questions from the "Q" step. This recital step may be done either in an oral or written format and is related to the benefits of retrieval (testing effect) in boosting long-term memory for the material.

(v) Review (R3)

The final "R" is "Review." Once you reach the end of the passage, say back to yourself what the point of the whole passage is – again, using your own words. You may then repeat the process on the second set of questions.

2.1.15 Six stages of effective comprehension

Best's process of effective comprehension suggests six stages for better understanding a topic while in a learning process.

- Knowing vs. Understanding what the passage says (Fact finding vs. making meaning with time management).
- Reflecting (Bringing the information to life in your own words to personalize and consolidate).

- Interpersonal understanding (Checking whether the reader understood the topic e.g. explaining the idea to someone, doing seminars...etc.)
- Intrapersonal understanding (Finding personal significance (interpret, compare & conclude tentatively) of the topic in real world aspects)
- Visualization (Tony Buzan's Mind Mapping)
- Mindfulness and Acceptance

2.1.16 KWL table

A **KWL table**, or **KWL chart**, is a graphical organizer designed to help in learning. The letters KWL are an acronym, for what students, in the course of a lesson, already **k**now, **w**ant to know, and ultimately **l**earn. It is a part of the constructivist teaching method where students move away from what are considered traditional methods of teaching and learning. In this particular methodology the students are given the space to learn by constructing their own learning pace and their own style of understanding a given topic or idea. The KWL chart or table was developed within this methodology and is a form of instructional reading strategy that is used to guide students taking them through the idea and the text. A KWL table is typically divided into three columns titled Know, Want and Learned. The table comes in various forms as some have modified it to include or exclude information.

2.1.17 Classroom instruction

The KWL chart was created by Donna Ogle in 1986. A KWL chart can be used for all subjects in a whole group or small group atmosphere. The chart is a comprehension strategy used to activate background knowledge prior to reading and is completely student centered. The teacher divides a

piece of chart paper into three columns. The first column, 'K', is for what the students already know about a topic. This step is to be completed before the reading. The next column, 'W', is for students to list what they want to learn about the topic during the reading. This step is also to be completed before the reading. The third column, 'L', is for what the students learned from the reading. This step, of course, is done after finishing the reading. The KWL chart can also be used in reading instruction at the beginning of a new unit.

Here is what the KWL chart can look like:

K	**W**	**L**
What I ***know***	What I ***want*** to know	What I ***learned***
Write the information about what the students know in this space.	Write the information about what the students want to know in this space.	After the completion of the lesson or unit, write the information that the students learned in this space.

(i) Things to keep in mind

Materials required can vary on the type of classroom activity the teacher intends to carry. For a classroom activity if the teacher divides the class for a particular topic then 1 paper with KWL chart per group shall be given. But if the teacher wants every individual child to brainstorm on the given topic then every individual shall have their own student paper copy.

In the 'K' column, the teacher has to make sure that she or he has all the questions ready for the students to brainstorm on the particular idea that needs to be taken care in that class. The questions help the students to be prompted to think in specific directions that will lead them to the first

step of brainstorming. Also ask the students the reason of their answers. By this the teacher makes them aware of their associations to the answers. The questions like "what made you think like that?" shall guide them well. In the 'W' column, ask associating questions or liking questions to make them come to the thinking. questions like, "what would you like to learn more about this idea?" can help them to analyze and think more. The teacher here has to come prepared with her/his own set of questions that will link the students' questions to the idea in the text. This is done so that the student shall not lose the flow of the text as well as not lose the purpose of the activity. In the last column 'L', help the students to come out with their own creative ideas and analysis. Also in this particular column, the teacher shall ask the students to differentiate between the answers to their questions and ideas in other columns and the idea they found interesting. At last, the teacher shall help the students to consult other sources which would answer their questions which are not mentioned in the text.

A KWL chart can be used to drive instruction in the classroom. The teacher can create lesson plans based upon the interests and inquiries of the students and their needs. Using this strategy can increase motivation and attention by activating the students' prior knowledge. This allows the teacher to understand the students' prior knowledge and the students' interests in the topic.

(ii) Purpose

A teacher has many reasons for using KWL charts in the classroom. First, a KWL chart activates students' prior knowledge of the text or topic to be studied. By asking students what they already know, students are thinking about prior experiences or knowledge about the topic. Next, KWL charts

set a purpose for the unit. Students are able to add their input to the topic by asking them what they want to know. Students then have a purpose for participating and engaging in the topic. Also, using a KWL chart allows students to expand their ideas beyond the text used in the classroom. By being aware of students' interests, the teacher has the ability to create projects and assignments that the students will enjoy. A KWL chart is a tool that can be used to drive instruction as well as guide student learning. KWL charts are used by elementary teachers from literature to science. They are also used to teach historical content at the elementary level.

(iii) Study tool

A KWL chart can be used as a study tool for an individual, group or entire class. It is a way to synthesize information into a visual aid. The students are also able to keep track of what they have done and what they still would like, or need to do.

(iv) Required materials

Materials required can vary on the type of classroom activity the teacher intends to carry. For a classroom activity if the teacher divides the class for a particular topic then one paper with KWL chart per group shall be given. But if the teacher wants every individual child to brainstorm on the given topic then every individual shall have their own student paper copy.

(v) Specific learners

KWL charts can be used with all students, however there are specific groups of students that lend themselves quite well to this strategy, including visual learners, young learners or ESL learners. As the chart is a graphic organizer it can aid visual learners. The information is presented in a user friendly way that is visually accessible. Due to the

visual nature of the KWL chart it can also be beneficial for young learners such as preschoolers. Words may not be necessary and pictures can be used in order to express the ideas within the chart. As pictures can be used alone or in conjunction with words the KWL chart may provide assistance for students that are learning a second language.

2.1.18 Recognizing and Spelling Words

One of the essential parts of the reading skill is the ability to recognize the written forms of words and to connect them with their spoken forms and of course their meanings. This involves recognizing and deciphering unfamiliar words. A *reading comprehension strategy* is a cognitive or behavioral action that is performed under particular contextual conditions, with the intention of improving some aspect of comprehension. Consider a very simple-minded strategy for purposes of illustration. Teachers often instruct students to look up a word in a dictionary when they encounter a rare word with which they are unfamiliar. The context would be a word in the text that has low frequency or (more generally) is not in the reader's mental lexicon. The strategic behavioral actions would be to hunt for a dictionary and to locate the word in the dictionary by turning pages. The strategic cognitive actions would be to read the word's definition in the dictionary, to reread the sentence in the text with the word, and then to comprehend the sentence as a whole. One way of specifying this *dictionary artifact* strategy is with a context-sensitive production rule that has an IF <condition states>, THEN <action sequence> format, such as the rule below.

(vi) Advantages

According to Jared and Jared (1997), KWL was established with the motive to enhance the comprehensive reading skills of the students. This

was done by designing the three levels of the activity focusing on the different learning styles of the individuals. According to Glazer(1998), students fail to enjoy the text or content because they fail to understand it. Hence, KWL increases their comprehension skills as the activity goes through each topic step by step. According to Szabo(2006), a KWL table uses a strategy of before-during-after for the students to enhance their comprehension skills. The students start by brainstorming the prior knowledge about the topic and then eventually develop curiosity about the topic. This builds their interest in the topic and they would want to learn more about the topic. KWL chart gives an opportunity to the individual to build up self-motivation regarding the topic. Through KWL table, the students go through self-evaluation as they know what they intend to learn and what they really understood. Hence, KWL gives the students some space to explore the topic through other sources and build up their knowledge.

2.1.19 Reading comprehension and students with disabilities

Meaning, learning, and pleasure are the ultimate goals of learning to read. Although fundamental skills such as phonics and fluency are important building blocks of reading, reading comprehension is the “sine qua non of reading” (Beck & McKeown, 1998). Knowing how to read words has ultimately little value if the student is unable to construct meaning from text. Ultimately, reading comprehension is the process of constructing meaning by coordinating a number of complex processes that include word reading, word and world knowledge, and fluency (Anderson, Hiebert, Scott, & Wilkinson, 1985; Jenkins, Larson, & Fleischer, 1983; O’Shea, Sindelar, & O’Shea, 1987).

In the last few years the phonological awareness and decoding skills of students with reading disabilities have been identified as serious

inhibitors to successful reading (Ball & Blachman, 1991; O'Connor & Jenkins, 1995; Vellutino & Scanlon, 1987). Although there is little question that difficulties in these foundational skills impede successful growth in reading for many students, it is also true that many students with learning disabilities have significant challenges understanding and learning from text even when they are able to decode adequately (Williams, 1998, 2000). Explicit and highly structured development of beginning reading skills is required, as is highly structured instruction in reading comprehension (Gersten & Carnine, 1986; Gersten, Fuchs, Williams, & Baker, 2001).

In a landmark reading study, Durkin (1978–1979) conducted an observational study of reading comprehension instruction. She revealed that typical comprehension instruction wasn't very engaging or likely to improve reading comprehension. She summarized reading comprehension instruction as following a three-step procedure: mentioning, practicing, and assessing. That is, teachers would *mention* the skill that they wanted students to use, then they would give them opportunities to *practice* that skill through workbooks or skill sheets, and finally *assess* whether or not they used the skill successfully. Instruction was noticeably missing. Perhaps of even greater concern than the quality of comprehension instruction was the dearth of reading instruction observed. Based on more than 4,000 minutes of reading instruction observed in fourth-grade classrooms, only 20 minutes of comprehension instruction was recorded. This study significantly influenced research in reading comprehension (Dole, Duffy, Roehler, & Pearson, 1991). However, subsequent observation studies revealed little influence on classroom practice (Pressley & El- Dinary, 1997; Schumm, Moody, & Vaughn, 2000; Vaughn, Moody, & Schumm, 1998).

In an attempt to improve comprehension instruction, several theories have been proposed that suggest ways to influence understanding of the teaching of reading comprehension: schema theory, reader-response theory, and direct instruction. A brief description of each of these influential theories provides the background for interpreting the instructional practices related to teaching reading comprehension that are presented in more detail elsewhere in this book.

Schema theory suggests that what we know about a topic or construct influences how much we can or will learn by reading a passage that addresses that topic(Anderson & Pearson, 1984). Thus our knowledge and experiences related to key ideas in the text we read influence what we learn and remember about what we read. World knowledge and word meaning influence our understanding. The more we read and learn about the topic, the easier the next passage on that topic will be for us to understand.

From a reader-response constructivist perspective (Beach, 1993), understanding what is read is related to the individual's experiences and interpretations of these experiences. This subjective component makes for a dynamic interaction between the reader and the text. Thus, what readers learn or how they respond to text is individualistic. Teachers and peers can facilitate and interact with other readers to enhance and extend learning.

Direct instruction approaches have been associated with improved outcomes in reading comprehension for students with learning disabilities (Darch & Kame'enui, 1987; Lloyd, Cullinan, Heins, & Epstein, 1980; Polloway, Epstein, Polloway, Patton, & Ball, 1986; Stein & Goldman, 1980). Direct instruction approaches provide for more explicit and systematic instruction related to the key ideas associated with improved reading comprehension. For example, because word meaning relates to

understanding text, a direct instruction approach would ask teachers to identify key words in a passage and teach their meaning prior to reading.

2.1.20 Good and poor readers

Many of the instructional practices suggested for poor readers were derived from observing, questioning, and asking good and poor readers to "think aloud" while they read (Dole et al., 1991; Heilman, Blair, & Rupley, 1998; Jiménez, Garcia, & Pearson, 1995, 1996). Reports of how good readers understand and learn from text suggest that they coordinate a set of highly complex and well-developed skills and strategies before, during, and after reading that assist them in understanding and remembering what they read (Paris, Wasik, & Tumer, 1991). Perhaps the most succinct way to characterize good readers is to say that they are more strategic than poor readers (Paris, Lipson, & Wixson, 1983). The skills and strategies that good readers use include:

• Rapid and accurate word reading

• Setting goals for reading

• Noting the structure and organization of text

• Monitoring their understanding while reading

• Creating mental notes and summaries

• Making predictions about what will happen, checking them as they go along, and revising and evaluating them as needed

Capitalizing on what they know about the topic and integrating that with new learning

• Making inferences

• Using mental images such as visualization to assist them in remembering or understanding events or characters.

In addition, good bilingual readers are able to draw upon their translation skills, knowledge of cognates, and ability to transfer information across

languages to a much greater extent than struggling readers (Jiménez et al., 1996). These strategies appear to be unique to bilingual reading.

In contrast with the integrated and strategic approaches to understanding text applied by good readers, poor readers use few effective strategies for understanding and remembering what they read (Pressley & Afflerbach, 1995). They are often less interested in reading, their motivation is often low, they prepare minimally, if at all, prior to reading, they use few metacognitive strategies to monitor their learning from text, and they have inadequate vocabulary and background knowledge with which to connect and link new ideas to previous learning. Furthermore, unlike good readers, poor readers lack the decoding, word reading, and fluency skills to free up cognitive functioning so that their full attention can be focused on learning from reading.

1. Teach strategies that have been documented as effective in promoting reading comprehension.
2. Design instruction that incorporates effective principles of direct instruction and strategy instruction.
3. Provide modeling, support, guided instruction, practice, attributional feedback, and opportunities to practice across text types.
4. Monitor students' progress and make adjustments accordingly (Mastropieri & Scruggs, 1997).

Many of the reading comprehension strategies that have been associated with the highest effect sizes for students with learning disabilities are those that teach students strategies that prompt them to monitor and reflect before, during, and after reading. These strategies ask students to (1) consider their background knowledge on the topic they are reading, (2) summarize key ideas, and (3) self-question while they read (e.g., Gersten et al., 2001; Jenkins, Heliotis, Stein, & Haynes, 1987;

Mastropieri, Scruggs, Bakken, & Whedon, 1996; Swanson, 1999; Wong & Jones, 1982) (see Figure 1.1).

Direct instruction, strategy instruction, or a combination of both are associated with the highest effect sizes in reading comprehension for students with learning disabilities. Both direct instruction and strategy instruction have the following components in common:

1. Assessment and evaluation of learning objectives, including orienting students to what they will be learning
2. Daily reviews of material taught to assure mastery
3. Teacher presentation of new material, including giving examples and demonstrating what students need to do
4. Guided instruction, including asking questions to determine understanding
5. Feedback and correction
6. Independent practice and review

The instructional components that contribute the most to improved effect sizes in reading comprehension include:

1. Teacher and students questioning
2. Interactive dialogue between teachers and students and students and students
3. Controlling task difficulty and scaffolding instruction
4. Elaboration of steps or strategies and modeling by the teacher
5. Small group instruction
6. Use of cues to help students remember to use and apply what they learn.

FIGURE 2.1. Key ideas in reading comprehension. Information in this figure is adapted from work conducted by Swanson and colleagues (Swanson, 1999, 2001; Swanson, Hoskyn, & Lee, 1999).

2.1.21 Influence of foundational skills on reading comprehension

These are the phonics, fluency and vocabulary skills. Students with learning disabilities are likely to demonstrate difficulties with decoding, fluency (reading words quickly and accurately), and vocabulary. Difficulty in any of these three areas will interfere with reading comprehension. One reason for this interference is that readers only have so much short-term cognitive, or thinking, capacity for a task. If too much effort is allocated to decoding, little capacity is available for focusing on comprehension.

Myra, Laticia, and Jorge are sixth-grade students identified with learning disabilities who demonstrate significant problems understanding text. Myra has difficulty reading multisyllabic words and still confuses basic sight words such as *from*, *where*, and *laugh*. Although she has difficulty with decoding, Myra is very interested in many topics related to social justice and is motivated to read and learn. Her difficulties decoding words slow down her reading and often require her to read slowly and to reread text in order to understand it. Myra's text reading improves when key words are reviewed and taught to her prior to reading. Laticia, though an accurate word reader, reads very slowly (about 60 correct words per minute). This slow reading negatively influences comprehension and also makes itdifficult for her to read widely. Jorge reads quickly as long as he is very familiar with the words. Jorge's problem is that he does not know the meanings of many words that appear in his expository text for science and social studies. Because he does not enjoy reading, he does not read often, and thus his knowledge of new words and ideas is limited. His very limited vocabulary and world knowledge prevent him from fully understanding what he has read because he either lacks sufficient

background knowledge or misses the meaning of so many words that comprehension on all but a superficial level is difficult.

2.1.22 Dictionary Artifact Strategy

IF <word W is infrequent **OR** Reader does not know meaning of word W> **THEN** <(1) reader gets dictionary, (2) reader looks up word W, (3) reader reads dictionary definition, (4) reader rereads sentence with W, and then (5) reader attempts to comprehend sentence as a whole.>

The production rule formalism helps researchers (and potentially teachers) keep track of the details of the strategies and how the strategies get implemented. Failure to heed such detail runs the risk of misapplying the strategies, an occurrence about which researchers and teachers frequently complain. So the reader might apply the rule too often (when the condition elements are not specific enough) or too rarely (when the condition elements are too constrained). A proper tuning of the condition elements and actions is extremely important. The conditional state might be defined either objectively (i.e., the word is rare in the English language) or subjectively (the reader has never encountered the word before). Objective definitions are needed when building some computer technologies, as in the case of a computer tutor that asks the reader whether he or she knows the meaning of low-frequency words. Subjective definitions are needed when training students on self-regulating their application of meta-comprehension strategies (Azevedo & Cromley, 2004; Zimmerman & Schunk, 2001). The point of presenting this production rule is to illustrate the format and context sensitivity of strategies, not to formulate the perfect well-crafted rule.

Most readers are too lazy to hunt for a dictionary every time they encounter a rare word. There also are frequent occasions when the nearest dictionary is miles away. So an alternative strategy is often advocated by

reading instructors, namely to "infer the meaning from context." A *contextual word definition strategy* might be as follows:

(i) Contextual Word Definition Strategy

IF <word W is infrequent **OR** Reader does not know meaning of word W> **THEN** <(1) reader rereads previous text for definitional clauses, (2) reader reads subsequent text for definitional clauses, (3) reader rereads sentence with W, and then (4) reader attempts to comprehend sentence as a whole.>

This production rule would have obvious predictions about eye movements because the reader would have regressive eye fixations and forward directed movements in an effort to locate definitional clauses. The strategy influences the cognitive actions of eye movements, whereas there is no need for the behavioral actions of hunting for a dictionary.

There are many other potential strategies involving cognitive actions. For example, readers could be encouraged to assign the unfamiliar word to an ontological category (e.g., an animal) on the basis of context (e.g., X ran through the meadow dodging the trees), even though the reader would not be able to reconstruct the particular subclass or exemplar of the word. Sometimes the text provides enough context to infer that the entity referenced by a word has specific attributes (e.g., it is an animal with stripes that lives in Africa), with enough specification for the reader to continue reading further and glean the major points of the text. Indeed, a good reader knows when it is not worthwhile to fuss with a precise meaning, referent, or attribute specification of a word.

Unfamiliar words can also be handled by nonstrategic mechanisms. For example, many researchers have argued that readers infer the meaning of words from co-occurrences with other words in the large corpus of texts they experience (Anderson, 1990; Landauer & Dumais, 1997). The meanings of words do not normally come from explicit definitions or

even from special purpose cognitive strategies during comprehension. Readers ascribe whatever attributes they can to unfamiliar words during reading without their receiving any special-purpose systematic treatment. Accordingly, a strategic treatment of unfamiliar words is a rare or intermittent event rather than the mainstream mechanism. At this point, the jury is still out on the extent to which the treatment of unfamiliar words is handled by strategic versus nonstrategic cognitive processes.

Consider another strategy that has received considerable attention in recent years, namely, the construction of self-explanations during reading (Chi, de Leeuw, Chiu, & LaVancher, 1994; McNamara, 2004; chap. 16, this volume; Millis et al., 2004). When readers build self-explanations, they recruit their world knowledge and personal experiences to make sense out of the explicit text and generate plausible inferences. According to the constructivist theory of text comprehension (Graesser et al. 1994; Magliano, Trabasso, & Graesser, 1999), for example, readers are encouraged to explain the meaning of the text content by generating causes of events, justifications of claims, and other content that explains *why* events in the text occur and *why* the author bothers to mention something. In a story, for example, an action performed by a character should trigger the following *character motive* strategic production rule:

Character Motive Strategy

IF <clause N states that character C performs action A> **THEN** <(1) reader retrieves from memory motives that explain A **OR** (2) reader rereads prior text for clauses with motives that explain A **OR** (3) reader constructs inferences from analogous prior experiences with motives that explain A>

Part of the explanations of characters' actions consists of the goals or motives that drive the actions. A character might attack another character for revenge, survival, rescue of a third character, entertainment, and so

on. There is ample evidence that deep comprehenders construct more self-explanations (Chi et al., 1994; Trabasso & Magliano, 1996) and that comprehension improves from instructions and training on self-explanations (McNamara, 2004; Pressley et al., 1992). However, researchers have not pinned down the relative timing of self-explanations that come from launching the self-explanation strategy, memory retrieval from text (Component 1 in the preceding example), rereading prior text (Component 2), and generating plausible inferences from prior knowledge (Component 3) when applying the character motive strategy.

Once again, the question arises whether strategies and strategy training is really needed to generate motives that explain the actions of story characters. Perhaps a reader's rich body of experiential knowledge is sufficient to cover the motives of pretty much any action that a character performs in most short stories and novels. World knowledge may come to the rescue very quickly, without the need to deliberately and consciously hunt for motives with the same intensity that some readers do when reading a detective novel that is carefully crafted to disguise character motives. Conscious strategies of self-explanation may be superfluous or disruptive when comprehending actions in simple stories. In contrast, when world knowledge is minimal, such strategies may be particularly important and differentiate shallow versus deep comprehenders. For example, such why-questions and explanations become salient whenever instructions are read in an attempt to assemble furniture or equipment. One important research question is how background knowledge interacts with the acquisition, application, and utility of strategic comprehension strategies (McNamara, 2004; Vitale, Romance, & Dolan, 2006).

It is beyond the scope of this introductory chapter to discuss the many theoretical issues and research questions that merit investigation to advance a scientific understanding of comprehension strategies.

However, some of these issues and questions are enumerated in the following list:

1. *What level of representation is being tapped by the strategy?*

Strategies differ when pitched at different levels of representation word meaning, sentence meaning, local text cohesion, mental models, and global structure versus pragmatic communication.

2. *What prerequisite knowledge or skills are needed to apply the strategy?*

For example, jokes are composed with pragmatic content and a rhetorical composition to convey humor, but young children often miss the point of a joke because they lack important wisdom about life or the subtle skills to process the rhetorical level.

3. *What prerequisite knowledge or skills will yield maximal gains from the strategy?*

Attempts to connect clauses in a science text in a cohesive manner can be accomplished to the extent there is background knowledge about the science subject matter.

4. *How much training is needed for mastery of the strategy?*

A 1- to 2-hr training session is not adequate to master most comprehension strategies. It is not sufficient to memorize verbal articulations of most strategies; it normally takes application and practice on hundreds of texts over many weeks and months.

5. *Does the strategy need to be explicit and conscious, or is unconscious induction adequate?*

The question of whether consciousness is required is relevant to the initial acquisition of the strategy as well as the monitoring of a well-practiced strategy.

6. *Does the strategy get executed before, during, or after the mental engagement with the content and subject matter?* The relative timing of

strategy execution, apprehension of text content, and recruitment of subject matter knowledge will no doubt attract the attention of researchers for the foreseeable future.

7. *What are the relevant genres and domain knowledge for the strategy?*

A *genre* is a category of text, such as a folk tale, a science text, or a persuasive editorial in a newspaper. A strategy that attempts to infer author intent is particularly important for a persuasive editorial and less so, if at all, for a science text. A strategy that attempts to construct a mental image would be important when comprehending a text on assembling equipment, but less so when comprehending a mortgage contract.

8. *Is the strategy best scaffolded by a human or computer?* Some strategies are too subtle and complex to expect a computer system to scaffold. It is too tedious for humans to scaffold strategies that are simple and require thousands of practice trials.

Answers to these questions will vary from strategy to strategy. The hope is that researchers will eventually identify some meta-principles after investigating a large landscape of reading comprehension strategies.

2.1.23 Theoretical models of text comprehension

A number of theoretical models for text comprehension have developed in the last two decades by discourse psychologists. Only three of these theories will be considered here in this chapter as governed by limitation of space The researcher will contrast three models, each of which serves as a representative of a particular class of models. A construction-integration (CI) model (Kintsch, 1998) will represent a class of bottom-up models, which would also include the *memory-based resonance model* developed by Myers and O'Brien and their colleagues (Myers, O'Brien, Albrecht, & Mason, 1994; O'Brien, Raney, Albrecht, & Rayner, 1997). A

constructionist model by Graesser et al. (1994) will represent a class of strategy-driven models, which would also include the *event indexing model* (Zwaan & Radvansky, 1998). An indexical model by Glenberg and Robertson (1999) will represent a class of *embodied cognition models* (Glenberg, 1997; Zwaan, Stanfield, & Yaxley, 2002). Of course, there are a variety of other models that are hybrids, such as the *landscape model* (Van den Broek, Virtue, Everson, Tzeng, & Sung, 2002) and the *Capacity–Constrained Construction-Integration model* (Goldman, Varma, & Cote, 1996). I select these three representative models because they offer rather different perspectives on the role of comprehension strategies in reading.

2.1.23.1 Construction-Integration Model

Kintsch's (1998) CI model is currently regarded as the most comprehensive model of reading comprehension. Its remarkably simple computational architecture accounts for a large body of psychological data, including reading times, activation of concepts at different phases of comprehension, sentence recognition, text recall, and text summarization. As will soon be apparent, strategies take a back seat in the CI model. Strategies exist, but they do not drive the comprehension engine. Instead, the front seat of comprehension lies in the bottom-up activation of knowledge in long-term memory from textual input (the *construction* phase) and the integration of activated ideas in working memory (the *integration* phase). As each sentence or clause in a text is comprehended, there is a construction phase followed by an integration phase. A *strategy* is simply a piece of knowledge stored in long-term memory that is periodically activated and recruited during integration. It is mixed in the manifold of hundreds or thousands of other concepts, rules, and content during construction and integration. Simply put, strategies are nothing

special other than being another set of rules that get activated and integrated.

Like most models in discourse psychology, the CI model assumes that multiple levels of representation get constructed during comprehension. Four of these levels are (a) the surface code, (b) the propositional textbase, (c) the situation model, and (d) the text genre. The *surface code* preserves the exact wording and syntax of the sentences. The *textbase* contains explicit propositions in the text in a stripped-down, logical form that preserves the meaning but not the surface code. The *situation model* (sometimes called the *mental model*) is the referential content or microworld that the text is describing. This would include the people, objects, spatial setting, actions, events, plans, thoughts, and emotions of people and other referential content in a news story, as well as the world knowledge recruited to interpret this contextually specific content. The *text genre* is the type of discourse, such as a news story, a folk tale, or an encyclopedia article. When comprehension succeeds, the representations at all of these levels are harmoniously integrated, yet there is no intentional strategy on the part of the reader to make this happen. It simply falls out naturally from the CI mechanism.

2.1.23.2 Constructionist Model

Strategies play a prominent role in the constructionist theoretical framework proposed by Graesser et al. (1994). The distinctive strategies of this model are reflected in its three principal assumptions: (a) reader goals, (b) coherence, and (c) explanation. The *reader goal assumption* states that readers attend to content in the text that addresses the goals of reading the text. When a computer manual is read, for example, it is read very differently when the reader wants to purchase the computer than when the reader wants to fix a broken hard drive. The *coherence*

assumption states that readers attempt to construct meaning representations that are coherent at both local and global levels. Therefore, coherence gaps in the text will stimulate the reader to actively think, generate inferences, and reinterpret the text in an effort to fill in, repair, or take note of the coherence gap. The *explanation assumption* states that good comprehenders tend to generate explanations of why events and actions in the text occur, why states exist, and why the author bothers expressing particular ideas. Why questions encourage analysis of causal mechanisms and justifications of claims. There are other assumptions of the constructionist theory that are shared by many other models, assumptions that address memory stores, levels of representation, world knowledge, activation of nodes, automaticity, and so on, but its signature assumptions address reader goals, coherence, and explanation. The constructionist theory has generated a number of predictions about reading times, inference generation, recall of text information, and summarization; as in the case of the CI model, many of the predictions have been tested and supported, although support for the constructionist model is not as extensive as for the CI model.

The notion that coherence and explanation strategies are the hallmarks of good comprehension places constraints on comprehension. These strategies determine the selection of content that gets encoded, the inferences that are generated, and the time spent processing text constituents, and so on. Good readers attempt to bridge incoming sentences with previous text content and with their background knowledge. Good readers are driven by why-questions more than how, when, where, and what-if questions, unless there are special goals to track such information. The explanations of the motives of characters and of the causes of unexpected events in a story are much more important than the spatial position of the characters in a setting, what the character looks

like, and the procedures and style of how characters' actions are performed. Such details about space, perceptual attributes, and actions are important when they serve an explanatory function or they address specific reader goals. When readers are asked to monitor why-questions during comprehension, their processing and memory for the text are very similar to normal comprehension without such orienting questions; however, when asked to monitor how-questions and what happens- next-questions, their processing and memory shows signs of being disrupted (Magliano et al., 1999). Explanations and why-questions are fundamental to the construction of meaning according to the constructionist model. Research on self-explanations, as in the case of Self-Explanation Reading Training (McNamara, 2004) and iSTART (see chap. 16, this volume; McNamara, Levinstein, & Boonthum, 2004), are compatible with this theoretical position, although the precise content that is affiliated with self-explanations is not necessarily restricted to answers to why-questions.

2.1.23.3 Indexical Hypothesis and Embodiment

Glenberg's *indexical hypothesis* will, for the present purposes, be elevated to the status of a model, because preliminary sketches of a bona fide model are emerging in Glenberg's research program and in Barsalou's (1999) perceptual symbol system. These theoretical positions adopt an embodied theory of language and discourse comprehension. The central theoretical claim is that meaning is grounded in how we use our bodies as we perceive and act in the world. Comprehension of a story is predicted to improve after children have been able to perceive and manipulate the characters and objects in a story scenario. When adults read a manual on assembling a piece of equipment, their comprehension is expected to improve to the extent that they can enact the procedures or

at least form visual images of the objects and actions. Readers who have the metacognitive strategy of grounding the entities and events mentioned in the text are expected to show comprehension advantages over those who do not bother taking such extra cognitive steps.

A major point to be made, from the present standpoint, is that the predictions on the effectiveness of strategies on comprehension are dramatically different for the constructionist model and the indexical model. The indexical model would encourage comprehension strategies that involve the construction of mental images of people, objects, spatial layouts, actions, and events expressed in the text. The constructionist model would not encourage these strategies unless they serve the master strategies of building explanations, coherent representations, and representations that address particular reader goals. Indeed, these theoretical models are hardly redundant articulations of the same phenomena with different jargon. Instead, the predictions are decisively different! Perhaps both of the models have some validity, but for different types of texts and comprehension conditions. That is a matter for future research to decide.

2.1.24 Importance of Reading Comprehension

Reading cannot be viewed in isolation of comprehension; reading is nothing more than tracking symbols on a page with your eyes and sounding them out. Imagine being handed a story written in a language you totally ignore like Sumerian Cuneiform with no understanding of their meaning. You may like the look of the letters or characters and appreciate the words aesthetically and even be able to draw some small bits of meaning from the page, but you are not truly reading the story. Byrne (1971) in English Teaching Extracts writes that the words on the page have no meaning. They are simply symbols. People read for many

reasons but understanding is always a part of their purpose. Reading comprehension is important because without it reading doesn't provide the reader with any information.

Beyond this, Brown (2000) confirms that reading comprehension is essential to life. Much has been written about the importance of functional literacy. In order to survive and thrive in today's world individuals must be able to comprehend basic texts such as bills, housing agreements (leases, purchase contracts), and directions on packaging and transportation documents (bus and train schedules, maps, travel directions). Cal Pham (1996 p.30) on Reading Comprehension says reading comprehension is a critical component of functional literacy. Think of the potentially dire effects of not being able to comprehend dosage directions on a bottle of medicine or warnings on a container of dangerous chemicals. With the ability to comprehend what they read, people are able not only to live safely and productively, but also to continue to develop socially, emotionally and intellectually.

2.1.25 Types of Reading Comprehension

Certainly the process of reading comprehension is a multi-component, complex process involving many interactions between the reader and what they bring to the text (previous knowledge, strategy use), not to mention the variables interspersed in the text itself and which are inseparable from it and essential for fuller understanding (interest in the text, understanding of the types of texts).

While many middle school, high school, college students –and even adults have learned to read, some will struggle with reading for meaning. To be able to read effectively, these students have to have a good grasp of explicit strategies to use during the process of reading. The strategies are essential for gaining and remembering information from the texts. Good

readers are capable of identifying the right types of strategies that readily work with them and know how to apply them to different types of texts. The unfortunate group of those still battling with reading can improve their reading comprehension skills by being exposed and taught strategies, as well as when and how to use them with different types of texts. Consider the following list of strategies which can produce a positive effect on the students' reading comprehension having been taught adequately.

•Discovering Main Idea

•Identifying Detail

•Sequencing Events

•Using Context

•Getting Facts

•Drawing Conclusions/Predicting Outcomes

•Distinguishing Between Fact and Opinion

•Understanding Cause and Effect

•Identifying Figurative Language

•Identifying Bias and Prejudice

•Using Prior Knowledge

•Identifying Bias and Prejudice

•Using Prior Knowledge

•Comparing and Contrasting Ideas

•Generating and Answering Questions

•Identifying Inferences

•Summarizing Concepts

•Understanding Vocabulary

•Visualizing Ideas

•Determining Author's Purpose

•Understanding Point of View

Undoubtedly, employing the above exhaustive list after conducting good training for the students can improve their understanding of the reading texts. When a student's reading hurdles are identified in relation to the above cited strategies an effective program can be designed to improve these skills.

2.1.26 Reasons for Reading

According to Barnet (1989) –

> "Nothing is more important to academic achievement than being a good reader, the basic concept in that text information based in part from the prior knowledge available to the reader. Reading is thus viewed a kind of dialogue between the reader and the text".

Any kind of language pogramme for students is likely to enjoy, no matter the nature of that program may be, as long as it serves immediate needs for the learners. Reading comprehension can be very pleasurable. When readers begin to read, actually a number of decisions are quickly made, almost un consciously in most cases, for example, when a reader picks up a newspaper, a reader usually reads the front page with some combinations of search processing, general reading comprehension and skimming.

So there are many reasons why getting students to read English text is an important part of the teacher's job. In the first place, many students want to be able to read text in English either for their careers, for study purposes or simply for pleasure. Harmer (2010:100), states-"Reading is useful for language acquisition", provided that student, more or less, understands what they read. The more they read, the better they get at it.

Reading also has appositive effect on students, vocabulary knowledge, on their spelling and on their writing.

Reading texts also provide good models for English writing. At different times students can be encouraged to focus on vocabulary, grammar or punctuation. Reading material can also be utilized to demonstrate the way we construct sentences, paragraphs and whole text. Students then have models for their own writing.

2.1.27 Reading Stages

Reading is a process which is based on certain diverse levels. Teachers must have materials to cater for all these levels. Below is an attempt to illustrate the different levels.

2.1.27.1 Word Level

At the word level, the teacher gives students practice in the association of forms and sound symbols, spelling and sound symbols He specially draws the students attention to the fact that not all sound are represented orthographically the same way. A useful classroom technique which can be used in this particular stage is the flash card. During using flash cards, the teacher firstly pronounces the sound and student repeat he then, shows the card and repeats its sound. After that all class in groups and individually repeat the sound. The word is tested by showing a card for a short time until some students say the right sound.

2.27.2 Sentence Level

At this level, the teacher gives students practice in reading sentences to learn from dialogue material. Dialogues are particularly useful for helping students to detect the meaning of different words comprising the sentence and hence the meaning of the sentence. At the sentence level, students

also learn the different sound patterns such as the stress and the intonation. This can best be demonstrated through the use of a recorded material.

The techniques for teaching reading at this level are as follows:

a -The teacher presents the students with sentences containing the lexical items they already know.

b -The teacher writes sentences on the board for student to read.

c -Students may practice reading sentences in language laboratory or with cassette / tape recorder etc.

d- Songs are useful in improving student's pronunciation, rhythm and stress.

2.1.27.3 Paragraph Level

A paragraph is a group of sentences which make a meaningful unit. At this stage, students are introduced to simple narrative or conversational materials. This is done under the guidance of the teacher who often uses the text book. The teacher may prepare sheets of texts which students read, or use overhead transparencies on which he writers reading sections.

2.1.27.4 Reading Longer Sections

Students, reading activities at this level may be classed as intensive and extensive. The first is what students have in the course book, whereas the second reading is for enjoyment and general information. In order to develop reading skills, students need to make their selections longer.

(Elmutawa and kaillani, 1989:107) state –

> "As progress in learning the language needed for reading, they should read longer sections in addition to guided reading passages students should be offered a choice of reading and select topics which interest them".

From the above quotation, reading longer selections enable students to enjoy guided reading passages, select topics which interest them and help further develop their reading skill.

2.28 Reasons for Teaching Reading

The essential purpose of teaching reading a second or reading a second or foreign language in schools is to encourage students to be effective readers in the second language. The educational institutions should take this responsibility in account. They have to provide authentic and motivating texts that increase students' interest in reading widely outside classroom.

Actual participation of students in reading activities in classrooms can be important factors in this issue. Moreover, teaching reading strategies in the classroom should be directed towards encourages students to develop their reading competence.

Literature serves this purpose effectively with purpose of developing language proficiency. Aebersold and Field (1997:156) outline the objectives of using literary texts in teaching reading, as follows:

A .To promotes cultural understanding.

b. To improve language proficiency.

c. To give students experience with various text types.

d. To provide lively, enjoyable high-interest readings.

e. To personalize the classroom by focusing on human experience and needs.

f. To provide an opportunity for reflection and personal growth

2.1.29 How to teach Reading

Teaching implies a simple passing on of knowledge from teacher to student, as in teaching names and dates in a history class. But teaching reading is different because it requires developing certain skills in the learner. Therefore; the teachers' intention should be to help the students become skilled readers.

A good reading class must include extensive reading as well as intensive reading, that is, as much outside reading as possible, even though that outside reading may have to be a reading simplified text.

The point of reading class must be reading not reinforcement of oral or discourse analysis, and not the acquisition of new vocabulary. Improvement in any of these areas can make reading easier, but none of them is reading. It is better for students to read a great deal of very easy material than a few pages of some "classic "that they cannot really read and understand.

2.1.29.1 Choosing Reading Texts

According to Rivers (1981:262) “the essential aim of choosing texts may be to achieve language proficiency”. Texts should be “language focused”, i.e. Not just reading but for teaching language formally and functionally in classrooms.

Some teachers argue that the experience with a considerable quantity of reading materials is essential to expand student’s knowledge and give them experience with a much wide range of expressions and structures than they could gain from listening and speaking, which are limited to time spent in classroom.

It is preferable in selecting reading texts, for English language classroom, to select these texts that are interesting, highly motivating for learners and adequate to their language level so as to facilitate language learning.

Recently, the use of authentic materials has become common in classroom activities. Mingo (cited in Wallace 1993:79) interprets "authentically "as including "original pieces of written or spoken language which occurred naturally between native speakers and could therefore, be accepted as "genuine communicative acts".

2.1.29.2 Interest

The most important factor in selecting a reading material is interest. William (1986:42) states that *"In the absence of interesting text, very little understanding can occur…"* Carrel (1984:339) says *"First, teachers of reading should use materials the students are interested in, including materials self – selected by the students"* Nuttal (1982:29) refers to interest as "suitability of contents". She claims that, *"Choosing text that suit students' interest is more critical…"*

Interest is an important factor, because of its relation to motivation. When the topic of a passage does not suit the students' interest, their motivation to read is substantially lessened.

As part of the effort to find an interesting reading material, Nutal (Ibid.) recommends that, "the teacher attempt to discover if the passage will:

A .Tell the students new information they don't already know.

b. Introduce the students to new ideas that make them think about things they haven't thought about before.

c. Help the students to understand the way other people think.

d. Make them want to read for themselves.

There are numbers of approaches to determine learners' interest, as: Ranking and Open- end ranking.

The teacher asks the students to rank their preferences.

And present an open- end questionnaire in which the students respond to many questions. Nuttal (Ibid.) says that: *"paying attention to the materials students read in their language".*

2.1.29.3 Exploitability

Exploitability is defined as facilitation of learning as key factor in selecting reading texts. One way to decide the exploitability of a reading text to develop reading skills, is to discover the author's point of view on his / her critical idea about specific information mentioned in the text furthermore, the text can be exploited for various activities to the reader's needs.

2.1.29.4 Topic

The topic of a reading article is an important factor to be considered. The readers feel that, a wide variety of topics would be helpful to maintain their interest and motivation. Therefore, a topic helps the students to read in depth. There are three techniques for reading depth, to provide background knowledge using anthology built around a particular theme, dividing long text into shorter sections.

2.1.29.5 Length of the Text

The final factor of readability concerns the length of potential reading passage. That means, the appropriate number of words include the length will affect the rapid reading ability. The reader will not be able to control his understanding, so he will be confused. Therefore, readers will be unable to finish according to time give for them. As a result of this, the

readers would be frustrated, they may blame themselves that they are poor readers. So, one technique that helps the students to avoid this burden is to give them ample time to read the text.

2.1.29.6 Readability

The factor of readability as that of exploitability ranks as one of the most basic consideration for reading improvement. In selecting a reading text, Carrel (1987:223) uses the term readability to refer to the following phenomena *"...syntactic appropriateness, logical, rhetorical ordering of ideas and external phenomena at the discourse level, lexical appropriateness, and background knowledge of the reader".* She serves this term only for syntactic and lexical consideration. So, readability is affected by the following:

a. Lexical knowledge: lexical knowledge and background knowledge are two important elements that determine a text's readability. It is clear that a number of unknown lexical items in reading a text create more difficulty for readers to read with understanding.

However lexical knowledge is among the more controversial factor in selecting a reading text. The difficulty comes from two issues involved with lexical knowledge. The first concerns how to determine the degree of difficulty of the vocabulary of reading materials.

The second is the number of unknown words that is acceptable in a reading text. So, one way of assessing students' vocabulary is through the use of reading skills exercises, whereby students identify the difficult word in the passage.

Nuttal (Ibid.):26) says: "new lexical items as words idioms or compared phrases" and recommends that in an intensive reading. A passage should contain no new word because learners cannot respond favorably to unknown items". However, if one the objective of reading lesson is to

teach learners to guess the meaning of the unknown lexical items that only a maximum of no more than one or two words should exist per-page. This recommendation must be taken into account to improve the students' reading ability.

b. Background knowledge: background knowledge is very important in the readability of a text. The more reader knows about a particular topic of a text, the more quickly and accurately he can read the text.

Alderson (2000:56) has demonstrated that, background knowledge plays a key role in the comprehension of reading a text by advanced learners. Since the background knowledge of the reader plays a critical role in his comprehension of the passage, teachers should make sure that the passage is on a topic that is known to their students.

That factor of background knowledge in reading a text is seen as an issue of course designs. So, to overcome the problem, three or four themes over the course of reading programmer.

c. Syntactic appropriateness: The syntactic of sentence affects their readability.

Construction of syntactic affects the reading of the text. That means, if a reading text contains complicated grammatical constructions, the reader might find them difficult to understand.

Therefore, readers generally, use readability in first language reading lessons often in target language reading as a means of determining the level of syntactic complexity.

2.1.30 Strategy invention in preschool

The ability to read and comprehend is critical not only for lifelong learning but also for adequate functioning in society. Despite enormous efforts from

researchers, educators, and policymakers to promote reading for all children, many children fail to reach functional levels of literacy. Thus, it is critical to understand the nature of young children's early developing language comprehension skills, how they differ from other language skills, and how one can stimulate the development of these skills so that children will be better prepared to excel in reading comprehension when they are formally learning how to read in school.

In this part of the chapter focus will be drawn on the development of language comprehension skills in preschool and then follow the course of comprehension development in children as they become elementary readers. Our discussion is based on the main findings from a longitudinal study we have been conducting with children from ages 4 to 10. From a theoretical point of view, the findings from this study contribute to our understanding of very young children's development of comprehension skills and the developmental path of comprehension skills from pre-reader to reader. From a practical point of view, the findings from this study have important implications for the design of interventions and strategy instruction that help develop and foster comprehension skills at an early age, well before a child is able to read.

2.1.31 Development of comprehension skills

Comprehension means different things to different people. Indeed, comprehension is not a unitary phenomenon but rather a family of skills and activities (Kintsch & Kintsch, 2005; Rapp & van den Broek, 2005; van den Broek et al., 2005). The different types of comprehension share a common core set of processes. A general component in many definitions of comprehension is the interpretation of the information in the text, the use of prior knowledge to interpret this information and, ultimately, the construction of a coherent representation or picture in the reader's mind

of what the text is about (e.g., Applebee, 1978; Gernsbacher, 1990; chap. 1, this volume; Graesser & Clark, 1985; Kintsch & van Dijk, 1978; Mandler & Johnson, 1977; Stein & Glenn, 1979; Trabasso, Secco, & van den Broek, 1984). This representation is the foundation from which the reader can retell the story, apply knowledge that has been acquired from the text, identify the theme, and so on.

For adults, the process of understanding written material is automatic in many circumstances, so most of the time we are not aware of the processes we use. During reading, with little or no effort, we identify letters, map letters onto sounds, decode words, understand individual sentences, and make inferences that interconnect different parts of the text (Oakhill & Cain, 2003; van den Broek, 1994). With slightly more effort, we draw connections between the text and our prior knowledge, identify themes, and apply the information we acquire from the text in new situations.

At the core of comprehension is our ability to mentally interconnect different events in the text and form a coherent representation of what the text is about (Trabasso et al., 1984). We can identify different types of connections between events in the texts such as causal, referential, spatial, and so on (Graesser, Singer, & Trabasso, 1994; van den Broek, 1997). Causal connections have received considerable attention in previous research and are believed to be central in the comprehension process (Mandler & Johnson, 1977; Stein & Glenn, 1979; Trabasso et al., 1984). Consider, for example the following set of sentences:

El Niño brings bad times to the coastal cities.

The warm water from excessive rain has less oxygen and nutrients.

Millions of different kinds of fish die.

Thousands of bird varieties starve to death.

When reading this set of sentences, one likely makes a number of causal inferences. Even though is not explicitly stated, one can infer that El Niño entails excessive warm rain. One can also infer that fish die because the warm water has less oxygen. Birds starve to death because fish die and there is not enough food for them. Furthermore, one can also infer that the main cause of all this destruction is El Niño.

When adult readers generate inferences and identify these types of causal connections in the texts they read, they form a mental network representation of the text. Consider, for example, the short story about Tuk the hunter depicted in Figure 2.1. Each sentence in the story is represented in the network as a circle with the corresponding number. The arrows between the circles represent the causal connections between the sentences that the reader may identify.

1. This is the story of a boy named Tuk (took)
2. who lived in the Artic.
3. He wanted to show that he could be brave by hunting for big animals
4. like his father who was a great hunter.
5. Some people do not like idea of hunting.
6. but Tuk’s family relies on animals for most of their food and clothing needs.
7. For Tuk’s family, hunting is a matter of survival
8. and can be dangerous.
9. Although Tuk was still too young to go on hunting trips
10. and prove how brave he could be,
11. he listened carefully to everything his father told him
12. and was given many of the hunting chores.
13. He helped ready the dogsled for each trip
14. and had learned how to sharpen the hunting spears and knives.

Part two

2.2Previous related works

For providing more literature review the researcher will present, some relevant dissertation and studies connected to this study and which have been chosen from different places and times. Doubtless these dissertations had great value and effect in providing the researcher with the relevant literature, designing tools and procedures use to collect data. Results and recommendations of the previous studies, on their part helped the researcher a lot in the present study. The aim of the chapter therefore is to provide a thorough review of the contribution of some previous studies in the field of teaching reading strategies and reading comprehension.

The first study in this juncture is one entitled "Teaching English Reading Skills at the University Level"An unpublished M.A thesis in ELT, University of Gezira, and Faculty of Education 2000.The study aimed at helping students to identify different purposes of reading and master strategies that are suitable to achieve these purposes. It aimed also at helping the learning of English language to understand and read more effectively and become skilled reading.

The population of this study consisted of students that the faculty of educational sciences – El Kamleen University of Gezira. The sample consisted of (a) (40) non-specialized student in the faculty of educational sciences who have taken part in providing the necessary data, the since they don't know the significance of the reading ability. (b) Other (28) specialized student in English department faculty of education sciences Al Kamleen. They are experienced teacher are involved in the study by considering their views, comments and judges in the questionnaire.

The second study was conducted by Abd Allah Adam Algazoly is entitled 'developing University Teaching Method to Improve reading skill in English' it is an unpublished M.Ed. thesis in ELT, Sudan University of science and Technology, College of Graduate studies 2008. The study aimed at improving teacher's mode in order to teach EFL reading efficiently. It aimed also at investigating the difficulties, which faced student in teaching reading comprehension in L_2.

The population of this study was the teacher of English language department at Sudan University of science and Technology. It consisted also of the teachers of English language department of Alzaiem Al azhari University. The sample of this study consisted of (30) teachers at Sudan University and Alzaiem Al azhari University who have taken English language as a major subject. In this study the researcher used questionnaire to collect data. The main finding of this study as follows:

a) Teachers of English language find difficulties in teaching reading comprehension.
b) Teachers of English give less attention to the techniques and strategies of reading skill in the process of teaching compressions.
c) The majority of teachers agree that teachers must be trained well so as to use the strategies of teaching reading comprehensions.

This study is directly relevant to the present study since it focuses on teaching reading comprehension. This study and the present study are similar, because they show the importance of strategies of reading in teaching reading comprehension.

The third study by Bilal Elimam Hammed is entitled "the effects of schema theory on understanding reading comprehension texts" It is unpublished PhD thesis, Omdurman Islamic university 2005.

The study aimed to investigating the role of the back knowledge in comprehending English text s and the effect of age and experience in building up schema.

The population of this study was the English mature students at White Nile Ahlia College and students at faculty of medicine and arts specifically English and history section first level. The sample of this study was (200) subjects. The study adopted two testes of gathering data.

The main finding showed that the medical students were fast and better in test two than in test one, however, the Ahlia students, results are positive in both test one and test tow because of age and experience.

There is a big difference between this study and the present study is that this study confirmed the importance of the role played by schemata in understanding English texts. And effect of age and experience in building up schemata while the present study focuses on the role of reading strategies in comprehending English text.

This difference between the two studies is important; it helps the researcher to find further idea and suggesting solution to help the learner in understanding English reading texts.

The fourth study by Abbas Abdel rahman Babiker Al Ansari is entitled "The impact of strategies on reading comprehension. It is unpublished PhD thesis, Omdurman Islamic University 2005.The study intended to investigate the impact of reading comprehension strategies of Sudanese University student, silent reading comprehensions performance. It also aimed at investigating the relationship between these strategies and efficient silent reading comprehension of English at the first international language of science and technology.

The population of the study were (275) the first year entrants at different faculties and universities. It consisted also (150) teachers form basic and secondary levels. The sample of the study was chosen from larger population of the study. The data of the study were gathered by two measuring instruments:

a) Test designed for two hundred seventy five (257) first year university entrants at different faculties and universities.
b) Questionnaire given to one hundred and fifty (150) teachers from basic and secondary levels.

The results have revealed that teachers both levels of education (basic and secondary) are unaware of the significant impact of reading strategies. This study is very important since attempts to analyze the impact of strategies on reading comprehension. The similarity between this study and the present study is that they both deal with role of reading strategies in comprehending English written text but they differ in areas such as population, sampling etc.

The fifth study was conducted by Hajer Alamin Youssef Alamin is entitled "Teaching English Reading Skills at up graduate Level". It is unpublished Med thesis El Neelain University, Graduate College, and English department 2005.

The study aimed at enabling university students to improve their reading comprehension with special emphasis on reading skills. It aimed also at examining the impact of reading skills techniques and cast a light on the significance of efficient techniques, and kind of reading skills and successful reading. The population of this study consisted of Omdurman as a town to generate the study problem results; the population chosen for this study is drawn from two different universities in Omdurman, (168

students) using third year students , therefore to achieve the aim of the study the researcher has adopted a descriptive method using oral and written tests and questionnaire. The sample of this study was randomly chosen. It consisted of (100) subjects divided into two groups:

a) University of Khartoum, faculty of education group, consisted of (58) students (36) males and (14) female, third year.
b) Islamic university, faculty of education group, this group consisted randomly of (50) student, who were studying English for academic purposes.

The researcher reached up to the following findings:

a) Students come to university with weak standards.
b) The materials in reading course relate the students to their culture.
c) Students don't take reading course seriously that means they don't give it enough care, attention and time.
d) The results showed that English language teachers' at the universities use and encourage the students to participate the most of the techniques that suit the student's need and interest.

The significance of this study stems from the fact that EFL learners at university level face many difficulties in reading and comprehending English text, because of mentioned results.

The sixth study By Osman Elamin Abdlulgadir Elnur is entitled "Reading speed and comprehension at basic and secondary levels". It's unpublished M.A thesis, AL Neelain University, faculty of Arts, 2004.
This study aimed at:

a) Identifying the roots of the problem of reading speed and comprehension.

b) Finding solutions for improving reading speed and comprehension.
c) Providing learning and teaching strategies through highlighting the skills of reading speed and comprehension.
d) Drawing the attention of teacher to the importance of the skill of reading speed.

The population of this study consisted of third year secondary school students and eight from basic school students. The sample of this study was chosen from both basic and secondary levels were examined through comprehension passage, and some English teachers of both basic and secondary levels who have taken part in providing the necessary data through the questionnaire.

In this study the following tools were designed to collect data:

a) Test for the students and questionnaire for teachers. The findings of the study were as follows:

a) The skill of reading speed was totally neglected by the teachers of English in all levels.

b) Students ignored reading speed because teachers neglected it.

c) Fast readers comprehended better than slow ones.

The study and the present are similar in the sense that they both investigate in reading and comprehending English texts. The obvious differences between the two studies used different population, samples and tools. The first researcher using secondary school students and basic while the latter using university students.

The seventh study was By Ibrahim Mohammed Al-Sabateen is entitled "The effect of lexical, grammatical and cultural background on reading comprehension". It is unpublished PhD thesis, Sudan University of Science & Technology 2008.

The study aimed at investigating the effect of lexical, grammatical and

cultural background knowledge on reading comprehension. It also investigates if there are significant differences between subjects performance. In reading and comprehension that can be attributed to sex and to general ability in English. The population of this study consisted of all first year students majoring m English language at Hebron University in the first semester of the academic ؛¡rear 2006-2007, they were 600.

The sample of this study consisted of 120 subjects, males and females chivied into four groups, two experimental and two controlled.

The researcher followed the experimental method. He gave the first experimental group fire lectures of lexis and syntax while the first controlled group was not given any lecture. The researcher gave the second experimental group five lectures on American culture while the second controlled group was not given any lecture. The results are as follow:

a) There are statistically significant differences in performance in reading comprehension between subjects who have lexical and grammatical knowledge and who don't have any knowledge.

b) There are no statistically significant differences in performance in reading comprehension between male and female subjects who have lexical and grammatical knowledge and those who do not have any knowledge.

c) There are statistically significant differences in performance in reading comprehension between subjects who have cultural background knowledge and these who do not have any knowledge.

d) There are no statistically significant differences in performance in reading comprehensions between male and female subjects who have Cultural background knowledge and those who do not have any knowledge. The results of the study revealed that the null hypothesis have been ejected, while, the hypotheses which concern the effect of lexical,

grammatical and cultural background knowledge on students' performance in reading comprehension according to sex have been confirmed.

The eighth study was conducted by Mahgoup Daffa Allah Ahmed is entitled "Efficient EFL reading at Sudanese secondary schools". It is unpublished M.A thesis, Sudan University science and technology 2005.

The study aimed at improving the teachers' mode in teaching EFL reading efficiency and to help students to read and comprehended in an efficient and effective way. Therefore it sought to shed the light on all aspects FL reading the attitude, training and experience of teachers and their s of the performance of secondary school students. The study also investigated the views of experts about the means of teaching efficient EFL g in Sudanese secondary schools. The population this study consisted of 15 secondary schools teachers' sample of this study consisted of 300 students in 3rd class studying at geographical schools in the state of Khartoum. The data of this research is empirical study of different statistical and tests and questionnaire.

The results:

The purpose of this study was to investigate why the performance of students in EFL reading in secondary schools was not satisfactory. Therefore, framework was viewed in the light of problems and difficulties that face Secondary schools, teachers and students in EFL reading.

This study is very significant, for it is one of the few studies which have been conducted in the sphere concerning efficient EFE reading at Sudanese secondary schools. The big difference between this study and the present study is that, this study investigates the efficient EFL reading at Sudanese secondary schools while the present study investigate the reading strategies in comprehending English language text.

The ninth study was carried out by Jamal Ahmed Ibrahim Mansur is

entitled “Developing reading skill in the pupils at the intermediate stage in the United Arab Emirates”. An unpublished M.A thesis, Sudan University of Science and Technology 2004.

The purpose of this study was to develop the reading skills of the pupils I at intermediate stage, specially the first year pupils. The researcher studied the reading skill in depth so as to find out the causes of the deterioration in the reading of first year pupils in a trail to arrive at the solutions which might help teachers of English language to improve reading and comprehension English texts.

The subjects of the study were (54) girls and 65 boys they were given two reading comprehension passages as a test to measure their reading comprehension skill, and the researcher found that the girls scores were . higher than boy's scores in reading comprehension and that girls like reading English more than boys.

The researcher used in his research the Descriptive Analytic method. His tools for collecting data included: Tests, an affective questionnaire and personal contacts.

The findings of the study: It is quite clear that the results of the data analysis strongly justified the acceptance of the first hypothesis that there is a decline in reading comprehension skill of the first year preparatory intermediate stage. The study showed that the matter of transfer, good readers lake appositive transfer from 11 to 12and that was the second hypothesis, he result was approved by Abdel Malik (1983) Rod Ellis (1997) and many others. The similarity between this study and the present study was that both of them were in the area of developing reading skill of EFL learners.

The tenth study was conducted By Ibrahim Eltayeb Mohamed is entitled

"EFL students, attitudes towards using L2 in teaching reading comprehension in EFL class" An unpublished M.A thesis, university of Khartoum 1999.

The study aimed an investigating EFL student' attitudes towards using Arabic in EFL class room and towards using a monolingual dictionary and bilingual one. It also tried to identify the linguistic areas where Arabic can be effectively used specially in reading comprehension.

The subjects of this study were Sudanese second year EFL students the faculties of Arts and Education. However the students of Education have Started study English in the second semester of the first year whiles those of study in the first semester in of the second year. Results of the research have revealed that the mount of Arabic is 35% of the whole teaching methodology employed in this amount is used only when attempts in English have failed.

Furthermore the analysis of questionnaire showed that the amount of needed to be used mainly in explaining idiomatic expressions and it also used in explaining new words abstract words and comprehensible sentence.

The eleventh study was carried out by Yasser Ali Amin is entitled "The reading comprehension in spine special reference to inference". It is unpublished M.A thesis, of Khartoum, faculty of Arts (1999). The Study aimed at investigating reading texts and their exercises in to find out their effect of the ability of the students to infer the unknown words from the context and the main idea of the context.

The population of this study consisted of third year secondary school students and the sample of this study were chosen randomly consisted of students and forty secondary school teachers of English.

The method of the study is based on a test and questionnaire in addition an

analysis of the reading activities in spine six with special reference to inference carried out. The test is used to measure the students' ability to infer meaning known words, while the questionnaire is used to extra information relevant. The main findings of this study included the following:

a) There is a deficiency in the ability of the students to infer meaning of unknown words.

b) Reading material in spine six doesn't satisfy the student's interest in reading.

c) Sine six does not provide adequate aids with the reading texts.

The twelfth study was conducted by Hayat Abdel Bagi Ahmed Mohamed is entitled "problems of reading skills at basic level school". An unpublished M.Ed. thesis, university of Gzira, faculty of education Hassaheisa 2005.The study aimed at training students to read efficiently and quickly ugh to get information or meaning from written material with full understanding. It aimed also at motivating teachers of English language to expose their students to read and understand. The population of this study consisted of fifty basic level teachers. The sample of this study is chosen or selected randomly from the Basic level Schools teachers who have taken part in providing the necessary data through questionnaire. The research findings were as follows:

a) The majority of the respondents agreed that both visual, aids and phonetic drills makes meaning clear and understand.

b) The majority of teachers agreed that mispronunciation occurs in aloud reading. This means that correct pronunciation is the most important point for the teacher.

Summary:

This study and present one are similar in the sense that they both investigate problems facing learners in reading skills and understanding written materials. The clear difference between the two studies is that each study has different population, sample and tools. The first research investigated the problems of reading at Basic School Level; other investigated them at the university level.

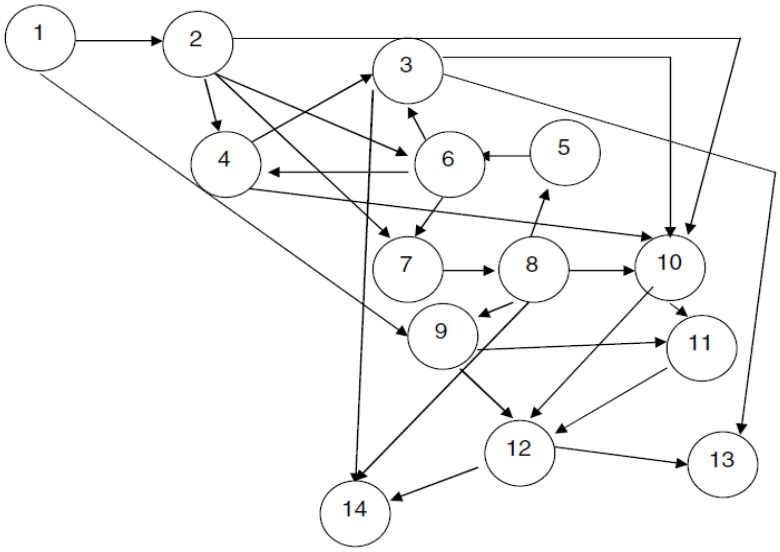

Figure 2.2. Excerpt from "Tuk the Hunter," the written story used in Year 3 of the longitudinal study and the causal network.

For instance, when reading the story we may make the inference that Tuk's desire to become a brave hunter (sentence 3) causes him to want to prove how brave he could be (sentence 10), which in turn causes him to listen carefully to everything his father told him (sentence 11). The network representation in Figure 2.1 is a simple example because the story about Tuk is relatively short and not complicated. Furthermore, we have included only causal connections between sentences in the text and not other potential connections. This simple network, however, allows us to illustrate aspects of adult readers' comprehension.

Previous research suggests that networks such as depicted in Figure 2.1

capture an adult's comprehension of stories (e.g., Goldman & Varnhagen, 1986; O'Brien & Myers, 1987; Trabasso & van den Broek, 1985). Adult readers are more likely to remember events with many causal connections than events with few connections. For example, readers are more likely to remember that Tuk wanted to become a brave hunter (sentence 3, a statement with five connections) or that Tuk wanted to prove how brave he could be (sentence 10, a statement with six connections) than that Tuk helped ready the dogsled (sentence 14, a statement with two connections). Likewise, readers tend to rank the events with many connections as more important than events with fewer connections. Furthermore, readers more often include highly connected events in summaries of the text than events with few connections (van den Broek, 1988). Finally, when readers are asked questions about why an event happened, they respond with answers that are based on the causal connections in the text (Trabasso, van den Broek, & Liu, 1988). For example, when asked why Tuk was too young to go on a hunting trip (sentence 9), readers likely answer with the connected statement that it is because hunting is dangerous (sentence 8).

For adults, the process of making connections often is automatic, but for many young children it is effortful (as it is for adults when the materials are challenging). The ability to make connections in young children develops gradually over time (e.g., Bourg, Bauer, & van den Broek, 1997; Goldman & Varnhagen, 1986). Previous research has revealed developmental trends with respect to three aspects of comprehension: (a) general sensitivity to the causal structure of the narrative; (b) a focus on internal events, such as protagonists' goals in causal structures, as opposed to a focus on external events, such as actions; and (c) the inclusion of between-episode connections in the mental representation of the text as opposed to only within-episode connections (for a review, see van den Broek, 1997).

CHAPTER THREE
METHODOLOGY

3.1 Introduction:

This chapter discusses the population of the study, the sample used in this study, the methodology, the instrumentation, the reliability and validity of the study and the techniques used for data collection and analysis.

The method adopted in this research is descriptive analytical approach. Data has been collected by using two tools: a diagnostic test for (30) EFL Sudanese university students and a questionnaire for (30) EFL Sudanese university teachers, all the data has been then analyzed through SPSS (Statistical Package for Social Sciences).

Part one:

3.1.1 Population of the Study

To achieve the intended goals, the study adopted two tools; namely a diagnostic test and a questionnaire. The population of the study are those of Ibn Khaldoon (a privately run College) second year students of the English Department to whom the test is administered and expert EFL Sudanese university teachers who participated in the questionnaire.

3.1.2 Sample of the Study:

The researcher conducts the test at Ibn Khaldoon College, English Department. The sample of the study was taken from first year students, second semester. They are a heterogeneous group of students majoring in different disciplines such as nursing, medicine, management and dentistry. They are of the same level of English abilities and are approximately the same age, (30) students participated voluntarily; the

test took place during their second semester of the (2019) university academic year.

The sample of the questionnaire is (30) expert EFL university teachers who have more than seven years in teaching English at Sudanese universities , the sample was taken to detect some of the causes and to suggest some solutions to the reading comprehension difficulties that face the subjects of the study.

3.2 Part two:

3.2.1 Methodology:

The purpose of this research is to investigate reading comprehension difficulties that face EFL Sudanese university students. To achieve this goal and in an attempt to answer the research questions, data has been collected through using two tools, a diagnostic test for (30) students who have participated voluntarily and have been selected randomly from second year students at Ibn Khaldoon College and a questionnaire for (30) expert English reading comprehension teachers at Sudanese Universities. The data collected has been analyzed statistically by SPSS

3.2.2Instrumentation:

The instruments used in this study are a diagnostic test and a questionnaire. They are described in details below:

3.2.2.1 The Diagnostic Test:

The first instrument which is employed in this study is a diagnostic reading test, the main purpose of this test is to investigate the difficulties the may encounter EFL Sudanese university students in reading comprehension in both formal and informal settings.

The test consists of two sections: short reading passage of one paragraph and a text of more than two or three paragraphs. One text is heavily worded in informal English to check the students' ability to cope with such texts. Informal test is the kind of English used by native speakers in different social context such as streets, restaurants…etc, whereas the main aim of the formal was to check the understanding of formal English used in academic setting such as lectures and texts.

The questions of the test were mainly designed to test reading comprehension, in the first section of the test the students read to a dialogue and they were given five multiple choice questions and in the second section the students read to a part of a text of three paragraphs and were asked to answer six multiple choice questions and six sentence construction questions.

3.2.2.2 The Validity of the test:

Validity refers to the extent to which a test or a set of tests measure what they are supposed to measure. It also refers to the extent to which the results of the procedure serve the uses for which they were intended.

The test has been adopted from the British Council website (https: learnenglish.britishcouncil.org), it is provided by model answers, the test is mainly designed for reading comprehension testing purpose. (Appendix1).

The researcher consulted five expert reading comprehension teachers who have long experience in teaching reading; three university teachers and two instructors who teach IELTS in British Council and they agreed about the validity of the test.

3.2.2.3 The Reliability of the test:

Reliability is defined as the extent to which a test produces consistent

results when administered under similar conditions.

The reliability coefficient was calculated for the measurement, which was used in the test using Alpha - Cronbach coefficient Equation as the following:

$$\text{Validity} = \sqrt{\text{Reliability}}$$

For calculating the validity and the reliability of the test from the above equation, the researcher distributed the test to the respondents to calculate the reliability coefficient using the Alpha-Cronbach coefficient the results have been showed in the following table:

	Reliability	***Validity***	***N***
ALPH – CRONBACH	0.86	0.91	30

From the above table it is clear that the validity of the test is very high (0.91) which indicates that if we repeat the test we are sure with 93% that it is going to give us the same results.

3.2.3 The Questionnaire:

The researcher designed the questionnaire in (Appendix 2) for expert teachers at Sudanese universities to collect information about their views regarding causes and solutions of reading comprehension problems.

The questionnaire consists of two parts, part one consists of fifteen statements, it is mainly designed to investigate the causes of the difficulties that face EFL learners in reading comprehension from the teachers' point of view.

Part two consists of ten statements with the aim to elicit some solutions to listening comprehension problems that face EFL Sudanese university students.

The questionnaire was designed by the researcher based on her observation of the reading comprehension problems that face the subjects of the study and according to the review of literature which was included in the second chapter of the study.

3.2.3.1 The Validity of the Questionnaire:

The researcher consulted expert reading teachers in the field of language teaching and have background in doing research in English language teaching to examine the content , the structure , the logical flow of the statements and the length and the order of the questionnaire , they accepted the items of the questionnaire in general but suggested some modifications , they suggested that the researcher should limit the number of the statements to 25 in order to achieve accurate results , the researcher then made some modifications according to their comments.

3.2.3.2 The Reliability of the Questionnaire:

3.2.2.3.1 Statistical Reliability

Reliability refers to the reliability of any test, to obtaining the same results if the same measurement is used more than one time under the same conditions. Reliability also means when a certain test was applied on a number of individuals and the marks of every one were counted; then the same test applied another time on the same group and the same marks were obtained; then we can describe this test as reliable. In addition, reliability is defined as the degree of the accuracy of the data. That the test measures. Here are some of the most used methods for calculating the reliability:

- Alpha-Cronbach coefficient.

On the other hand, validity also is a measure used to identify the validity degree among the respondents according to their answers on certain

criterion. The validity is counted by a number of methods, among them is the validity using the square root of the (reliability coefficient). The value of the reliability and the validity lies in the range between (0-1). The validity of the questionnaire is that the tool should measure the exact aim, which it has been designed for.

In this study the validity of the questionnaire is calculated by using the following equation:

$$\text{Validity} = \sqrt{\text{Reliability}}$$

For calculating the validity and the reliability of the questionnaire from the above equation, the researcher distributed the questionnaires to respondents to calculate the reliability coefficient using the Alpha-Cronbach coefficient; the results have been showed in the following table :

Reliability Statistics

Cronbach's Alpha	No of Items
٨٠	25

3.2.4 Techniques of Data Collection and Analysis:

As has been mentioned, the data of the study was collected by using a diagnostic test and a questionnaire. The test was conducted on 10th August.2018, the researcher has administered the test to (30) Ibn Khaldoon first year students, the test took place during their second semester in the English Department, the researcher gave them oral instructions by herself then she distributed the test, the students read long and short paragraphs were given sometimes to answer the questions and to check their work.

The test consists of two sections, the students first read to short texts and then answered five multiple answer questions, they were given a minute

to read the questions before they read, then the researcher gave them more time after the first reading to check their work before they moved into the second section.

In the second section , the students reading to a part of a lecture about a lecturer describing some things relating to an essay that he has asked his students to write and they were given six multiple choice questions and six matching of sentence construction question, then the researcher gave the students five minutes at the end of the test to check their work , then the researcher collected the test papers , the whole process took twenty five minutes to complete .The data obtained from the test was marked by the researcher then it was analyzed by SPSS (Statistical Package of Social Sciences).

The second tool that has been used to collect data is a structured questionnaire which the researcher administered on 15.2.2019 to (30) expert EFL Sudanese university teachers, some of them were colleagues of the researcher who works as a part-time lecturer at Ibn Khaldoon College, it took about a week to get all the copies of the questionnaire answered, then the data collected by the questionnaire was analyzed statistically by using SPSS.

Part three:

3.3.1 The Statistical Method:

The SPSS (Statistical Package for Social Sciences) was used to statistically process the data. The method used in the analysis of the data is the frequencies and percentages of the respondents answers , in addition to the arithmetic mean and standard deviation of the weight of the respondents answers , Chi-square was used to test the hypotheses of the study.

Chapter Summary:

Chapter three cleared how the researcher collected data about reading comprehension difficulties among EFL Sudanese University students, the population, the sample, instrumentation, validity and reliability of the study and the techniques used for data collection and analysis were explained in this chapter.

CHAPTER FOUR

ANALYSIS, RESULTS AND DISCUSION

4.0 Introduction

This chapter presents the analysis, evaluation, and interpretation of the data collected through the diagnostic test and the questionnaire. The first part of this chapter is devoted to the diagnostic test while the second part to the questionnaire. The statistical part of the analysis is done by (SPSS) program where frequencies and percentages are presented.

Part one:

4.1 The Test Responses and Analysis:

The test consists of two parts, part one contains five questions while part two consist of twelve questions to test reading comprehension. The responses to the listening diagnostic test of the 30 students were tabulated and computed. The following is an analytical interpretation and discussion of the findings regarding different points related to the objectives and hypotheses of the study. Each statement in the test is analyzed statistically and discussed. The following table will support the discussion.

4.1.1 Hypotheses One

1. The depth of vocabulary knowledge correlates with good reading comprehension.

Reading the short passages

Read the following text and choose the best answer:

Table (4.1) shows the frequency and percentage distribution of the answers according to section (1)

Variety	Frequency	Percentage
Pass	6	17%
Failure	24	83%
Total	30	100

The above table and figure illustrate the percentage and frequency of the answers of the study sample that concern with the question (2) and shows that most of the sample answers were failure which are represented by the percentage (77%).

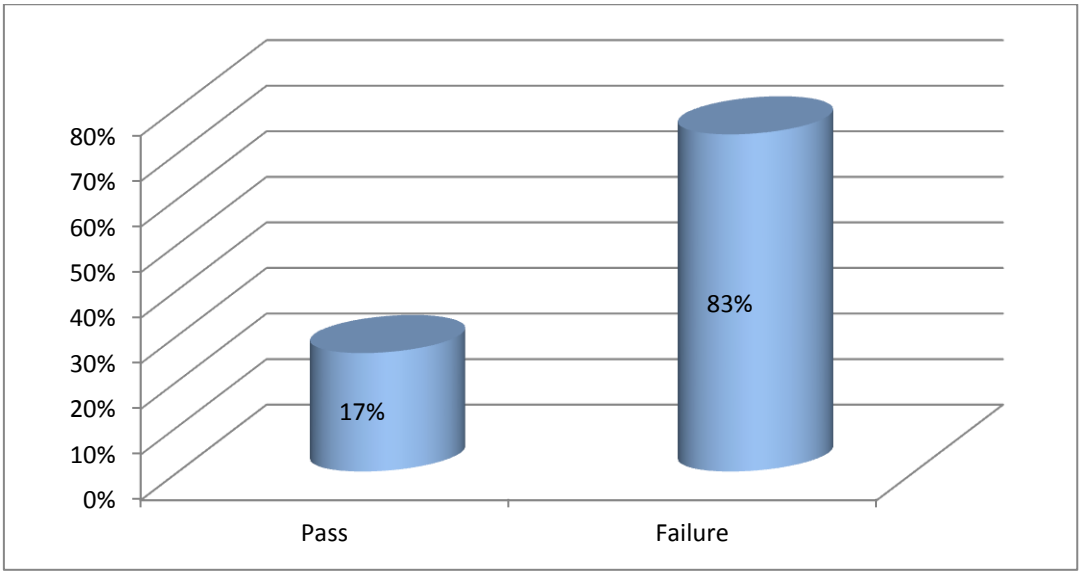

Figure (4.1)

Q2: Table No (4.3) The Frequency Distribution for the Respondent's Answers of overall reading test:

Section Two:

Read the following text and answer the following questions:

Table (4.2) shows the frequency and percentage distribution of the answers according to part (2)

Variables	Frequency	Percentage
Pass	7	23%
Failure	23	77%
Total	50	100

The above table and figure illustrate the percentage and frequency of the answers of the study sample that concern with the question (2) and shows that most of the sample answers were failure which are represented by the percentage (77%).

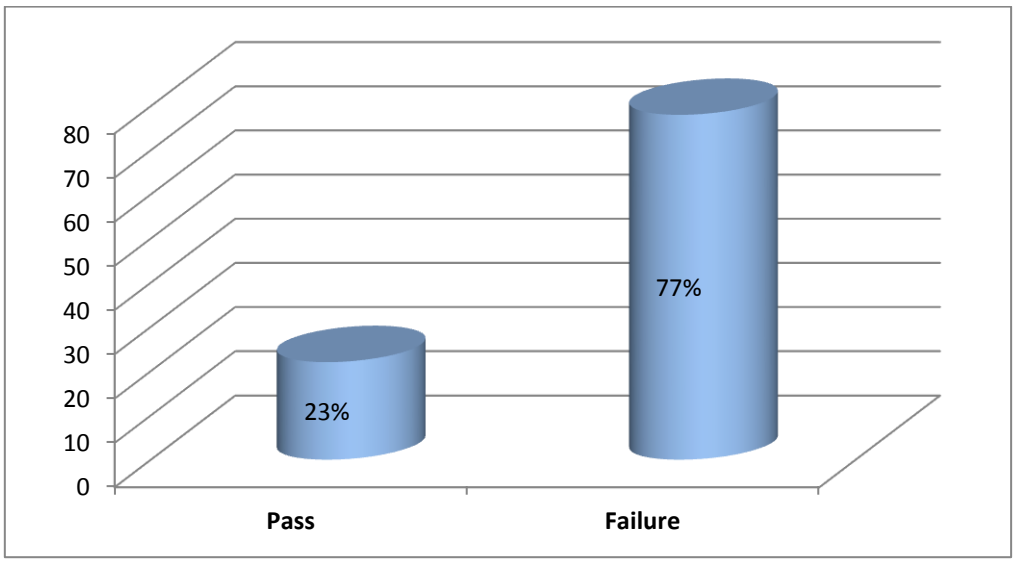

Figure (4.2)

Table No (4.3) The Frequency Distribution for the Respondent's Answers of overall reading test

Answers	Frequencies	Percentage
Pass	9	30
Failure	21	70
Total	30	100

from the above table No. (4.3) and figure No (4.3) its shown that there are (9) students in the study's sample with percentage (30%) have passed the question, while There are (21) students with percentage (70 %) was failed to pass the overall reading test.

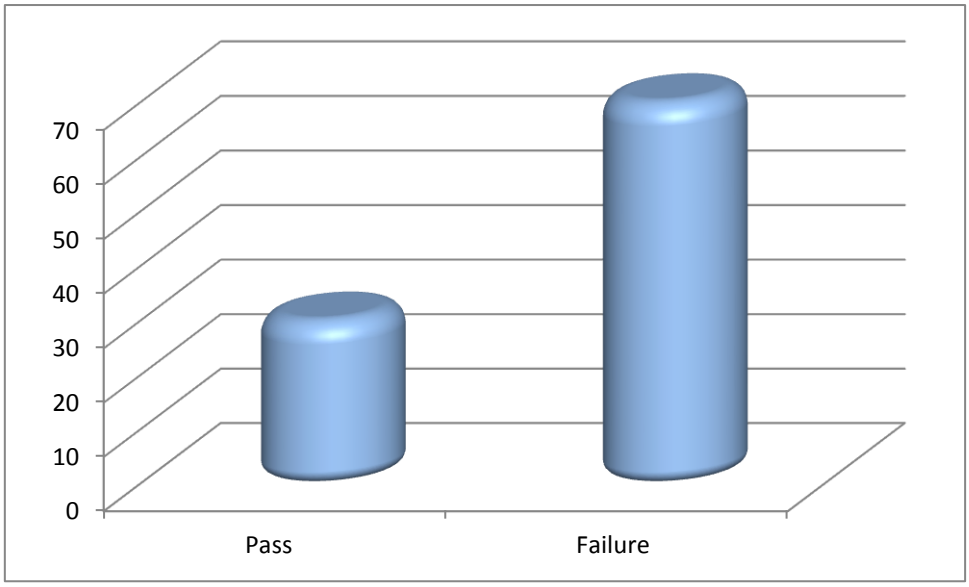

Figure (4.3)

Table No (4.4) The Frequency Distribution and decisions for the Respondent's Answers of all questions

Questions	**Pass**		**Failure**		**Decision**
	frequency	***Percentage***	***frequency***	***Percentage***	
Section 1	6	17	25	83	**Accept**
Section 2	7	23	23	77	**Accept**
overall	9	30	21	70	**Accept**

The above table shows the summary of the results. For the **section one,** it's clear that the number of students who failed question one is greater than the number of students who gave correct answers (83%) so the first hypothesis of this study is accepted.

Judging by the table above it is clear that the number of students who failed to get correct answers is far greater than the number of students who answered correctly (77%).

Table (4.5) one sample T-TEST for the questions of the study

Question s	N	SD	t-value	DF	p-value
1	30	7.2	11	29	0.00
2	30	9.81	17	29	0.00
For all	30	8.03	15	29	0.00

The calculated value of T – TEST for the significance of the differences for the respondent's answers in the question No (1) was (11) which is greater than the tabulated value of T – TEST at the degree of freedom (49) and the significant value level (0.05%) which was (6.54). This indicates that, there are no statistically significant differences at the level (0.05 %) among the answers of the respondents.

The calculated value of T – TEST for the significance of the differences for the respondent's answers in the question No (2) was (17) which is greater than the tabulated value of T – TEST at the degree of freedom (49) and the significant value level (0.05%) which was (6.54). This indicates that, there are statistically significant differences at the level (0.05 %) among the answers of the respondents.

The calculated value of T – TEST for the significance of the differences for the respondent's answers in overall test was (13) which is greater than the tabulated value of T – TEST at the degree of freedom (29) and the significant value level (0.05%) which was (6.54). This indicates that, there are statistically significant differences at the level (0.05 %) among the answers of the respondents. This means that our hypothesis is accepted.

Part Two:

4.2 Questionnaire

The responses to the questionnaire of the 30 teachers were tabulated and computed. The following is an analytical interpretation and discussion of the findings regarding different points related to the objectives and hypotheses of the study.

Each item in the questionnaire is analyzed statistically and discussed. The following tables will support the discussion.

4.2.1 Analysis of the Questionnaire:

4.2.1.1 The Responses to the Questionnaire

The researcher distributed the questionnaire on the determined study sample (30), and constructed the required tables for collected data. This step consists transformation of the qualitative (nominal) variables (strongly disagree, disagree, Undetermined, agree, and strongly agree) to quantitative variables (1, 2, 3, 4, 5) respectively, also the graphical representations were used for this purpose.

4.2.1.2 Statistical Reliability

Reliability refers to the reliability of any test, to obtaining the same results if the same measurement is used more than one time under the same conditions. Reliability also means when a certain test was applied on a number of individuals and the marks of every one were counted; then the same test applied another time on the same group and the same marks were obtained; then we can describe this test as reliable. In addition, reliability is defined as the degree of the accuracy of the data that the test measures. Here are some of the most used methods for calculating the reliability:

. Alpha-Cronbach coefficient.

On the other hand, validity also is a measure used to identify the validity degree among the respondents according to their answers on certain criterion. The validity is counted by a number of methods, among them is the validity using the square root of the (reliability coefficient). The value of the reliability and the validity lies in the range between (0-1). The validity of the questionnaire is that the tool should measure the exact aim, which it has been designed for. In this study the validity calculated by using the following equation:

$$\text{Validity} = \sqrt{\text{Reliability}}$$

The reliability coefficient was calculated for the measurement, which was used in the questionnaire using Alpha-Cronbach coefficient Equation as the following:

For calculating the validity and the reliability of the questionnaire from the above equation, the researcher distributed the questionnaires to respondents to calculate the reliability coefficient using the Alpha-Cronbach coefficient; the results have been showed in the following table.

Reliability Statistics

Cronbach's Alpha	**N of Items**
.80	25

Statement No. (1): *Good readers are distinguished from bad readers through the automaticity of word recognition process*

Table No (4.6)

Valid	Frequency	Percent%
strongly agree	3	13.3
Agree	14	46.7
Neutral	3	10
Disagree	7	20
strongly disagree	3	10
Total	30	100.0

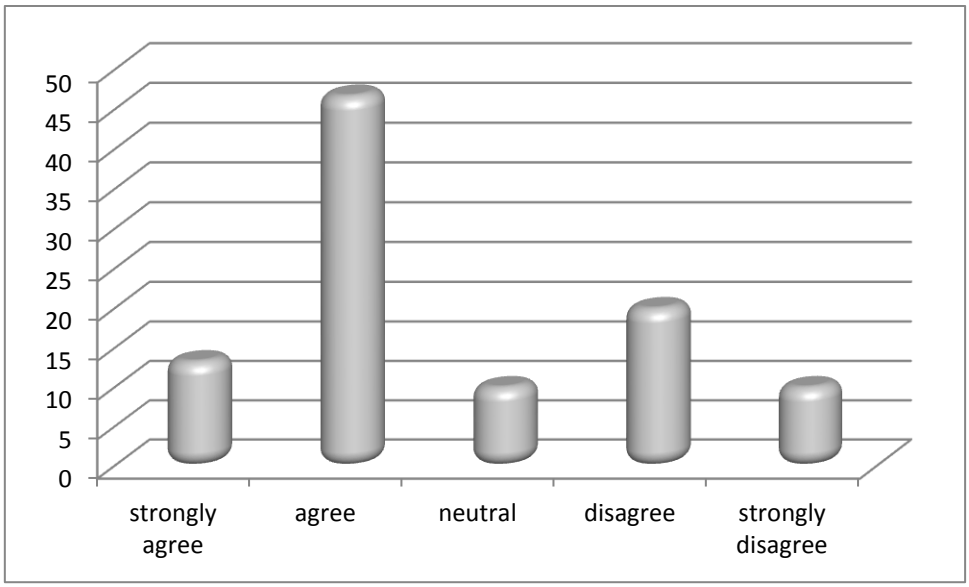

Figure (4.4)

It is clear from the above table No.(4.6) and figure No (4.4) that there are (3) persons in the study's sample with percentage (13.3%) strongly agreed with that " ***Good readers are distinguished from bad readers through the automaticity of word recognition process"*** There are (7) persons with percentage (20.0%) agreed with that, and (3) persons with percentage (10.0%) were not sure that, and (14) persons with percentage (46.7%) disagreed and (3) persons with 10% are strongly disagreed.

This result shows that not only are good readers rapid in their word recognition, they are precise as well. Readers take in letter features of short words simulta- neously and appear to recognise all the letters in a word. The ability to recognise words rapidly and accurately is an important predictor of reading ability, especially with younger first-language readers, and even for college-level students.

Poor readers are also distinguished from good ones by: poor phonetic decoding; insensitivity to word structures; and poor encoding of syn- tactic properties (Vellutino and Scanlon, 1987). They see reading diffi- culties as a linguistic problem, involving a failure to recognise how particular structures encode information, and not as a problem of insufficient background knowledge or insufficient top-down strategies. Thus, the pendulum swings.

Statement (2) ***Cognitive strategies are so powerfully linked with mnemonics.***

Table No (4.7) The Frequency Distribution for the Respondents' Answers of Statement No.(2)

Variables	Frequency	Percent%
strongly agree	13	34.4
agree	10	33.3
neutral	3	10
disagree	3	10
strongly disagree	1	3.3
Total	30	100.0

It is clear from the above table No.(4.7) and figure No (4.5) that there are (13) persons in the study's sample with percentage (34.4%) strongly agreed with that " ***Cognitive strategies are so powerfully linked with mnemonics. .”*** There are (10) persons with percentage (33.3%) agreed with that, and (3) persons with percentage (10.0%) were not sure that, and (3) persons with percentage (10.0%) disagreed. and (1) persons with 3.3% are strongly disagreed.

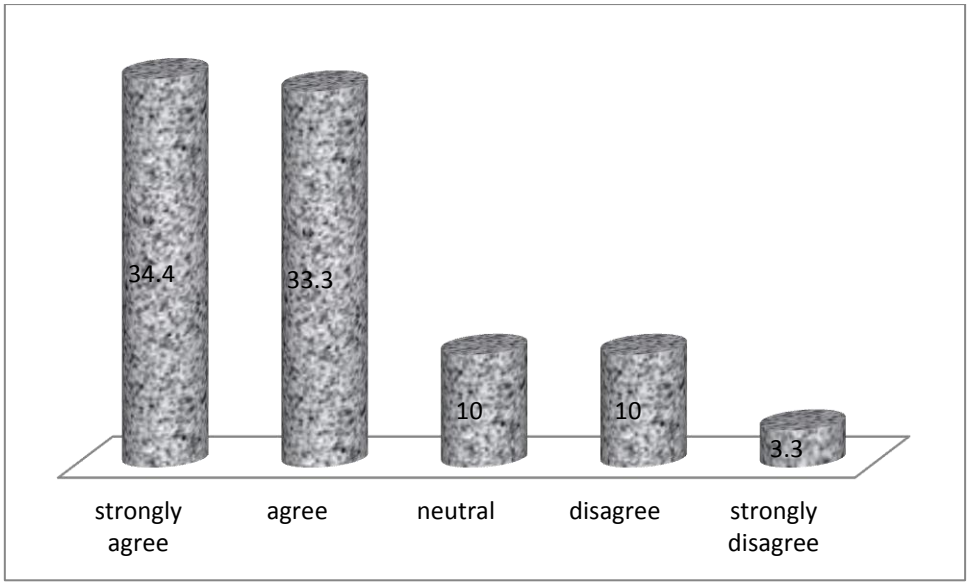

Figure (4.5)

Mnemonics are simply reminders that help people remember things such as list of things a line of poetry or prose. One example of a mnemonic to aid memory of a list of items is to imagine a well-known spatial route and visually place each item in a particular location along the route. Then, to recall the items, the person imagines traveling the route and *picking up* each item along the way. Another mnemonic, called *chaining,* is to create sentences out of the words in the lists. For example, with the words, *table, helicopter*, *saxophone*, and *leg* a sentence such as *'the table inside the helicopter had a saxophone for a leg"*

Statement (3) ***The most effective theories of reading is SQ3R which is named for its five steps***

Table No (4.8) The Frequency Distribution for the Respondents' Answers of Statement No.(3)

Valid	Frequency	Percent%
strongly agree	18	60
Agree	10	33.4
Neutral	1	3.3
Disagree	1	3.3
strongly disagree	0	0
Total	30	100.0

It is clear from the above table No. (4.8) and figure No (4.6) that there are (18) persons in the study's sample with percentage (60.0%) strongly agreed with that***. The most effective theories of reading is SQ3R which is named for its five steps***. There are (10) persons with percentage (33.3%) agreed with that, and (1) persons with percentage (3.3%) were not sure that, and (1) persons with percentage (3.3%) disagreed, and (0) persons with 0% are strongly disagreed.

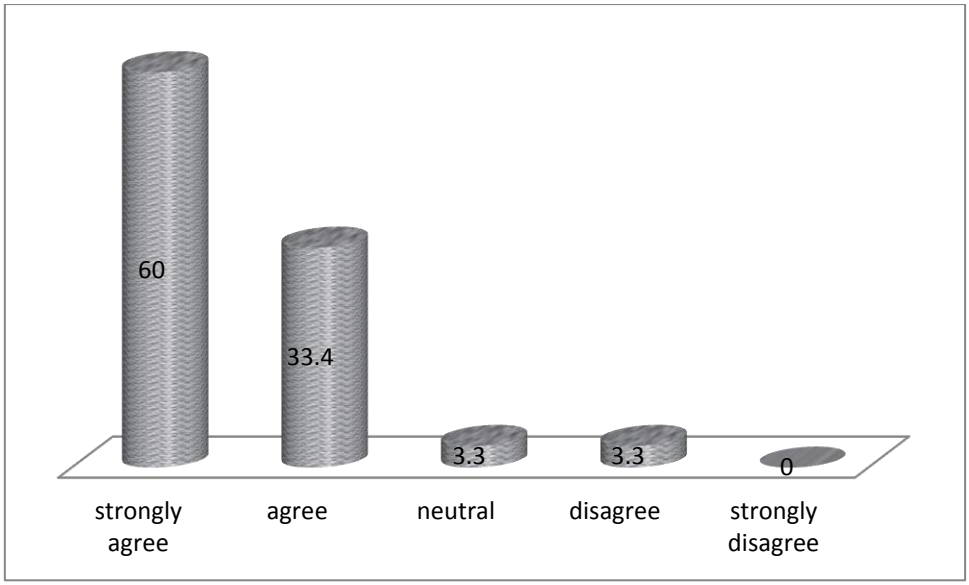

Figure (4.6)

According to Wikipedia**, SQRRR** or **SQ3R** is a reading comprehension method named for its five steps: **survey, question, read, retrieve, and review**. The method was introduced by Francis P. Robinson, an American education philosopher in his 1946 book *Effective Study*. The method offers a more efficient and active approach to reading textbook material. It was created for college students, but is extremely useful for young students as well. Classrooms all over the world have begun using this method to better understand what they are reading.

Statement (4): ***The question of reading comprehension can be a very challenging issue.***

Table No. (4.9) The Frequency Distribution for the Respondents' Answers of Statement No. (4)

Valid	Frequency	Percent%
strongly agree	17	53.3
agree	11	36.7
neutral	2	6.7
disagree	1	3.3
strongly disagree	0	0
Total	30	100.0

It is clear from the above table No.(4.9) and figure No (4.7) that there are (17) persons in the study's sample with percentage (53.3%) strongly agreed with that " ***The question of reading comprehension can be a very challenging issue ”*** .There are (11) persons with percentage (36.7%) agreed with that, and (2) persons with percentage (6.7%) were not sure that, and (1) persons with percentage (3.3%) disagreed. and (0) persons with 0% are strongly disagreed.

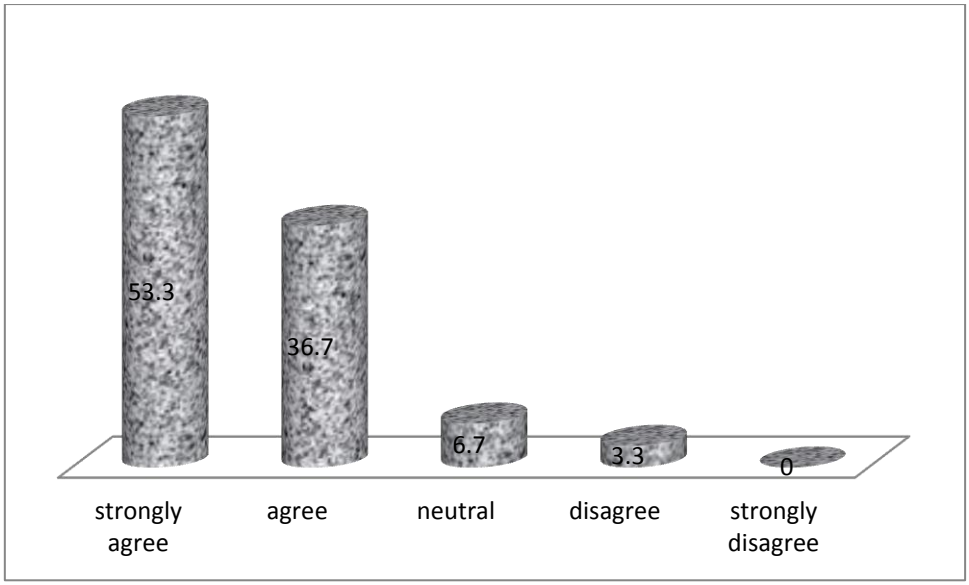

Figure (4.7)

It is enormously true that the question of reading comprehension can be a very challenging issue especially if the language is mostly unfamiliar technical or complex. Some readers can work out the meaning of individual word but linking them together for full meaning often does not happen as it ought to be. These readers have the ability to decode single or individual words however they have not developed sufficient skills to work to grasp the underlying deeper meaning of stretches of words or sentences or full paragraphs. Comprehension refers to the ability to go beyond the words, to understand the ideas and the relationships between ideas conveyed in a text.

This part of the chapter shall give attention to the cognitive processes involved in comprehension as well as the types of techniques to be employed to enhance readers' abilities to comprehend the text. Students' cultural background should not be neglected and has to be pinpointed as an important tool that helps maximize the process of comprehension. So the focus is on reading comprehension strategies. No doubt that using appropriate techniques or reading comprehension strategies shall have the effect of improving learners' understanding of the texts to be approached.

Statement (5): ***KWL chart, is a graphical organizer designed to help in learning in general but can be used in reading particularly. .***

Table No (4.10) The Frequency Distribution for the Respondents' Answers of Statement No. (5)

Variables	Frequency	Percent%
strongly agree	15	50
agree	13	43.4
neutral	1	3.3
disagree	1	3.3
strongly disagree	0	0
Total	30	100.0

It is clear from the above table No.(4.10) and figure No (4.8) that there are (15) persons in the study's sample with percentage (50.0%) strongly agreed with that " ***KWL chart, is a graphical organizer designed to help in learning in general but can be used in reading particularly .*** ". There are (13) persons with percentage (43.4%) agreed with that, and (1) persons with percentage (3.3%) were not sure that, and (1) persons with percentage (3.3%) disagreed, and (0) persons with 0% are strongly disagreed.

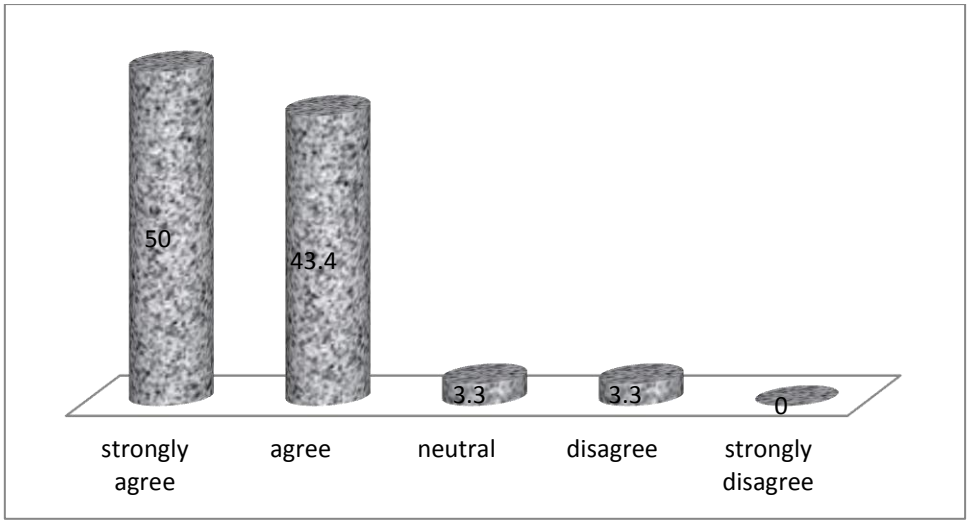

Figure (4.8)

According to Wikipedia A **KWL table**, or **KWL chart**, is a graphical organizer designed to help in learning. The letters KWL are an acronym, for what students, in the course of a lesson, already **k**now, **w**ant to know, and ultimately **l**earn. It is a part of the constructivist teaching method where students move away from what are considered traditional methods of teaching and learning. In this particular methodology the students are given the space to learn by constructing their own learning pace and their own style of understanding a given topic or idea. The KWL chart or table was developed within this methodology and is a form of instructional reading strategy that is used to guide students taking them through the idea and the text. A KWL table is typically divided into three columns titled Know, Want and Learned. The table comes in various forms as some have modified it to include or exclude information.

Statement (6) ***It is ordinary to make a distinction between the process of reading and the outcome of that process, the product***

Table No (4.11) The Frequency Distribution for the Respondents' Answers of statement No. (6)

Variables	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	10	33.3	33.3	33.3
agree	12	40.0	40.0	73.3
neutral	4	13.3	10.0	83.3
disagree	3	10.0	13.3	96.7
strongly disagree	1	3.3	3.3	100.0
Total	30	100.0	100.0	

From the above table No. (4.11) and figure No (4.9) we can see that there are (10) persons in the study's sample with percentage (33.3%) strongly agreed with " ***It is ordinary to make a distinction between the process of reading and the outcome of that process, the product".*** .There are (12) persons with percentage (40.0%) agreed with that, and (4) persons with percentage (10.0%) were not sure that, and (3) persons with percentage (13.3%) disagreed. and (1) persons with 3.3% are strongly disagreed.

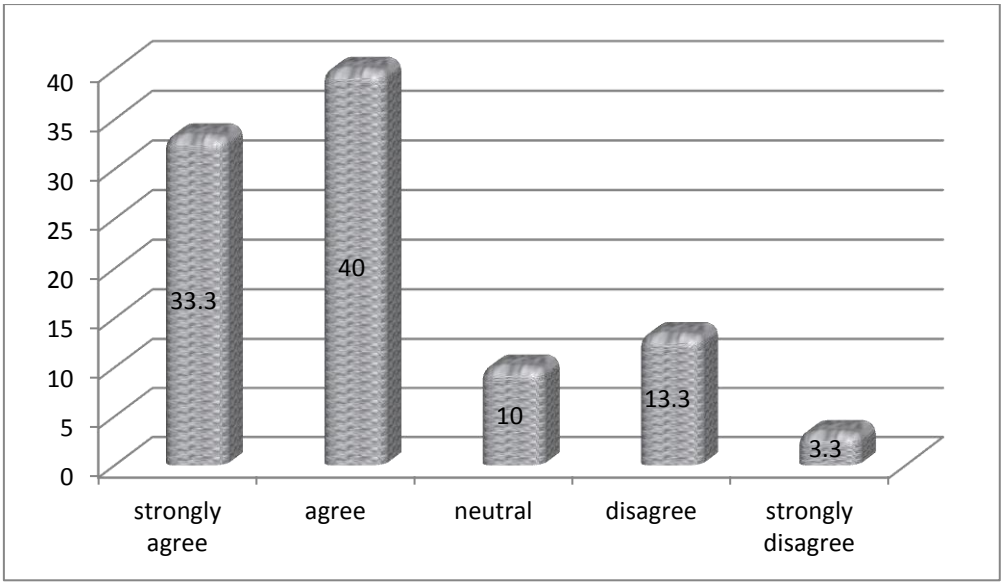

Figure (4.9)

It is ordinary to make a distinction between the *process* of reading and the outcome of that process, the *product*. The process is what we mean by reading proper: the interaction between a reader and the text. During that process, presumably, many things are happening. Not only is the reader looking at the text, deciphering in some sense the marks on the page deciding what they mean and how they relate to each other. The reader is presumably also 'thinking' about what he is reading: what it means to him, how it relates to other things he has read, to things he knows, to what he expects to come next in texts like this. He is presumably thinking about how useful, entertaining, boring, crazy, the text is. He may be consciously reflecting on the difficulties or ease he is experiencing when reading, and on ways of overcoming the difficulties or of continuing the plea- sure. He may be completely unconscious of how he is reading, and of what is happening around him: he may be fully absorbed in 'reading'.

Statement (7) ***Insights that enriched the field of reading have been gained from eye movement photography.***

Table No (4.12) The Frequency Distribution for the Respondents' Answers of statement No. (7)

Variables	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	10	33.3	33.3	33.3
agree	12	40.0	40.0	73.3
neutral	3	10.0	10.0	83.3
disagree	4	13.3	13.3	96.7
strongly disagree	1	3.3	3.3	100.0

Judging by the above table No. (4.12) and figure No (4.10) we can see that there are (10) persons in the study's sample with percentage (33.3%) strongly agreed with " ***Insights that enriched the field of reading have been gained from eye movement photography***.". There are (12) persons with percentage (40.0%) agreed with that, and persons with percentage (10.0%) were not sure that, and (4) persons with percentage (13.3%) disagreed. and (1) persons with 3.3% are strongly disagreed.

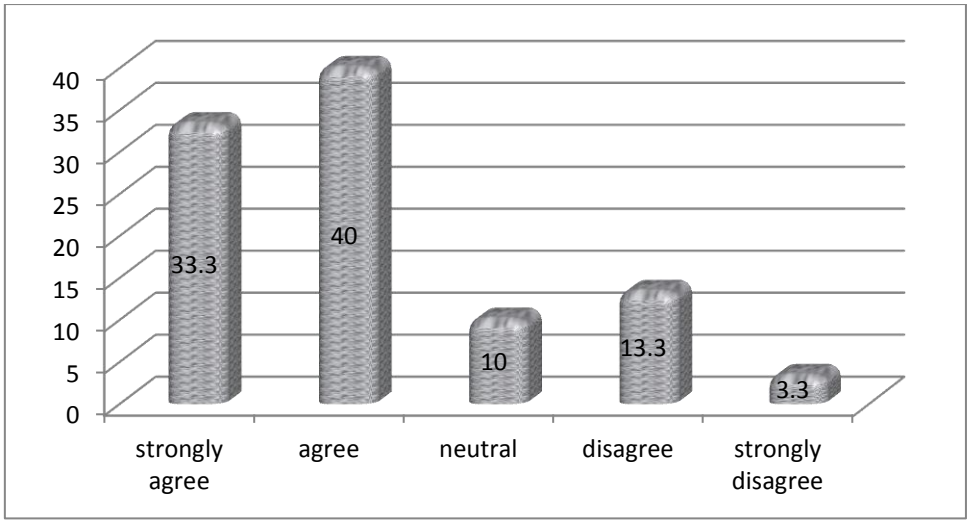

Figure (4.10)

Research has focused on examining the eye movements of readers, and interesting insights have been gained from eye movement photography. Watching what the eyes are doing, however, may not tell us what the brain is doing if, in Smith's (1971) terms, 'What the Brain Tells the Eye is More Important than What the Eye Tells the Brain. Asking the reader to read aloud is an alternative to eye movement photography as a means of externalizing the reading process, and **miscue analysis** (which analyses the mistakes readers make when reading aloud for details see Goodman, 1969) is one method of investigating the reading-aloud process. Yet reading aloud is not the 'normal' way in which people read, and the process of reading aloud may be very different from reading silently. Externalizing the private process of reading may be the only way to inspect it, yet such externalizing risks distorting and changing the nature of the process.

Introspection, through think-aloud protocols or verbal retrospection in interviews, is an increasingly frequently used method of investigating the reading process, and researchers have identified different strategies that good and poor readers appear

to use when reading; they have investigated the parts of text that cause problems when reading; and they have also looked at the affective issues that arise when readers are processing particular texts. Introspective methodologies have their critics and are obviously limited in how much light they can throw on the process, but, equally obviously, such methodologies have their uses.

Statement No. (8). ***It is commonplace in theories of reading as well as in everyday talk about reading to distinguish different levels of understanding of a text.***

Table No (4.13) The Frequency Distribution for the Respondents' Answers of statement No. (8)

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	6	20.0	20.0	20.0
agree	12	40.0	40.0	60.0
neutral	3	10.0	10.0	70.0
disagree	8	26.7	26.7	96.7
strongly disagree	1	3.3	3.3	100.0
Total	30	100.0	100.0	

Judging by the above table No.(4.13) and figure No (4.11) we can see that there are (6) persons in the study's sample with percentage (20.0%) strongly agreed with " ***It is commonplace in theories of reading as well as in everyday talk about reading to distinguish different***

levels of understanding of a text . (**.**). There are (12) persons with percentage (40.0%) agreed with that, and (3) persons with percentage (10.0%) were not sure that, and (8) persons with percentage (26.7%) disagreed. and (1) persons with 3.3% are strongly disagreed.

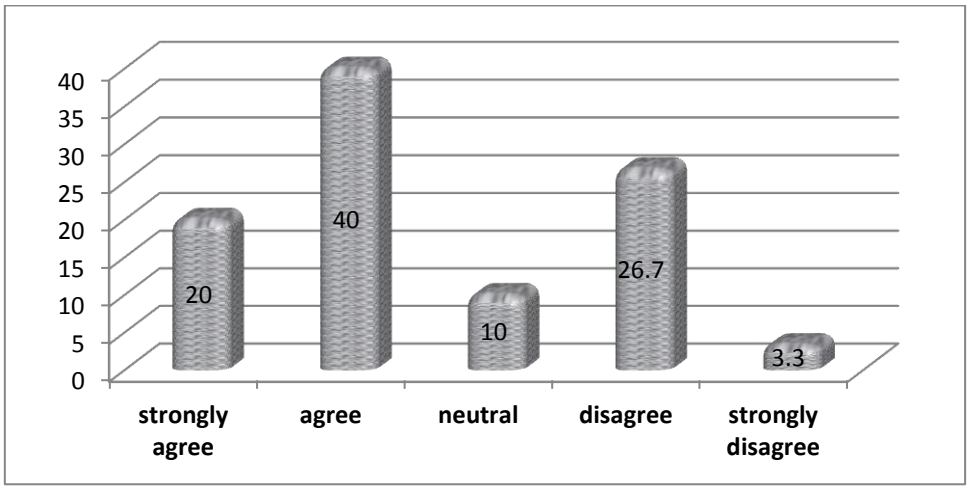

Figure (4.11)

As far as level of understanding are concerned, it is common to observe that some may distinguish between a literal understanding of text, an understanding of meanings that are not directly stated in text, or an understanding of the main implications of text. Similarly the distinction between understanding details and understanding the main idea of a text is familiar enough to teachers of reading, as is Gray's (1960) distinction between reading 'the lines', reading 'between the lines', and reading 'beyond the lines'. The first refers to the literal meaning of text, the second to inferred meanings, and the third to readers' critical evaluations of text.

Such distinctions clearly relate to the product of reading, and enable us to describe some of the observed differences in understanding among readers. They also enable the evaluation of such differences, since it is believed that inferred meanings are somehow 'deeper' than literal meanings, and that a critical

understanding of a text is more highly valued by society than a 'mere' literal under- standing. Such value judgments lead to an implicit (at times explicit) hierarchy of levels of understanding: the literal level being considered somehow 'lower' than critical understanding. This in turn leads to an assumption that it is more 'difficult' to reach a critical understanding of text than it is to infer meanings, and that both of these are more difficult than 'merely' understanding the literal meaning. Thus the notion of levels of understanding becomes over-laden with an ordered hierarchy of increasingly valued and increasingly difficult 'meanings'. The next logical leap is from this ordered hierarchy of difficulty and value to a hierarchy of acquisition: it is very frequently assumed that readers first learn how to understand texts literally, then to infer meanings from text, and only later do they learn how to approach text critically, to evaluate text, and so on. Thus it is often asserted that the levels are ordered: i.e. one must understand the lines in order to read between them, and one had better understand both before adventuring beyond them. In fact, the empirical justification for such assumptions is very slim indeed, but the theoretical notions are persuasive, especially to teachers of reading, and they are thus pervasive.

Statement No. (9) ***Bloom's taxonomy is useful in devising curricula, teaching materials and tests***

Table No (4.14) The Frequency Distribution for the Respondents' Answers of statement No. (9)

variables	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	10	33.3	33.3	33.3
agree	8	26.7	26.7	60.0
neutral	3	10.0	10.0	70.0
disagree	8	26.7	26.7	96.7
strongly disagree	1	3.3	3.3	100.0
Total	30	100.0	100.0	

From the above table No. (4.14) and figure No (4.12) we can see that there are (10) persons in the study's sample with percentage (33.3%) strongly agreed with " ***Bloom's taxonomy is useful in devising curricula, teaching materials and tests.***". There are (8) persons with percentage (26.7%) agreed with that, and (3) persons with percentage (10.0%) were not sure that, and (8) persons with percentage (26.7%) disagreed. and (1) persons with 3.3% are strongly disagreed.

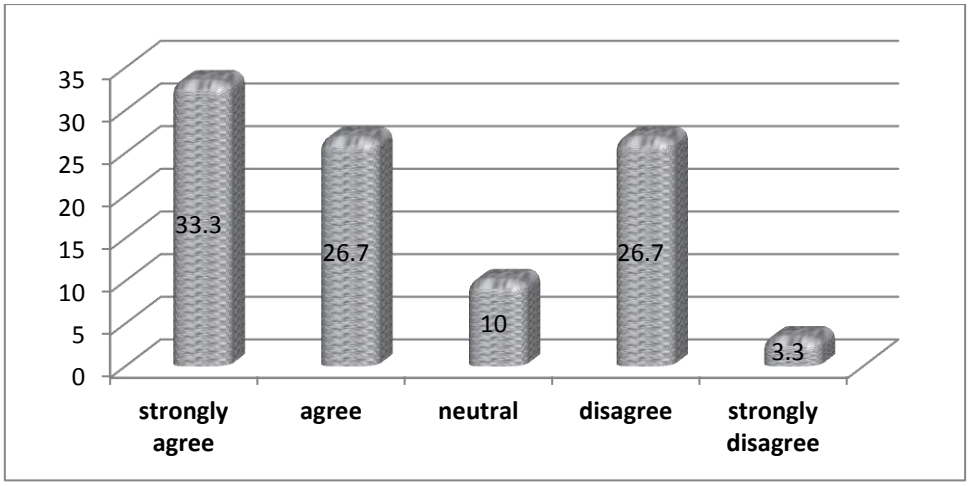

Figure (4.12)

In addition to Bloom, there man linguists and educators who have come up with insightful taxonomies in second-language education. Munby's taxonomy of micro-skills has been influential in syllabus and materials design as well as the design of language tests. Munby (1978) distinguishes the following reading 'micro-skills':

- recognizing the script of a language
- deducing the meaning and use of unfamiliar lexical items
- understanding explicitly stated information
- understanding information when not explicitly stated
- understanding conceptual meaning
- understanding the communicative value of sentences
- understanding relations within the sentence
- understanding relations between parts of text through lexical cohesion devices.

Statement No. (10) ***In the last few years the phonological awareness and decoding skills of students with reading disabilities have been identified as serious inhibitors to successful reading***

Table No (4.15) The Frequency Distribution for the Respondents' Answers of statement No. (10).

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	10	33.3	33.3	33.3
agree	16	53.3	53.3	86.7
neutral	3	10.0	10.0	96.7
strongly disagree	1	3.4	3.3	100.0
Total	30	100.0	100.0	

Considering the above table No. (4.15) and figure No (4.13) we can see that there are (10) persons in the study's sample with percentage (33.3%) strongly agreed with ***In the last few years the phonological awareness and decoding skills of students with reading disabilities have been identified as serious inhibitors to successful reading.*** There are (16) persons with percentage (5 3.3%) agreed with that, and (3) persons with percentage (10.0%) were not sure that, and (0) persons with percentage (0.0%) disagreed. and (1) persons with 3.3% are strongly disagreed.

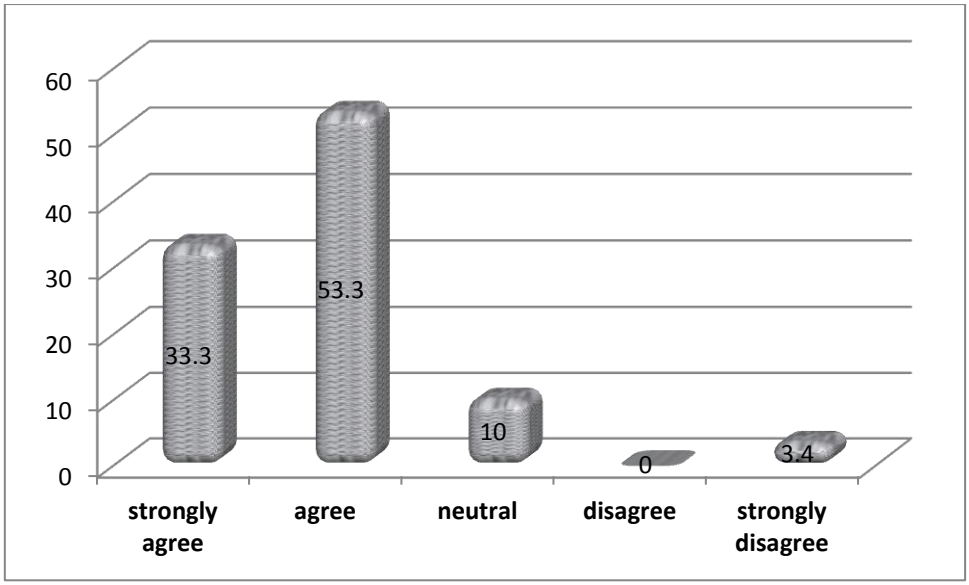

Figure (4.13)

Meaning, learning, and pleasure are the ultimate goals of learning to read. Although fundamental skills such as phonics and fluency are important building blocks of reading, reading comprehension is the "sine qua non of reading" (Beck & McKeown, 1998). Knowing how to read words has ultimately little value if the student is unable to construct meaning from text. Ultimately, reading comprehension is the process of constructing meaning by coordinating a number of complex processes that include word reading, word and world knowledge, and fluency (Anderson, Hiebert, Scott, & Wilkinson, 1985; Jenkins, Larson, & Fleischer, 1983; O'Shea, Sindelar, & O'Shea, 1987).

Statement No. (11) ***Unfamiliar words can be handled by nonstrategic mechanisms.***

Table No (4.16) The Frequency Distribution for the Respondents' Answers of statement No. (11)

Variables	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	6	20.0	20.0	20.0
agree	15	50.0	50.0	70.0
neutral	3	10.0	10.0	80.0
disagree	4	13.3	13.3	93.3
strongly disagree	2	6.7	6.7	100.0
Total	30	100.0	100.0	

As viewed from the above table No. (4.16) and figure No (4.14) we can see that there are (6) persons in the study's sample with percentage (20.0%) strongly agreed with " ***Unfamiliar words can be handled by nonstrategic mechanisms.***". There are (15) persons with percentage (50.0%) agreed with that, and (3) persons with percentage (10.0%) were not sure that, and (4) persons with percentage (13.3%) disagreed. and (2) persons with 6.7% are strongly disagreed.

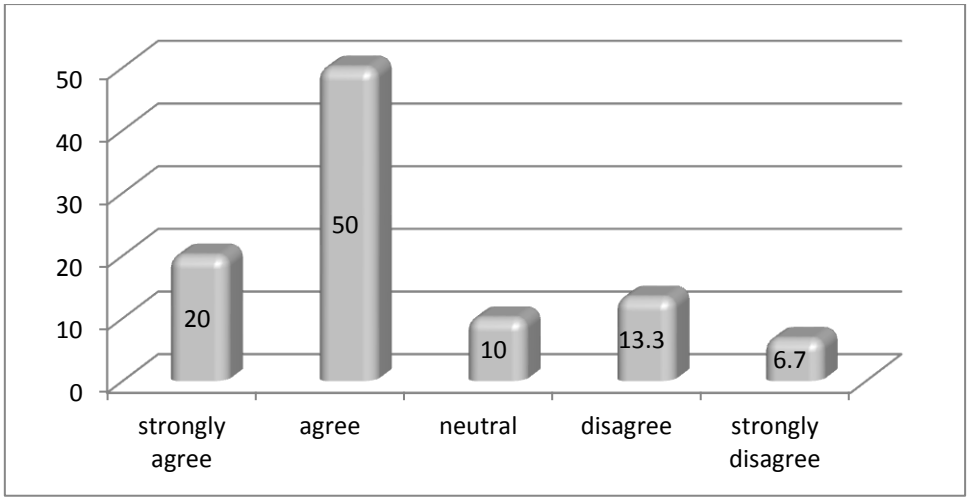

Figure (4.14)

It is true that unfamiliar words can also be handled by nonstrategic mechanisms. For example, many researchers have argued that readers infer the meaning of words from co-occurrences with other words in the large corpus of texts they experience (Anderson, 1990; Landauer & Dumais, 1997). The meanings of words do not normally come from explicit definitions or even from special purpose cognitive strategies during comprehension. Readers ascribe whatever attributes they can to unfamiliar words during reading without their receiving any special-purpose systematic treatment. Accordingly, a strategic treatment of unfamiliar words is a rare or intermittent event rather than the mainstream mechanism. At this point, the jury is still out on the extent to which the treatment of unfamiliar words is handled by strategic versus nonstrategic cognitive processes.

Statement No. (*12) The memory-based resonance model developed by Myers and O'Brien and their colleagues is one of the most important theories of reading comprehension.*

Table No. (4.17) The Frequency Distribution for the Respondents' Answers of statement No. (12)

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	8	26.7	26.7	26.7
agree	8	26.7	26.7	53.3
neutral	3	10.0	10.0	63.3
disagree	8	26.7	26.7	90.0
strongly disagree	3	10.0	10.0	100.0
Total	30	100.0	100.0	

Judging by the above table No. (4.17) and figure No (4.15) we can see that there are (8) persons in the study's sample with percentage (26.7%) strongly agreed with " ***The memory-based resonance model developed by Myers and O'Brien and their colleagues is one of the most important theories of reading comprehension***.". There are (8) persons with percentage (26.7%) agreed with that, and (3) persons with percentage (10.0%) were not sure that, and (8) persons with percentage (26.7%) disagreed. and (3) persons with 10.0% are strongly disagreed.

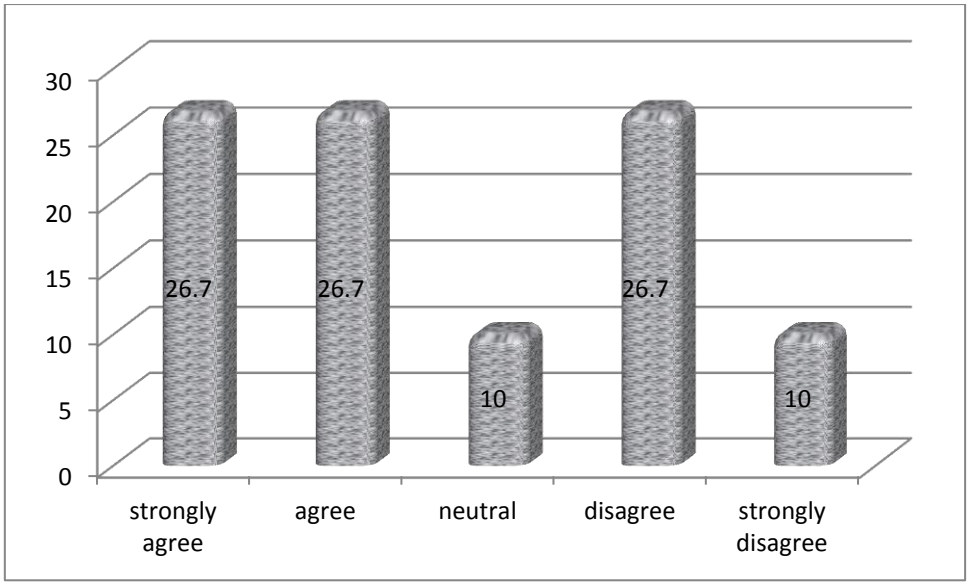

Figure (4.15)

A number of theoretical models for text comprehension have developed in the last two decades by discourse psychologists. Only three of these theories will be considered here in this chapter as governed by limitation of space the researcher will contrast three models, each of which serves as a representative of a particular class of models. A construction-integration (CI) model (Kintsch, 1998) will represent a class of bottom-up models, which would also include the *memory-based resonance model* developed by Myers and O'Brien and their colleagues (Myers, O'Brien, Albrecht, & Mason, 1994; O'Brien, Raney, Albrecht, & Rayner, 1997).

Statement No. (13) ***Lack of socio-cultural, factual and contextual knowledge of the target language can cause some difficulties in reading comprehension.***

Table No (4.18) The Frequency Distribution for the Respondents' Answers of Statement No. (13)

Variables	Frequency	Percent%
strongly agree	3	13.3
agree	14	46.7
neutral	3	10
disagree	7	20
strongly disagree	3	10
Total	30	100.0

It is clear from the above table No. (4.18) and figure No (4.16) that there are (3) persons in the study's sample with percentage (13.3%) strongly agreed with that ***Lack of socio-cultural, factual and contextual knowledge of the target language can cause some difficulties in reading comprehension***.". There are (7) persons with percentage (20.0%) agreed with that, and (3) persons with percentage (10.0%) were not sure that, and (14) persons with percentage (46.7%) disagreed. and (3) persons with 10% are strongly disagreed.

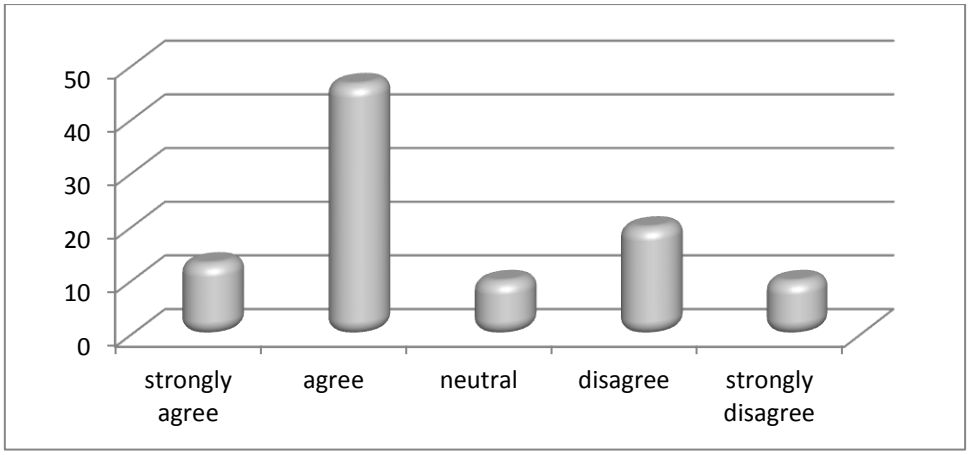

Figure (4.16)

Sociocultural theory tries to explain human cognitive development with regard to social and cultural development. In this theory, human cognition and its development cannot be separated from the society and culture in which it is used. As a matter of fact, sociocultural theory puts the emphasis on social aspect and regards it as primary for cognitive development to occur. Based on the tenets of sociocultural theory, social interaction plays a fundamental role in the development of cognition and learning occurs through participation in social or cultural context. In Vygotsky's view, learning does not occur in isolation. Instead it is strongly influenced by social interaction which takes place in meaningful contexts. In other words, the social interaction with more knowledgeable and capable others and the environment, impacts their ways of thinking and interpreting situations (Packer & Goicoechea, 2000)

Statement No. (14) ***Construction-Integration Model of Kintsch(1998) CI is currently regarded as the most comprehensive model of reading comprehension.***

Table No (4.19) The Frequency Distribution for the Respondents' Answers of Statement No. (14)

Variables	Frequency	Percent%
strongly agree	13	34.4
agree	10	33.3
neutral	3	10
disagree	3	10
strongly disagree	1	3.3
Total	30	100.0

It is clear from the above table No. (4.19) and figure No (4.17) that there are (13) persons in the study's sample with percentage (34.4%) strongly agreed with that "***Construction-Integration Model of Kintsch(1998) CI is currently regarded as the most comprehensive model of reading comprehension. .***". There are (10) persons with percentage (33.3%) agreed with that, and (3) persons with percentage (10.0%) were not sure that, and (3) persons with percentage (10.0%) disagreed. and (1) persons with 3.3% are strongly disagreed.

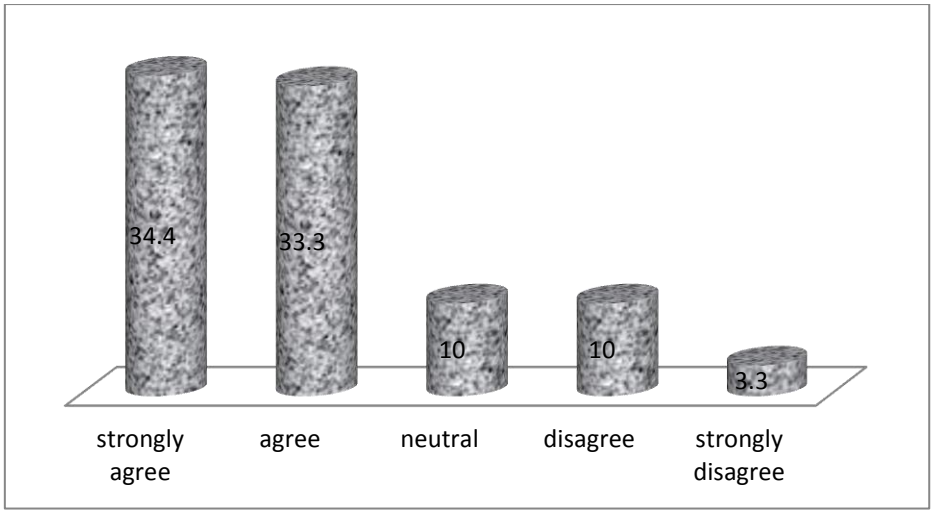

Figure (4.17)

Kintsch's (1998) CI model is currently regarded as the most comprehensive model of reading comprehension. Its remarkably simple computational architecture accounts for a large body of psychological data, including reading times, activation of concepts at different phases of comprehension, sentence recognition, text recall, and text summarization. As will soon be apparent, strategies take a back seat in the CI model. Strategies exist, but they do not drive the comprehension engine. Instead, the front seat of comprehension lies in the bottom-up activation of knowledge in long-term memory from textual input (the *construction* phase) and the integration of activated ideas in working memory (the *integration* phase). As each sentence or clause in a text is comprehended, there is a construction phase followed by an integration phase. A *strategy* is simply a piece of knowledge stored in long-term memory that is periodically activated and recruited during integration. It is mixed in the manifold of hundreds or thousands of other concepts, rules, and content during construction and integration. Simply put, strategies are nothing special other than being another set of rules that get activated and integrated.

Like most models in discourse psychology, the CI model assumes that multiple levels of representation get constructed during comprehension. Four of these levels are (a) the surface code, (b) the propositional text base, (c) the situation model, and (d) the text genre. The *surface code* preserves the exact wording and syntax of the sentences

Statement No (15) ***certainly the process of reading comprehension is a multi-component, complex process involving many interactions between the reader and what they bring to the text.***

Table No (4.20) The Frequency Distribution for the Respondents' Answers of Statement No. (15)

Variables	Frequency	Percent%
strongly agree	3	13.3
Agree	14	46.7
Neutral	3	10
Disagree	7	20
strongly disagree	3	10
Total	30	100.0

It is clear from the above table No. (4.20) and figure No (4.18) that there are (3) persons in the study's sample with percentage (13.3%) strongly agreed with that " ***certainly the process of reading comprehension is a multi-component, complex process involving many interactions between the reader and what they bring to the text***.". There are (7) persons with

percentage (20.0%) agreed with that, and (3) persons with percentage (10.0%) were not sure that, and (14) persons with percentage (46.7%) disagreed. and (3) persons with 10% are strongly disagreed.

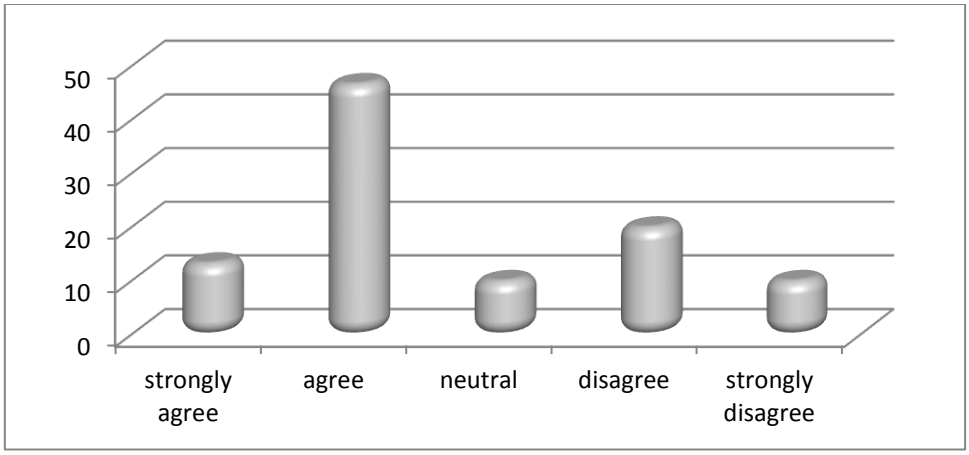

Figure (4.18)

While many middle school, high school, college students –and even adults have learned to read, some will struggle with reading for meaning. To be able to read effectively, these students have to have a good grasp of explicit strategies to use during the process of reading. The strategies are essential for gaining and remembering information from the texts. Good readers are capable of identifying the right types of strategies that readily work with them and know how to apply them to different types of texts. The unfortunate group of those still battling with reading can improve their reading comprehension skills by being exposed and taught strategies, as well as when and how to use them with different types of texts. Consider the following list of strategies which can produce a positive effect on the students' reading comprehension having been taught adequately.

Table (4.21) the mean and standard deviation and chi-square values for the Hypothesis (1):

Nom.	Statement	mean	SD	Chi square	p-value
1	Good readers are distinguished from bad readers through the automaticity of word recognition process	**3.6**	**٠.8**	**29**	**0.023**
2	Cognitive strategies are so powerfully linked with mnemonics.	**2.4**	**٠.5**	**28**	**0.010**
3	The most effective theories of reading is **SQ3R** which is named for its five steps	**3.3**	**٠.7**	**23**	**0.006**
4	The question of reading comprehension can be a very challenging issue	**2.5**	**3.8**	**15**	**0.046**
5	**KWL chart**, is a graphical organizer designed to help in learning in general but can be used in reading particularly	**3.4**	**2.5**	**22**	**0.000**
6	It is ordinary to make a distinction between the *process* of reading and the outcome of that process, the *product*.	**2.8**	**1.7**	**12**	**0.000**

7	Insights that enriched the field of reading have been gained from eye movement photography	**2.9**	**4.8**	**34**	**0.000**
8	**It** is commonplace in theories of reading as well as in everyday talk about reading to distinguish different **levels of understanding** of a text	**2.7**	**٠.5**	**22**	**0.000**
9	Bloom's taxonomy is useful in devising curricula, teaching materials and tests	**2.9**	**٠.7**	**32**	**0.023**
10	In the last few years the phonological awareness and decoding skills of students with reading disabilities have been identified as serious inhibitors to successful reading	**2.6**	**٠.5**	**22**	**0.036**
11	Unfamiliar words can be handled by nonstrategic mechanisms.	**3.6**	**٠.8**	**22**	**0.023**
12	The *memory-based resonance model* developed by Myers and O'Brien and their colleagues is one of the most important theories of reading comprehension35	**3.4**	**٠.5**	**28**	**0.010**

13	Lack of socio-cultural, factual and contextual knowledge of the target language can cause some difficulties in reading comprehension.	**3.6**	**٠.8**	**29**	**0.023**
14	**Construction-Integration Model** of Kintsch(1998) CI is currently regarded as the most comprehensive model of reading comprehension.	**2.4**	**٠.5**	**28**	**0.010**
15	Certainly the process of reading comprehension is a multi-component, complex process involving many interactions between the reader and what they bring to the text	**3.3**	**٠.7**	**23**	**0.006**

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (1) question was (29) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement "Good readers are distinguished from bad readers through the automaticity of word recognition process."

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (2) question was (28) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement "Cognitive strategies are so powerfully linked with mnemonics."

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (3) question was (23) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement "The most effective theories of reading is **SQ3R** which is named for its five steps."

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (4) question was (15) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement "The question of reading comprehension can be a very challenging issue."

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (5) question was (22) which is greater than the tabulated value of chi-square at the degree of freedom (4)

and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement "**KWL chart**, is a graphical organizer designed to help in learning in general but can be used in reading particularly ." .

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (6) question was (12) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement "It is ordinary to make a distinction between the *process* of reading and the outcome of that process, the *product*.".

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (7) question was (34) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement "Insights that enriched the field of reading have been gained from eye movement photography.".

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (8) question was (22) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed

with the statement "**It** is commonplace in theories of reading as well as in everyday talk about reading to distinguish different **levels of understanding** of a text.).

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (9) question was (32) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement "Bloom's taxonomy is useful in devising curricula, teaching materials and tests8.".

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (10) question was (22) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement "In the last few years the phonological awareness and decoding skills of students with reading disabilities have been identified as serious inhibitors to successful reading.".

The calculated value of chi-square for the significance of the differences for the respondents' answers in the No (1) question was (22) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed

with the statement “Unfamiliar words can be handled by nonstrategic mechanisms.”

The calculated value of chi-square for the significance of the differences for the respondents’ answers in the No (2) question was (28) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement “The *memory-based resonance model* developed by Myers and O’Brien and their colleagues is one of the most important theories of reading comprehension”.

The calculated value of chi-square for the significance of the differences for the respondents’ answers in the No (1) question was (29) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement “Lack of socio-cultural, factual and contextual knowledge of the target language can cause some difficulties in reading comprehension”.

The calculated value of chi-square for the significance of the differences for the respondents’ answers in the No (2) question was (28) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement “**Construction-Integration Model** of Kintsch(1998)

CI is currently regarded as the most comprehensive model of reading comprehension ”

The calculated value of chi-square for the significance of the differences for the respondents’ answers in the No (3) question was (23) which is greater than the tabulated value of chi-square at the degree of freedom (4) and the significant value level (5%) which was (4.12). this indicates that, there are statistically significant differences at the level (5%) among the answers of the respondents, which support the respondent who agreed with the statement “Certainly the process of reading comprehension is a multi-component, complex process involving many interactions between the reader and what they bring to the text”

Hypothesis two: ***Independent reading help develop vocabulary quite significantly.***

Statement No. (1) ***I try to familiarize my students with the rules of reading in order to help them read different forms of texts***

Table No (4.22) The Frequency Distribution for the Respondents’ Answers of statement No. (1)

Variables	Frequency	Percent
Always	7	23.3
Often	16	53.3
Sometimes	1	3.3
Seldom	4	13.3
Never	2	6.7
Total	30	100.0

As noted from the above table (4.22) and figure (4.19) It is clear that there are **(7)** persons in the study's sample with percentage (23.3%) answered **always** with **"*I try to familiarize my students with the rules of reading in order to help them read different forms of texts***" persons with percentage (53.3%) answered.

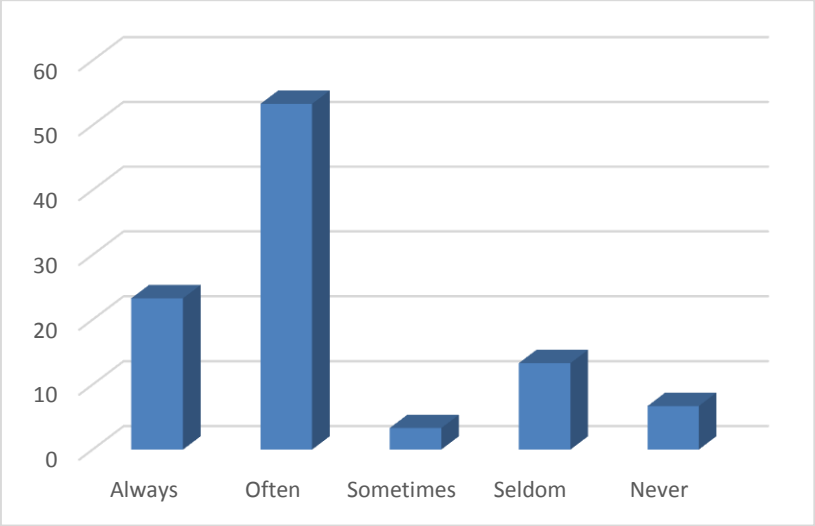

Figure (4.19)

Often with that, and **(1)** persons with percentage (3.3%) answered **Sometimes** with that, and **(4)** persons with percentage (13.3%) answered **Seldom.** And **(2)** persons with 6.7% answered **Never.**

Statement No. (2): *I design reading tasks that raise students' interest and help them learn reading skills and strategies and I avoid tasks that require memorization rather than understanding*. .

Table No (4.23) The Frequency Distribution for the Respondents' Answers of statement No.(2)

Variables	Frequency	Percent
Always	11	36.7
Often	13	43.3
Sometimes	1	3.3
Seldom	2	6.7
Never	3	10.0

Judging by the above table (4.23) and figure (4.20) It is clear that there are **(11)** persons in the study's sample with percentage (36.7%) answered **always** with **" *I design reading tasks that raise students' interest and help them learn reading skills and strategies and I avoid tasks that require memorization rather than understanding*."**

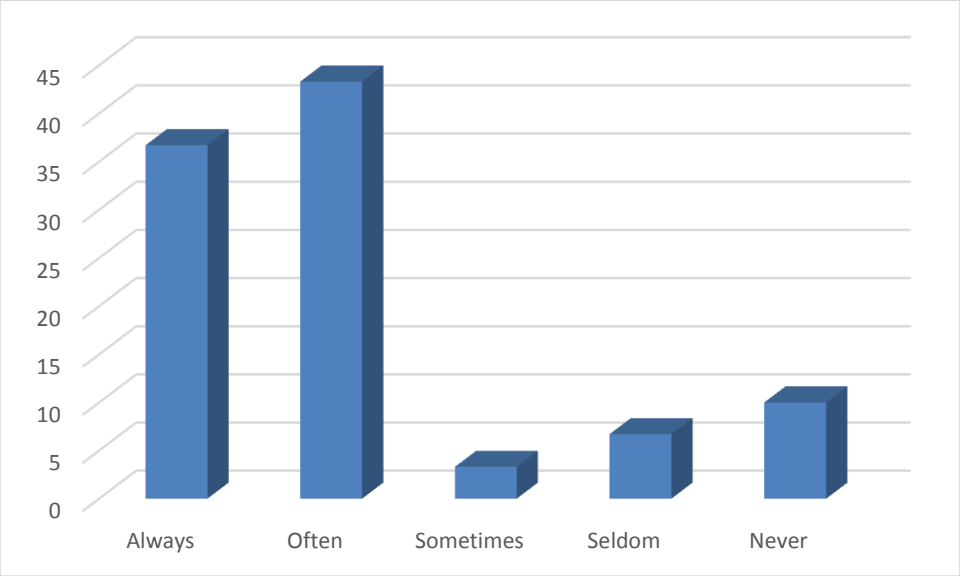

Figure (4.20)

There are **(13)** persons with percentage (43.3%) answered **Often** with that, and **(1)** persons with percentage (3.3%) answered **Sometimes** with that, and **(2)** persons with percentage (6.7%) answered **Seldom.** And **(3)** persons with 10.0% answered **Never.**

Statement No. (3): ***I pre-teach new vocabulary, grammatical items and provide my students with background knowledge, socio-cultural knowledge and linguistic knowledge before reading to the text***.

Table No (4.24) The Frequency Distribution for the Respondents' Answers of statement No. (3)

Valid	Frequency	Percent
Always	16	53.3
Often	8	26.7
Sometimes	2	6.7
Seldom	2	6.7
Never	2	6.7
Total	30	100.0

Considering the above table (4.24) and figure (4.21) It is clear that there are **(16)** persons in the study's sample with percentage (53.3%) answered **always** with **" *I pre-teach new vocabulary, grammatical items and provide my students with background knowledge, socio-cultural knowledge and linguistic knowledge before we start reading a newspaper text. All the aforementioned items are closely linked with the context of the text to be handled.***

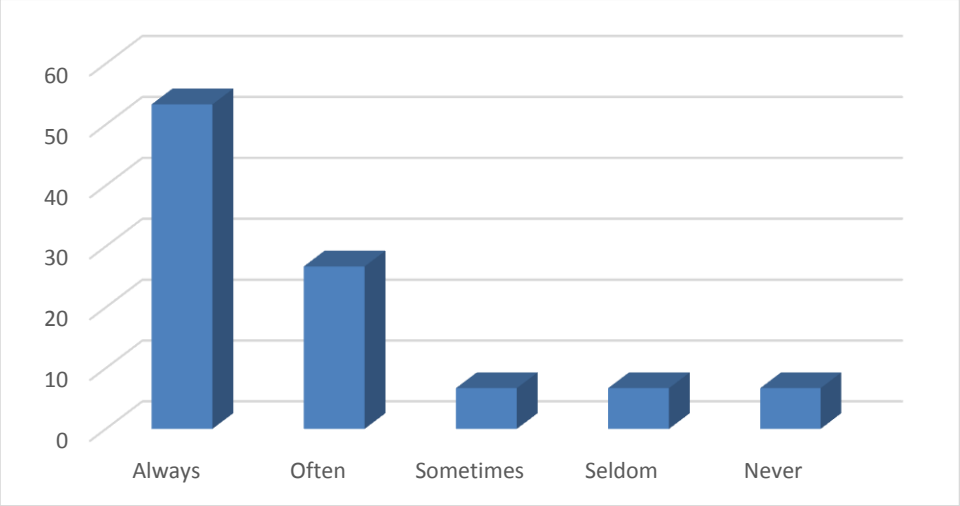

Figure (4.21)

There are **(13)** persons with percentage (43.3%) answered **Often** with that, and **(8)** persons with percentage (26.7%) answered **Sometimes** with that, and **(2)** persons with percentage (6.7%) answered **Seldom.** And **(2)** persons with 6.7% answered **Never.**

Statement No. (4): *I use audio –visual aids with high qualities rather than tapes to teach reading comprehension because I believe that body language and facial expressions make it easier for the students to understand the writer's intended meaning*.

Table No (4.25) The Frequency Distribution for the Respondents' Answers of statement No. (4)

Variables	Frequency	Percent
Always	11	36.7
Often	13	43.3
Sometimes	1	3.3
Seldom	2	6.7
Never	3	10.0
Total	30	100.0

Judging by the above table (4.25) and figure (4.22) It is clear that there are **(11)** persons in the study's sample with percentage (36.7%) answered **always** with **"** *I use audio –visual aids with high qualities rather than tapes to teach reading comprehension because I believe that body language and facial expressions make it easier for the students to understand the writer's intended meaning***".**

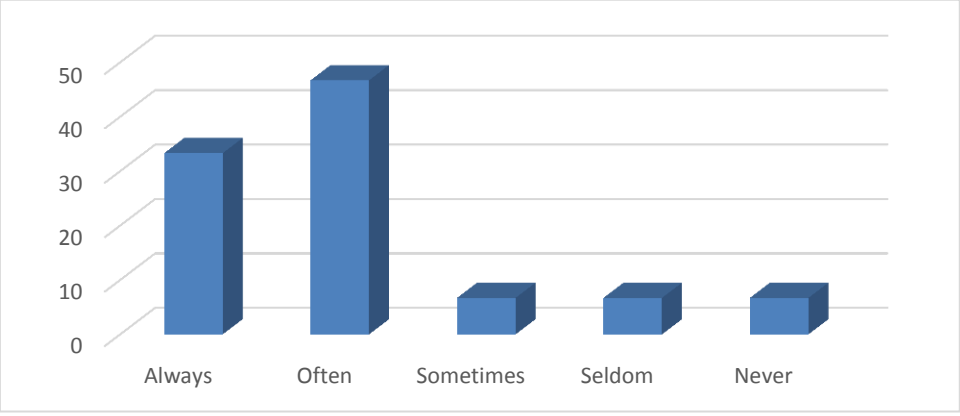

Figure (4.22)

There are **(13)** persons with percentage (43.3%) answered **Often** with that, and **(1)** persons with percentage (3.3%) answered **Sometimes** with that, and **(2)** persons with percentage (6.7%) answered **Seldom.** And **(3)** persons with 10.0% answered **Never.**

Statement No. (5): ***I train my students to read and try to grasp the main idea depending on their background knowledge rather than to understand every single word or phrase.***

Table No (4.26) The Frequency Distribution for the Respondents' Answers of statement No. (5)

Valid	Frequency	Percent
Always	10	33.3
Often	14	46.7
Sometimes	2	6.7
Seldom	2	6.7
Never	2	6.7
Total	30	100.0

As noted from the above table (4.26) and figure (4.23) It is clear that there are **(10)** persons in the study's sample with percentage (33.3%) answered **always** with **" *I help my students to read and try to grasp the main ideas depending on their background knowledge and context of situations rather than understanding every single word or phrase***.

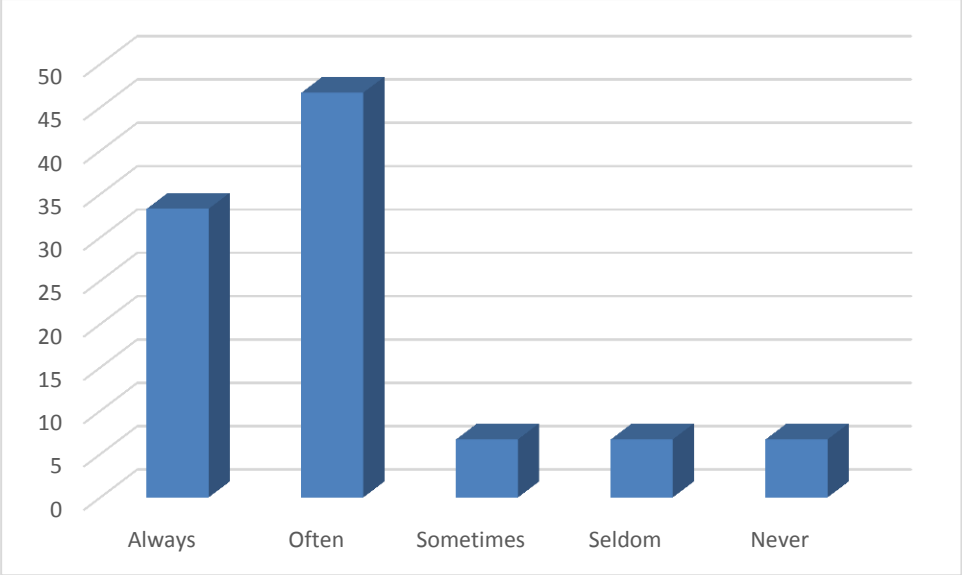

Figure (4.23)

There are **(14)** persons with percentage (46.7%) answered **Often** with that and **(2)** persons with percentage (6.7%) answered **Sometimes** with that, and **(2)** persons with percentage (6.7%) answered **Seldom.** And **(2)** persons with 6.7% answered **Never.**

Statement No. (6): ***I teach reading in small classes and I use different types of language input such as films, everyday conversations, and interviews.***

Table No (4.27) The Frequency Distribution for the Respondents' Answers of statement No. (6)

Valid	Frequency	Percent
Always	12	40.0
Often	12	40.0
Sometimes	2	6.7
Seldom	2	6.7
Never	2	6.7
Total	30	100.0

As regards the above table (4.27) and figure (4.24) It is clear that there are **(12)** persons in the study's sample with percentage (40.0%) answered **always** with " ***I teach reading in small classes and I use different types of language input such as films, everyday conversations, and interviews. . .".***

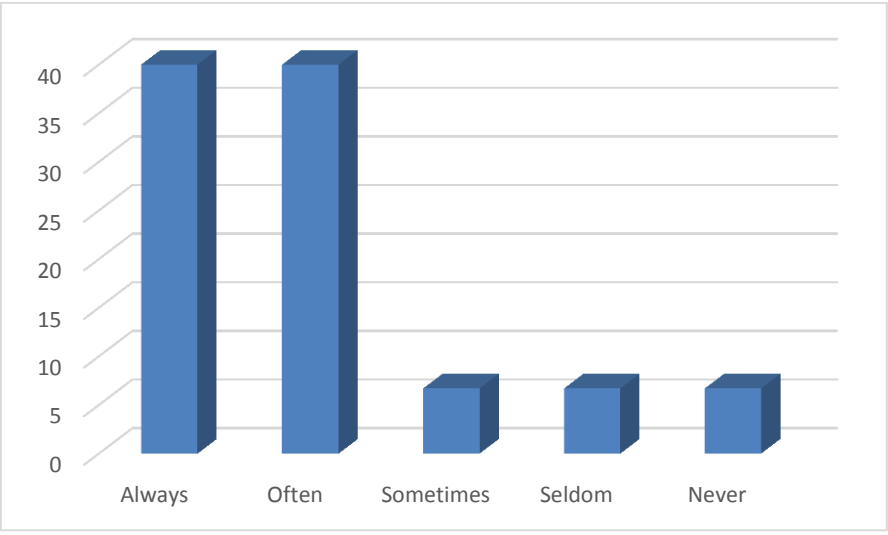

Figure (4.24)

There are **(12)** persons with percentage (40.0%) answered **Often** with that and **(2)** persons with percentage (6.7%) answered **Sometimes** with that and **(2)** persons with percentage (6.7%) answered **Seldom.** And **(2)** persons with 6.7% answered **Never.**

Statement No. (7): ***I design reading tasks according to the level of complexity; simple tasks to lower level students and complicated authentic material to more advanced learners***.

Table No (4.28) The Frequency Distribution for the Respondents' Answers of statement No. (7).

Valid	Frequency	Percent
Always	6	20.0
Often	18	60.0
Sometimes	1	3.3
Seldom	3	10
Never	2	6.7
Total	30	100.0

Judging by the above table (4.28) and figure (4.25) It is clear that there are **(6)** persons in the study's sample with percentage (20.0%) answered **always** with **"):** ***I design reading tasks according to the level of complexity; simple tasks to lower level students and complicated authentic material to more advanced learners***

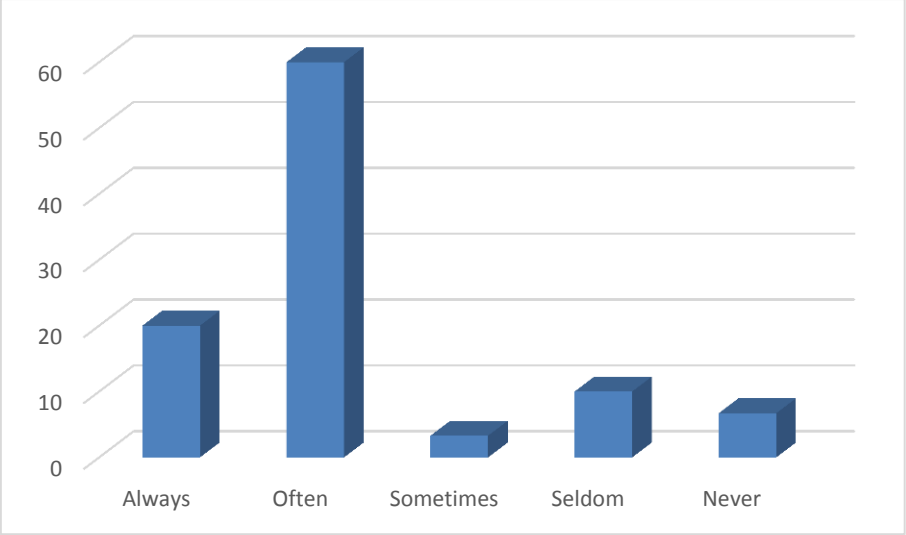

Figure (4.25)

Statement No.(8): ***I try to raise my students' awareness about the purpose of reading (reading for gist, specific information or detailed information) and I motivate and encourage them to interact with the reading task*****.** .

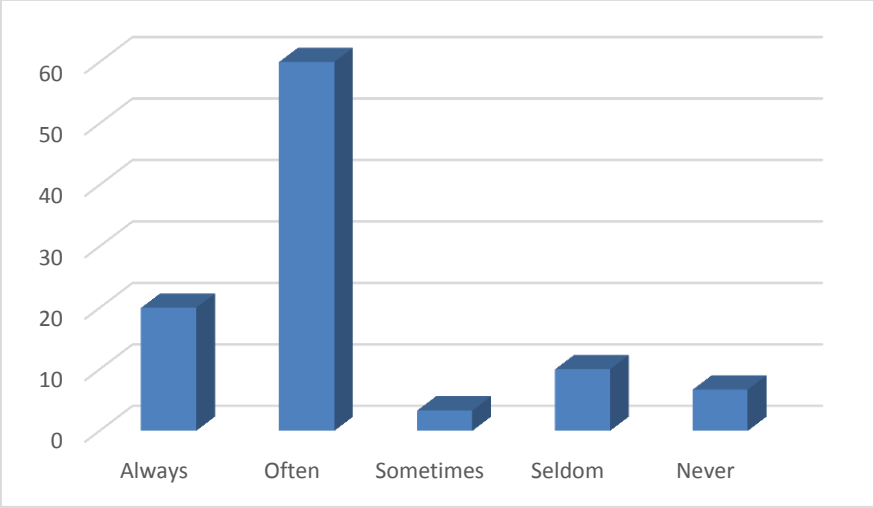

Figure (4.26)

There are **(18)** persons with percentage (60.0%) answered **Often** with that, and **(1)** persons with percentage (3.3%) answered **Sometimes** with that, and **(3)** persons with percentage (10.0%) answered **Seldom.** And **(2)** persons with 6.7% answered **Never.**

Statement No. (9): ***I try to get my students to understand the intended oral message by predicting and inferring the meaning depending on the speakers' mood and the setting of the utterance.***

Table No (4.29) The Frequency Distribution for the Respondents' Answers of statement No. (9)

valid	Frequency	Percent
Always	6	20.0
Often	11	36.7
Sometimes	3	10.0
Seldom	8	26.7
Never	2	6.7
Total	30	100.0

From the above table (4.29) and figure (4.27) It is clear that there are **(6)** persons in the study's sample with percentage (20.0%) answered **always** with **"** ***I try to get my students to understand the intended oral message by predicting and inferring the meaning depending on the speakers' mood and the setting of the utterance***.

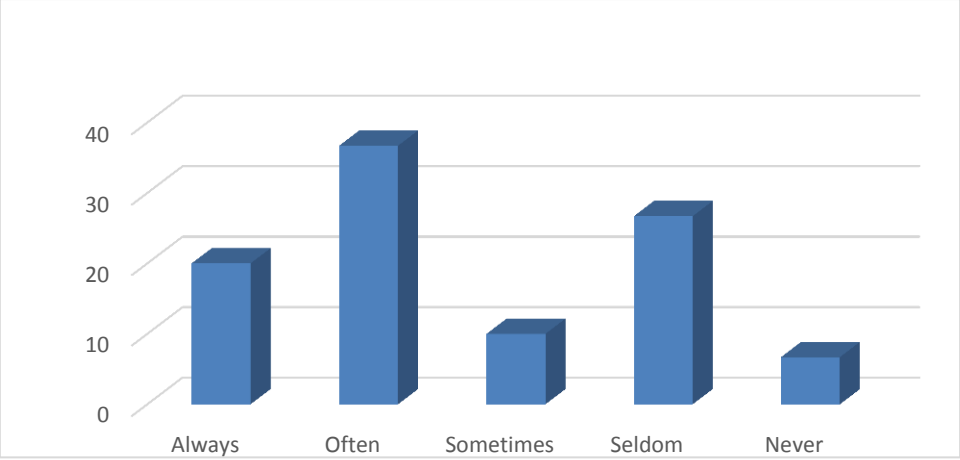

Figure (4.27)

There are **(11)** persons with percentage (36.7%) answered **Often** with that, and **(3)** persons with percentage (10.0%) answered **Sometimes** with that, and **(8)** persons with percentage (26.7%) answered **Seldom.** And **(2)** persons with 6.7% answered **Never.**

Statement No. (10):

Table No (4.30) The Frequency Distribution for the Respondents' Answers of statement No. (10)

Variables	Frequency	Percent
Always	4	13.3
Often	6	20.0
Sometimes	1	3.3
Seldom	13	43.3
Never	6	20.0
Total	30	100.0

From the above table (4.30) and figure (4.28) It is clear that there are **(4)** persons in the study's sample with percentage (13.3%) answered **always** with **" *I raise my students' attention to the importance of reading in language development and that reading is a complex task that requires many skills such as attention, perception, recognition and memory*. .**

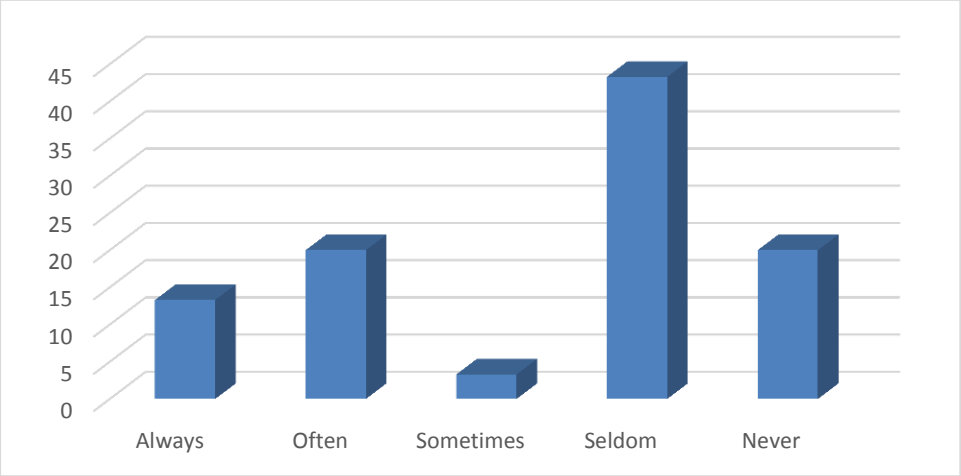

Figure (4.28)

From the above table (25) and figure (24) It is clear that there are **(4)** persons in the study's sample with percentage (13.3%) answered **always** with **" *I raise my students' attention to the importance of daily reading newspapers and drawing on their styles in their writing. I make it clear that due to cultural barriers a journalistic text can turn out to be difficult however this should not stop them from getting along with their task.***

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter provides a summary of the study, conclusions, recommendations and suggestions for further studies.

Part one:

5.1 Summary and Conclusions

This thesis sets out to investigate Students' depth of vocabulary knowledge and reading comprehension. There is a direct correlation between the depth of vocabulary knowledge and reading comprehension. In order for the students to proceed with their overall learning across the different disciplines, they should have good grasp of reading and good vocabulary.

The basic function of language is to convey meaning through the sharing of information, ideas and perspectives. When written message are carefully written in a way that they can easily be read and understood, the sheer reading operation becomes highly enjoyable and wonderfully inspiring. This is because the message has to convey information and transform experience Written language has the power to take the mind to different places, times and events; it can put us in the shoes of fascinating characters and hold our attention through gripping plots, suspense and intrigue. Texts can provide escapism and offer alternative perspectives on the world; what's more, they can 'kindle' our imaginations to create rich mental images that may stay with us forever. Texts can inform and develop knowledge, provide us with new vocabulary and provoke new ways of thinking.

As far as the present study is concerned, a number of questions were raised:

1. To what extent does the depth of vocabulary knowledge correlate with good reading comprehension?
2. To what extent does independent reading help develop vocabulary quite significantly
3. To what extent does the depth of vocabulary knowledge affect reading comprehension?

These questions were in turn have been changed into hypothetical statements that were verified across chapter four. To achieve the set objectives the study adopted a diagnostic test and two questionnaires. The core of information gathered in the present study has been collected through the use of the diagnostic tests and the questionnaires. The method adopted in this research is descriptive analytical approach. Data has been collected by using two tools: a diagnostic test for (30) EFL Sudanese university students and a questionnaire for (30) EFL Sudanese university teachers, all the data has been then analyzed through SPSS (Statistical Package for Social Sciences).

The population of the study are those of Ibn Khaldoon (a privately run College) second year students of the English Department to whom the test is administered and expert EFL Sudanese university teachers who participated in the questionnaire. The researcher conducts the test at Ibn Khaldoon College, English Department. The sample of the study was taken from first year students, second semester. They are a heterogeneous group of students majoring in different disciplines such as nursing, medicine, management and dentistry. They are of the same level of English abilities and are approximately the same age, (30) students participated voluntarily; the test took place during their second semester of the (2019) university academic year.

The purpose of this research is to investigate reading comprehension difficulties that face EFL Sudanese university students. To achieve this goal and in an attempt to answer the research questions, data has been collected through using two tools, a diagnostic test for (30) students who have participated voluntarily and have been selected randomly from second year students at Ibn Khaldoon College and a questionnaire for (30) expert English reading comprehension teachers at Sudanese Universities.The data collected has been analyzed statistically by SPSS.

Part two:

5.2 Recommendations

Based on the findings of this study, the following recommendations are suggested:

(1) Though a number of researches has been done on reading comprehension, the area of reading comprehension is still open to further investigation especially at the university level.

(2) Tutors at the university level handle their reading comprehension texts along traditional or classic methods. The world of education and learning now is teeming with new classroom methods of teaching which have proven to be effective. So our tutors have to consider new ways of presenting their classes.

(3) Introspection, through think-aloud protocols or verbal retrospection in interviews, is an increasingly frequently used method of investigating, however this is barely investigated in our country. Future research should take into consideration such phenomenon of reading for investigation.

(4) An alternative approach to examining the process of reading is to inspect the product of reading and, often, to compare that product with the text originally read. It is sometimes said that,

although different readers may engage in very different reading processes, the understandings they end up with will be similar. This fact also has to be taken care of; in future research as far as reading comprehension is concerned.

(5) Readers' knowledge and experiences influence the realization of this meaning potential, and since readers may differ in their knowledge and experiences, then the products of reading will also necessarily differ. This parameter of reading should be taken into account when conducting reading comprehension research.

Part three:

5.3 Suggestions for Further Study

This study puts forward the following suggestions:

(1) More contrastive studies to be carried out on reading comprehension along the lines of new method of investigation on the area in question.

(2) Future investigation on reading comprehension should pay attention to the process and product.

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