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The Effectiveness of Micro-Skills on Developing Second Language

Reading Comprehension in the Scientific English Text

A Discourse Analysis Perspective

The Case of 1st Year Master Biotechnology Students at Ouargla University

Publically defended

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Dedication

With great love, I dedicate this work to all my family's members especially to my dear mother Najiba Arbawi who try to give me the confidence and the tenderness as well as the importance of being honest and brave toward all the problems that may encounter me in my life

To my brother Nour Eddine who is always in the position of my father, and who advises me to give respect to all people who teach me the knowledge I have in my life

To all my friends in the English department of Kasdi Merbah University, and to my intimate friends Jihade, Safia, Sara, and especially Hakima who supported me to accomplish this work.

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List of Abbreviations

1. **EAP:** English for Academic Purposes.
2. **EOP:** English for Occupational Purposes
3. **EGAP:** English for General Academic Purposes.
4. **ESAP:** English for Specific Academic Purposes.
5. **ESP:** English for Specific Purposes.
6. **EST:** English for Science and Technology.
7. **SL:** Second Language
8. **FL:** Foreign Language
9. $\bar{X}$: The Mean

General Introduction

1. The research purpose

It is commonly known that English language is the most used vehicle in both English-speaking and non-speaking world. It is also the media being used in the educational and scientific context. These two aspects lead to the appearance of a discipline which is known as English for Academic Purposes (EAP). Moreover, mastering this language is achieved through reading different kinds of materials. Thus, this skill is the parameter that distinguishes good readers from the poor ones, and it is the component that should be found in the syllabus of any course. Therefore, the aim of this research is to suggest some micro-reading skills that enable the ESP learners to develop their SL reading comprehension in the different academic scientific texts. In addition to that, this research aims at stimulating the ESP teachers to include these micro-skills in their reading lessons and assessment. The third aim of this research is to help students rely on discourse analysis approach when they read different types of texts.

2. The research motivation

Many reasons motivate us to conduct this research. The first important reason is due to the fact that reading is often seen as a passive activity, and accordingly, students in all domains do not read because they find nothing that motivates them to read the material. The second obvious reason that motivates us is that learners do not like to read texts that sound difficult to them such as the scientific one. For that reasons, it is intended in this study to list different micro-skills that play the role of stimulating the learner to read such type of text and motivate ESP teachers to include them in their lessons.

3. The Problem Statement

Reading skill is one of the important components in the stream of English learning and teaching that the SL learners should master. In addition, SL teachers try to enhance the students' reading comprehension in the texts that are selected in the reading lessons. For that reasons, this paper is carried out to highlight the effectiveness of micro-skills on developing SL reading comprehension in the scientific English text.

It is also observed that one of the problems that encounter SL readers is how they use these skills to enhance their reading comprehension in scientific texts, since these texts are difficult and full of technical terms that may not motivate the learners to read such texts.

For this enquiry the following research question has been raised:

To what extent can micro-skills develop SL reading comprehension in the scientific English text?

4. The research hypotheses

Different hypotheses are formulated as an attempt to give a tentative answer to the research question. The following are suggested:

- Micro-skills can develop S L reading comprehension.
- SL Reading comprehension can be developed in association with the appropriate selection of the texts.
- Discourse Analysis is the key element which assists ESP learners to enhance their reading comprehension.

5. The research structure

In term of the research organization, this study is divided into two parts. The first part consists of two chapters. The first chapter encompasses three subtitles; the first defines English for academic purposes (EAP), the second subtitle identifies English for science and technology(EST), and the third subtitle relates to the description of scientific text from discourse analysis view. The second chapter deals with the key components underlying SL reading comprehension. Amongst, the definition of SL reading comprehension, the most important micro-reading skills that are essential in the scientific text and the third component is the inclusion of some cohesive devices as focus in reading comprehension. The second part will be a practical application to what has been mentioned in the theoretical part.

Introduction

In this chapter, we are going to introduce (EAP) as a discipline within (ESP). We will concentrate on its main definitions, different areas, and divisions. Then we are going to narrow our focus on one of the important sub-types within EAP which concerns with English for Science and Technology (EST). Its definition and its distinguishing features are highlighted. Finally, we are going to deal with one of the crucial component within scientific English, and which is an important step in this research. This component is scientific text. In addition, we are going to study the later point from discourse analysis perspective, concentrating on the very important elements that are related to the texture of scientific text.

1.0. Definitions of English for Academic Purposes (EAP)

Dudley-Evans and Maggie (1998) define EAP as an area that relate to the teaching of any type of English that is directed to a study purpose.

According to Flowerdew and Mattew (2001), EAP is related to the teaching of English that has specific aim of helping learners to perform the different tasks using that language.

Clapham (2001) defines EAP as the English being taught and learnt in the universities and colleges which has Specific studying purposes.

1.1. EAP Areas

Flowerdew and Mattew (2001) suggest four geographical situations where English language is utilized differently for multiple purposes. On the other hand, Dudley-Evans and Maggie (1998) report four types of academic situations in which English is used in the course differently. Our concern in this paper is to focus on the situation where English is used as a secondary element in the syllabus. That is, in this EAP situation the English being taught is used as technical language, and the course depends mainly on reading skills as well as the grammatical and the lexical items that help the students to comprehend the text.

1.2. Divisions of EAP

EAP consists of two main sub-divisions which are English for Academic Purposes (EAP) and English for Occupation Purposes (EOP). This division is based on the requirement of using English for either academic or training purposes. Accordingly, this division is not clear-cut. That is to say, much of the work which is done in the academic environment is going to prepare students for the workplace situation (Hutchinson & Water, 1987; Mattew & Flowerdew, 2001).

Flowerdew and Mattew (2001) divide EAP into two distinct sub-divisions; EAP courses designed to help students in their studies, and the same courses are designed to direct students to their work situations. The following figure illustrates the previous point:

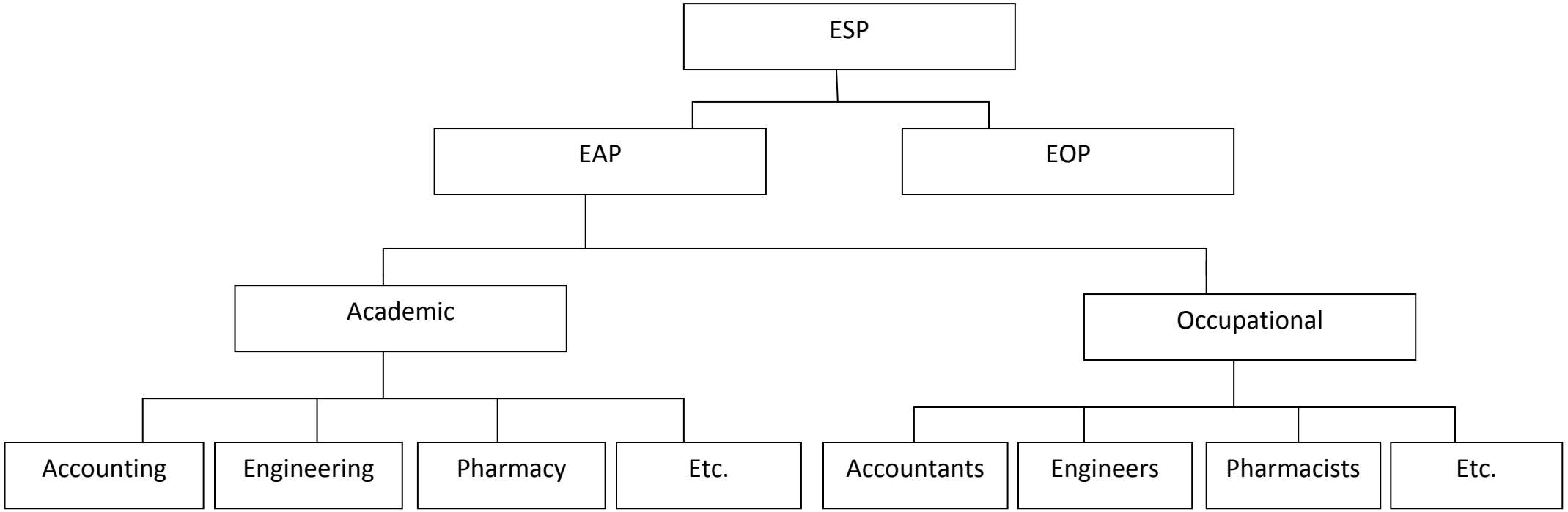

Figure 01: sub-divisions of EAP (Adapted from Flowerdew, J., & Mathew, P., 2001, p. 12).

This figure reports that EAP course could be directed to accomplish both academic and occupational purposes.

Dudley-Evans and Maggie (1998) and Clapham (2001), make another division to EAP. They divide it into English for general academic purposes (EGAP), and English for specific academic purposes (ESAP). The former concerns the teaching of skills in connection to language activities that are frequent to all disciplines. The latter integrates the skills that are already developed in EGAP course to help students understand their tasks. These two academic classes have complementary roles.

1.3. Identifying English for Science and Technology (EST)

According to Dudley-Evans and Maggie (1998), English for science and technology has been viewed as an important sub-division within EAP. On the other hand, Hutchinson and Waters (1987) emphasizes that EST has contributed the development of ESP. Wood (2001) also assumes that EST is one of the standard division within the framework of EAP.

1.3.1. Definition of Scientific English

Carroll (n.d.) defines scientific English as a distinct language that has special code, strategies, and simple manner. It is also used by the multi-science disciplines as a communication tool. That is to say, it is the universal system used by the different scientists around the world, and the users of that language tend to use words that have only its very restricted and narrowed sense.

On the other hand, the linguist Bloomfield assumes that there are certain features characterize scientific English. These latter can be recognized through his quotation:

> The use of language in science is specialized and peculiar. In a brief speech the scientist manages to say things which in ordinary language require a vast amount of talk. His hearers respond with great accuracy and uniformity. The range and exactitude of scientific prediction exceed any cleverness of everyday life: the scientist's use of language is strangely effective and powerful. Along with systematic observation, it is this peculiar use of language which distinguishes science from non-scientific behavior (as cited in Carroll, pp. 1-2).

According to Bloomfield quotation, scientific language does not resemble the ordinary language. In that, the former is merely a brief speech. That is to say, the transmissions of meanings require only some limited words. Unlike the former, one meaning may need an enormous amount of talk in the ordinary language. So, scientific language is accurate, uniform, and distinctive language.

1.3.2. Distinguishing Features in Scientific English

1.3.2.1. Scientific English as Communication Tool

Carroll (n.d.) claims that scientists use scientific English in restrict and narrow term when they engage in communication. Within this framework, words are merely used as mechanical and physical tool. Their roles are to convey units of information that are purely objective, and set to serve the scientific community.

1.3.2.2. Scientific English as a Means of Writing

Carroll (n.d.) asserts that the value of scientific English determine the value of scientific outcomes. In other words, the scientist findings are valued through the kind of language he/she uses. Scientific English, also, is the code that mediates between the scientist as writer and the reader who are interested in knowing the different scientific investigations. For that reason, scientific English is to be highly- formalized language.

1.3.2.3. The Absolutes of Scientific English Writing

Glass reports that there are distinctive obligations that should be provided in the scientific English writing. These are as follow:

- The publication of the scientific writings should be clear, full, and truth-based.
- The scientific writing should tackle the current knowledge.
- Any scientific attempts should be generalized.
- The new scientist comers should be acquainted with scientific writing's absolutes (as cited in Carroll, P. 4).

1.3.2.4. Scientific English as Plain Language

According to Bacon, who brings new way of using plain English scientifically in document for different purposes, argues that the effective use of words serve the scientist's writer to deliver authentic knowledge that is based on clarity and exactness. Bacon sees that the quality of scientific words is to be specific, well formalized, impersonal, and neutral (as cited in Carroll, p. 9)

That is to say, scientific English is able to express via simple and clear words the most complicated scientific issues which, in turn, show the beauty of science.

1.3.3. Definition of Scientific English Text

Kinneavy states that all scientific texts have identical organizational patterns, i.e. these texts are put to discuss, describe, and evaluate the different natural and human behavior (as cited in Hutchins, 1977).

Hutchins (1977) indicates that there are two types of scientific texts. The first concentrates on explaining and generalizing any particular instances that are observed from natural and human life. The second type clarifies and account for any scientific issue that sound controversial or not evident.

1.3.4. The Cohesive devices of Scientific Text

Hutchins (1977) acknowledges that there are two views that should be taken into consideration when it comes to the study of scientific text structure. The first concerns with the mechanisms of textual cohesion. That is to say, how a set of sentences construct a coherent text. This involves the study of the different kinds of reference, substitution, ellipsis, theme, and rheme. The second view studies the structures of scientific text from wide perspective. That is to say, it seeks to comprehend the extra-linguistic, or the context of that text-type.

These cohesive devices are found particularly in the scientific text. Some of them are listed under the following sub-titles:

1.3.4.1. Reference in Text

Brown and Yule (1983) suggest that reference in text is a set of linguistic units that have referential relationships to some other items in the text. Their interpretation depends solely on the way they distributed in text. That is to say, the interpretation of that linguistic unit may refer backward, forward, or to the outside environment of the text.

On the other hand, Halliday and Hassan (1976) distinguish two classes of reference. These are Situational and textual reference. Situational references, or exophora, are items identified in the context or the situation that surround the text. Textual, or endophora, are items that refer either anaphorically or cataphorically to another items in the text.

1.3.4.2. Substitution and Ellipsis

Halliday and Hassan (1976); Brown and Yule (1983) define these two cohesive devices as follow; Substitution is the replacement of one item by another one. Ellipsis occurs when parts of text are omitted. They also assume that ellipsis is a form that is replaced by nothing in text. So, ellipsis can be considered as part of substitution.

1.3.4.3. Theme and Rheme in Scientific texts

Hutchins (1977) believes that sentences of all texts, at the micro-structure level, are connected by thematic progression. That is to say, any particular sentence provides some pre-determined data to the previous units in the text so that it paves the way to convey new information. Thus, a sentence has two parts, a theme and a rheme; a theme, or the given information as it is known, consists of those elements that are mentioned previously in the discourse, or related to some features in the context of the text**.** On the other hand, a rheme, or the "new" information, made up those elements that convey information that is not know or predictable in the text.

Accordingly, thematic elements are found prior to the rhematic ones. That is when scientific texts are read. It is accustomed to start from what is knowledgeable before moving on to the unpredictable elements in text.

Conclusion

The discussion that is developed so far aims to introduce the area of English for academic purposes (EAP). Hence, we have covered a lot of ground in this discipline. First, we have defined EAP from different perspectives focusing on its main areas and divisions. Second, we have moved on to present English for science and technology (EST) as one of the standard element within (EAP). One of the requirements in this research is to identify scientific English, and to concentrate on its distinctive features. Another requirement is to focus on the scientific text; taking into consideration its definition and the texture structure that underlying it. In fact, there are two different reasons that insist us to tackle scientific texts. The first relate to the fact that the main concern of this study is to make the reader conscious about the general framework of this type of text which used to be looked as a difficult material that the reader may encounter with. The second reason, and the important one, is that this research aim to develop the essential reading skills that are needed in scientific text.

Introduction

In this chapter, the focus will be on different issues that are related to SL reading comprehension. These components are presented as follow: the first concerns with the definition of the SL reading comprehension. The second component is the different types of reading. The third component deals with SL reading as interactive processes. The other component is the importance of micro-skills that are crucial in the comprehension of the scientific English text. The subsequent component stresses the importance of discourse analysis approach in SL reading comprehension. This component contains the most important cohesive devices that are needed in the comprehension of any-text type.

1.0. Definition of SL Reading

Alderson and Bachman (2000) acknowledge that reading is a very complicated process in which many aspects interact, and this interaction is recognized through the relationship between the reader and the text. The reader, in his/her position, is supposed to decipher the codes in the text relaying on his/her previous reading.

According to Grellet (1981), reading is to single out the relevant information that is required to comprehend the text using certain skills. It is also defined by Grellet as the process of extracting the ideas depending on some guesses, and the knowledge that the reader brings to the text.

Murcia and Eliteobshtain (2000) stress the importance of reading in the second language since it offers the appropriate instrument with which the reader can improve his/her abilities in the target language. That is to say, the more the FL learner read in that language, the more he/she get great amount of knowledge in that language.

In the SL reading, the reader uses two different categories of knowledge. The first category aids the reader to decode the language of the text. This kind of knowledge refers to as systemic knowledge which includes syntactic and morphological knowledge. The second category permits the reader to interact with the text in order to extract its meaning. This class of knowledge is known as schematic knowledge which include genre, socio-cultural, and world knowledge (Hedge, 2000).

1.1. Types of SL Reading Comprehension

1.1.1. Extensive Reading

According to Hedge (2000), extensive reading is concerned with the reading of large quantity of materials in an uncountable period of time. The purpose behind this type of reading is to extract meanings, get some pleasure, and/or to fulfill the reader's curiosity.

Harmer (2001) reports that reading extensively means to give readers lengthy material for the sake of getting some pleasures. It takes place in different sittings in addition to the environment of the classroom. The aim of extensive reading is to enable the readers develop their reading abilities at all levels of SL language.

Davies stresses the importance of extensive reading in the students' learning experience. He argues that any teaching method will not able to manage the participation in the classroom successfully if there is no effort given to any extensive reading programme (as cited in Harmer, 2001 p. 204).

That is to say, this type of teaching will help the SL readers have positive attitude toward reading, and it aids them to increase their reading abilities. So, teachers should give the readers a variety of topics that sound interest to them (Harmer, 2001).

1.1.2. Intensive Reading

In contrast with extensive reading, intensive reading is related to the type of reading that takes place in the classroom. The length of the material is no more than one or two pages. It is used to help reader to develop different set of strategies in the text, for instance, predict the content, guess the meaning, and so forth (Hedge, 2000).

Harmer (2001) believes that reading intensively involves taking many considerations. The first is that teacher should select the kind of the topics which make SL readers activate their schema knowledge, and which are in the same time motivating them. One component is to set for the reader the purpose behind his/her reading. The other is to observe them how they read the text. Another component that is obtained from the teaching of intensive reading is to make readers notice the language features in the text.

1.2. SL Reading as an Interactive Process

Murcia and Eliteobshtain (2000) assume that reading involves three participants: the writer, the text, and the reader. These three components play the role of making reading as a communicative act. That is to say, the function of the writer in the text is to transmit particular ideas. These latter are to be deciphered by the reader. Thus, there is an interacted circle between these participants.

Hedge (2000) assumes that second language reading is an interactive process. Since, the SL reader makes his/her effort to recognize the writer's intention through the text. That is to say,

the SL reader is involved, in one way or another, in a very interactive process in which he/she struggles to create a particular meaning in the material on the basis of the knowledge that reader brings to the text.

Murcia (2001) assumes that reading is a complicated process, and it involves the interaction between the text that is full of symbols, and the readers who is distant from the print in time and place, and who is making this activity in a particular social context.

1.3. Micro-Skills to SL Reading Comprehension

Alderson and Bachman (2000) claim that one of the important issues in the concept of comprehension is how the SL readers use some reading skills appropriately in text, without reading it many times, and getting nothing from it. So, comprehension can be achieved by the incorporation of these skills when reading the text.

On the other hand, Munby distinguishes different set of micro-skills in reading. Some of them are related to the way the internal linguistic elements of the text are decoded. Others are concerned with the interpretation of the text relaying on the surrounding context (as cited in Alderson & Bachman, 2000).

Murcia and Eliteobshtain (2000) claim that SL readers should develop and be aware of some skills which enable them to decode the internal elements of the text and at the same time bring the appropriate knowledge to that text.

Then, we are going to list the micro-skills that are necessary to comprehend all text-type in general and the scientific text in particular. The effectiveness of these skills in the scientific text is proved through an experiment conducted in the practical part of this study. These micro-skills should be considered and included in any scientific text's reading comprehension activities

1.3.1. Skimming for General Ideas

Grellet (1981) defines skimming as the movement of the reader's eyes over the print in order to get the gist and the intention of the writer. Thus, skimming is to view the surface of the reading material.

Harmer (2001) reports that one of the strategies that the readers adopt to read a particular text is to look quickly throughout the reading material. This skill is known as skimming. It is the movement of the readers' eye over the text quickly to get the general idea of that print.

By doing so, readers will be able to get the gist of the text before move on to the detailed information.

1.3.2. Scanning for Particular Information

Glendinning and Holmstrom (2004) define scanning as one of the key skills that the reader uses to locate specific information in the text. In scanning, the readers pick out the relevant information that he/she needs.

On the other hand, Grellet (1981) defines scanning as a more specific process in which the reader locates the required information without follow the organization of the text.

Harmer (2001) acknowledges that readers read the text to locate the specific information that interests them. That is, the reader views only those thoughts that he/she looks for. By doing so, the readers may read the whole text but the emphases will only concerns the information that interests them without giving great attention to the organization of the text.

1.3.3. The knowledge of Vocabulary

Nagy (1988) reports that the text reading comprehension can be increased if students develop their knowledge of vocabulary. He adds that students who know great amount of vocabulary. They extremely succeed to increase their reading comprehension. Thus, teacher should teach their students different set of vocabularies in order to comprehend different types of text.

According to Anderson and Freebody, the knowledge of vocabulary is important in reading comprehension. That is to say, the more reader has particular amount of knowledge the more texts are easily comprehended (as cited in Nagy, 1988).

Sedita (2005) admits that vocabulary is one of the important elements that teach learners the way they read better. The teaching of vocabulary in the classroom through different activities aid the reader to build his/her background knowledge, and enable him/her to communicate with the text successfully.

Grab (2009) stress on the importance of vocabulary knowledge in reading. Since it facilitate the task of reading, and make readers competent in this skill. In other words, reading enable readers to have large quantity of words in their own dictionary.

1.3.4. Using Contextual Clues to infer Meaning

Nagy (1988) claims that teaching students how to extract meanings of words from context is an applicable method that should be included in any reading lessons. In addition, context can help students to build their own vocabulary. He adds that very informative context help students to find out the alternative or the opposite of unknown words in the text that are sound

less familiar to them. Thus, teachers should supply the appropriate context in order to enable them infer the meaning of any word.

Sedita (2005) assumes that readers should locate the context clues which help them to infer the meaning of unknown words. These clues are found in the text, and they appear in it in the form of definition, examples, contrast, description, synonyms, or antonyms. These clues enable the students to increase their reading comprehension. Thus, teachers should select the material that provides the appropriate context clues in order to figure out the meaning of unknown words.

1.4. Discourse analysis as Focus in Reading Comprehension

In this component, we are going to focus on the elements of discourse analysis that enable the readers to enhance their reading comprehension. The following elements are also important to be taken into consideration when dealing with any text-types. Throughout this point, we are going to deal with discourse analysis in relation to reading comprehension, and how this entity enables the reader to process the text.

1.4.1. The Concept of Discourse Analysis

The term discourse analysis is found and related in one way or another to different disciplines such as sociolinguistics, psycholinguistics, and so on. Discourse analysis concerns with those components that are resulted from the intersection of these disciplines. In addition, these components tackle many different issues. These latter are concerned with the kind of context that is found in social conversation, the problems of language comprehension in texts, and how language is utilized linguistically for particular communication (Brown & Yule, 1983).

Ennaji and Sadiqui (1994) define discourse analysis from wide perspective. It is, in fact, related to different disciplines. In sociolinguistics, discourse analysis deals with the aspects of the different usages of language that are observed in social context. In psycholinguistics, this approach analyzes the components that are viewed in language comprehension, and the extent to which the reader, in his/her position, has the ability to process any particular text.

1.4.2. Coherence and Cohesion

Murcia and Eliteobshtain (2000) claim that coherence and cohesion are important devices that should be set as parameter when assessing any text. Since, they show whether a particular text is good or bad. These devices allow the reader to interpret the text easily during reading.

Like any discipline, discourse analysis has its underlying elements. They concern mainly with the surface and the deep level of any spoken or written material. The first level relates to the way different units in text are connected. The emphases in the second level relay on the logical relations the constituents in the text. Besides, any particular text is not concerned only with one level, but rather, a combination of the two is necessary for better comprehension (Ennaji & Sadiqui, 1994).

1.4.2.1. Coherence

Murcia and Eliteobshtain (2000) define coherence as the quality of the text that is based on one's background knowledge and own experience, it interrelates between the writer, text, and the reader. Thus, coherence aids the writer to present the text's ideas easily to the reader.

1.4.2.2. Cohesion

Another important element, that facilitates the task of reading any types of texts, is cohesion. This latter is defined as the surface element which connects the text units by different lexical and grammatical devices (Murcia & Eliteobshtain, 2000).

1.4.3. Context

Context is defined by Brown and Yules (1983) as the use of language in particular environment or circumstances. They also claim that any written production should take context into consideration. Since, context show the extent to which a single sentence can be accepted or not. In addition, the work of discourse analysis is to examine how spoken and written language is used as a tool of communication in particular context in order to achieve the gist of the discourse.

Ennaji and Sadiqui (1994) assume that context is the appropriate device that enables the reader, in particular, to figure out the meanings from the text. The interpretation of these meanings can be better inferred if the text is put in its appropriate context.

1.4.4. Second Language Reading Processes

Alderson and Bachman (2000) admit that there are different researches have been done in the area of reading. Particularly, the area that concerns with the way the reader processes the text. Thus, two different approaches are theorized as a dichotomy that describes the reading process.

On the other hand, Hedge (2000) reports that SL reading requires two different processes. In the first, the reader uses the world knowledge to extract the meaning of the text. This is known as top-down approach. In the second process which is termed as bottom-up approach, the reader decodes letters, sounds, words, and other features in the text.

Harmer (2001) admits that the analysis of reading as to the way SL reader processes any given reading materiel differently require the knowledge of both top-down and bottom- up processes. These two approaches depend on the aim of the reader toward the text whether he/she intends to get an overview or rather concentrate on the individual features of that print. That is to say, in the use of top-down approach the readers get the general idea of the text relaying on the appropriate schema knowledge. Since, it allows them to have the right expectation that the readers will find in the text. In bottom-up approach, the readers focus on the individual features such as words, phrases, and the detailed elements that build up the text. These two approaches are listed as follow:

1.4.4.1. Top-down Approach

The readers, in this approach, process the text depending on his/her contribution to it. That contribution, or the knowledge that the readers bring to the text is known as schemata. These latter refer to the stored information in the mind which are activated whenever the readers encounter with new text (Alderson & Bachman, 2000).

Murcia and Eliteobshtain (2000) acknowledge that top-down approach, or as it is termed as knowledge-driven, is a matter of formulating and constructing different hypotheses about the reading material. It is also to consolidate the background knowledge that the reader brings to the text.

1.4.4.2. Bottom-up Approach

In this approach, the reader processes the text starting from decoding the internal linguistic elements that build up the print. Bottom-up, or as it is termed as data-driven, is viewed as a chain of fixed orders of stages start from decoding the text's input until the reader reach its output (Alderson, 2000; Murcia & Eliteobshtain, 2000).

Murcia and Eliteobshtain (2000) declare that these two fundamental approaches have different applications according to the text. That is to say, if the text is simple and familiar to the reader. So, top-down are more appropriate. Whereas, if the text is difficult and cannot interpret by the reader. In this case, the reader should utilize the bottom-up approach.

Conclusion

In this chapter, we have discussed various components that are related to SL reading comprehension. The first component is devoted to the definition and the two types of SL reading comprehension. The second component stresses the importance and the effectiveness of the micro-skills in enhancing the students' reading comprehension. Indeed, these skills as they are presented in this study have the potentiality to improve the readers' comprehension in the English scientific text. The third component deals with the extent to which SL reading is merely an interactive process. In addition to these components, this study is leaned itself to an important approach which is termed as discourse analysis. The purpose behind the inclusion of this approach is to list the cohesive devices that help the SL readers to comprehend any kind of text, to help them interact with the text appropriately at both the surface and the deep levels, and to give them how to consider top-down and bottom-up approaches when they read any text that are either simple or difficult. Another importance is to enable those readers how to relay on the context to infer the different meanings of the text.

1. Introduction

This study is carried out to confirm the research question that tackles the effectiveness of using micro-skills on developing SL reading comprehension in the scientific English text. Therefore, an experiment is conducted to either confirm or refute the suggested research question. In this practical part, we are going to analyze the data that are obtained from the experiment that is directed to the biotechnology students at biology department in Kasdi Merbah University. It is worth to say that the different procedures of this work synchronized with the accomplishment of the theoretical investigation.

1.1. The Method of the Study

To investigate the effectiveness of micro-skills on developing SL reading comprehension in the scientific English text, we use descriptive analysis method in order to describe the different steps through which the experiment is completed, and to analyze both students 'questionnaire and their scores in the two tests.

1.2. Sample under study

The sample of this study includes 15 participants of first year master biotechnology students at Kasdi Merbah Ouargla University. All of them participate in the experiment's steps: need analysis, pre-test, lesson plan, and the post-test step.

2. The description of the experiment

The experiment is undergone through four steps; each step is described as follow:

2.1. Step 01: Administration of the students 'questionnaire

A questionnaire is administered to 15 participants of first year master biotechnology students. All of them answer the questions with great honest and pleasure. The aim behind this questionnaire is to detect the needs of these students (see appendix 01-02).

2.2. Step 02: Administration of the pre-test

In this step, a pre-test is assigned according to the classical method of the ESP English teacher of first year master biotechnology students. The students, in this test, are asked in 40 minutes to answer open-ended questions, to find synonyms and antonyms of words, to formulate words into nouns, adjectives, or verbs. They are asked to put verbs between

brackets in the past tense. In addition, the items in this test are adopted by the majority of ESP English teachers in the biology department at K.M.U. (see appendix 03-05).

2.3. Step 03: The plan of the lesson

After analyzing the students' questionnaire, a lesson is planned to underline the most important skills that these students need to understand a scientific English text. In 40 minutes, the different items in this lesson are explained to these students, and positive feedback is realized at the end of the lesson (see appendix 06-08).

2.4. Step 04: Administration of the post-test

In this step, a test is assigned to the students on the basis of the lesson that is planned to them. The test concentrates on the important items that are necessary to understand a scientific English text. In 30 minutes, students are asked to skim and scan the given text and do the activities that are related to these two skills. They are asked to find the definition of terms that are already known to them, and to fill in the gaps with words in the text. In the last activity, students are asked to pick out from the text synonyms and antonyms of words according to the context, to give the reference of pronouns, and to substitute a word by another one in a sentence (see appendix 09-11).

3. Data and scoring analysis's procedures

3.1. The analysis of the students' questionnaire

In this step, we analyze the students' questionnaire (see appendix 01-02). The aim of this latter is to diagnose the exact needs of the biotechnology students in reading and understanding a scientific English text. Another aim is to know the required micro-skills that are needed to read any scientific text. These skills are:(01) skimming to get the general idea of the text(02) scanning to pick out particular information(03) developing vocabulary relaying on the text, and (04) the ability to use contextual clues to infer meaning of unknown words or implicit passage. The technique of percentage (%) is adopted to analyze these data:

Question One	Responses	Percentage (%)
YES	15	100%
NO	00	00%

1. **Table 01**: *The student interest in their domain*

This table shows that (100%) of the biotechnology students are interested in their domain. This indicates that these students are able to activate their schemata knowledge when interact with any text that goes with their subject area.

Question Two	Responses	Percentage (%)
YES	09	60%
NO	06	40%

2. **Table 02:** *Reading in English*

According to the results shown above, the majority of students (60%) like to read in English and (40%) of them believe that reading in English is just a matter of reading irrelevant material. The present study aims to motivate these students to read more texts that are related to their domain.

Question Three	Responses	Percentage (%)
YES	13	86.66%
NO	02	13.33%

3. **Table 03:** *Reading a scientific English text*

Through this table, (86.66%) of the respondents are interested to read texts that have a scientific nature, only (13.33%) of them do not like to read this type of texts, since they are difficult to be read and are loaded of unfamiliar items.

Question Four	Responses	Percentage (%)
YES	08	53.33%
NO	07	46.66%

4. **Table Four:** *the use of the actual method to comprehend that text*

According to this table, (53.33%) of the participants find the actual method that is utilized by the ESP teacher is working with them, whereas (46.66%) of the participants find a difficulty in understanding these type of text, because the actual method does not serve them to get a general comprehension of these texts.

Question Five		Responses	Percentage (%)
1.	Read the technical terms that are known to me	05	33.33%
2.	Read that text many time	08	53.33%
3.	No skill is used	00	00%
4.	Choice (A)(B)	02	13.33%

5. **Table 05**: *the use of skills to increase reading comprehension*

According to the results shown above, (33.33%) of the participants read only the technical terms that are familiar with. Whereas, the majority of them (53.33%) used to read the text many time to increase their comprehension, only (13.33%) of the respondents read both the text many time and the technical terms that are accustomed with them. However, (00%) indicate that all participants use whatever skills in order to increase their reading comprehension.

Question Six		Responses	Percentage (%)
1.	Use the dictionary if it is available	04	26.66%
2.	Just make guesses	02	13.33%
3.	Decode it according to the text's context	06	40%
4.	Choice(B)(C)	03	20%

6. **Table 06:** *the use of context to decode unfamiliar words*

It is noted that (26.66%) of the participants use their dictionary as an aid to infer the meaning of the difficult words. (13.33%) opted for the second choice and this due to the fact that they do not find dictionaries available in their hand most of the time. Thus, they depend on their predictions. (40%) indicates that the majority of the respondents relay on the context to figure out the meaning of unfamiliar words in the text. Moreover, (20%) of the participants make guesses and use the context to get the correct meaning of unknown words.

Question Seven		Responses	Percentage (%)
1.	Interpret the individual items of the text	03	20%
2.	Translate the text into Arabic or French	03	20%
3.	Understand the gist of the text according to the context	09	60%

7. **Table 07**: *the use of context to recognize the general meaning of an implicit passage*

This table shows that (20%) of the respondents admit that they recognize the general meaning of an implicit passage by either interpret the individual items or translate that text into the language that is used by the them. Whereas, (60%) which refer to the majority of the respondents who use the context to decipher the meaning of implicit excerpt taken from the main text.

3.2. The comparison between the two tests' scores:

The following table shows the scores of the students that are obtained from both the pre-test and the post-test:

The students' number	The pre-test marks	The post-test marks
01	9.25	16
02	15.5	13.5
03	6.75	16.5
04	11.25	12.5
05	14	15
06	14.75	19.5
07	18.5	15.5
08	11	13
09	14.5	19.5
10	10	14.5
11	13.5	14
12	10.5	12
13	09	12
14	06	14
15	7.75	10

Table 08: *the student scores in the two tests*

The analysis of the table shows that ($\overline{X}$) which refers to the calculation of the mean in the pre-test is 11.48, and($\overline{X}$) which refers to the calculation of the mean in the post-test is 14.5. This indicates that students in the second test do understand the text better than they understand it in the first test. The obvious difference between the students' scores in the two tests indicate that students can understand the scientific text if they use the micro-skills, that are presented in this study, to increase their SL reading comprehension.

4. Conclusion:

It is the aim of this part to find out different skills that are applicable to increase SL reading comprehension in the scientific English texts. In addition to that, this part aims to give practical guidelines which concerns the effectiveness of these micro-skills on developing SL reading comprehension in any text not only the scientific one. Unfortunately it is noticed that the participants do not like to read the texts that does not go with their subject area. Also, these participants do not have the motivation that stimulates them to read texts in English. However, the many biology books in the world are written in the English language. Thus, this research aims to motivate the students in all domains to read the different types of scientific English texts. Since, this latter will enrich the participation in the classroom. The following recommendations should take into consideration whenever the teachers intend to design any reading lesson.

General Conclusion

In this study, we have developed two theoretical chapters and practical one. These latter are summarized in three main points:

1. In the first chapter, English for Academic Purposes is considered as one of the disciplines that encompasses different sub-divisions. One of them English for science and technology. Within this component, we have underlined two elements; the first element is to indentify scientific English as an important constituent in EST. the second element is that of scientific text. In this point, we have focused on the textures that are found in this type of text. They are as follow: reference, substitution, rheme, and theme. These cohesive devices are important, and should be developed and highlighted in scientific English text. Since they facilitate the task of understanding the internal structure of scientific English text. For instance, one of the common features in the scientific English text is to give pre-determined information that is already known to the reader, and then the writer move on to give the new information that is not predicted by the reader. This also can be applied when someone wants to reveals the result of an experiment. He/she has to present the old information concerning this experiment. Then, he/she is going to give the new piece of information. The same story with reference and substitution. And this will be recognized when the SL readers know how to substitute a linguistic unit or to underline the referent words in text. This will consume the time of reading the text many times. So, stressing on these cohesive devices in the scientific texts is extremely important to increase the readers' reading comprehension.

2. In the second chapter, Second Language reading comprehension is developed at three main dimensions; the first tackles the definition of this concept and its two different types: reading intensively and extensively. Accordingly, these two types facilitate the task of the teachers in selecting the suitable materials to their classroom. The second dimension is considered as the basis of this study. It deals with the main micro-skills that are necessary to increase SL reading comprehension. The third dimension is not less importance than the previous one. In that, it shows the extent to which discourse analysis can be a vital contributor to the understanding of reading in the target text particularly the one that is scientific-based. The cohesive devices that are highlighted in this position relate to the way the linguistic unites in text are connected and how that text is considered to be classified as meaningful

genre. These cohesive devices are as follow: cohesion, coherence, and context. In this respective, both top-down and bottom-up processes are developed as facilitator tools with which the reader can adapt to increase SL reading comprehension in the scientific English text.

3. In the practical chapter, we attempt to put the previous ideas into practice. This is done through four steps. In the first step, we construct a questionnaire that aims to specify the needs of the participants as to the skills that they usually utilize to comprehend a scientific text, and the effectiveness of the method used by the teacher to increase SL reading comprehension in that text-type. In the second step, we administer a pre-test to the participants in order to see whether the teacher's method is applicable or not. That is to say, the items that are focused on in this test can really enhance the students' general understanding. The scores that are resulted from the pre-test displays that the majority of students do not benefit from the method of the teacher. In the following step, we attempt to plan a lesson that highlights the most important skills that sound useful to the biotechnology participants, and applicable to increase the reading comprehension of the scientific text. Moreover, the items in the lesson are extracted from both different books of reading skills and the analysis of the students' questionnaire. In the last step, a post-test is administered according to the elements that are developed in the lesson. Consequently, the post-test' scores indicate that participants do really understand the scientific text depending on these micro-skills.

To conclude, the outcomes of this research show that the students in all domains in general and the biotechnology students in particular do not like to read any text-type that does not reflect their needs or their interests. Since this factor will help students to read different kinds of reading materials. By including the micro-skills, SL reading comprehension will be easily achieved in the scientific English texts.

5. Pedagogical recommendation

To get some direct application of our previous discussions, we attempt to suggest the following recommendations that are useful for both ESP teachers in general and non-specialist students in particular:

- ESP teachers should make effort to determine the needs of their students when designing any reading lesson.
- ESP teachers should select the reading material carefully so that students will be motivated to read these texts in particular and increase their reading comprehension.
- ESP teachers should give a great attention to the so- called discourse analysis approach, since it can offer the atmosphere in which the teacher will able to interact effectively with the student in a suitable classroom context using an appropriate text which is considered as a communication instrument that connect between these two elements.
- The students, in their position, have to stimulate themselves to read any type of text even though this latter is not properly selected by the instructor.
- The non-specialists students should be aware of the way they use the micro-skills in any text appropriately.
- Students should increase their reading skill, since this will help them to build their schemata and make them knowledgeable in their subject area.
- Both teachers and students should make the reading course more active, not just a matter of reading a text and receiving set of information that are already available in the given text. That is to say, teachers should make these sessions critical-based. That is, they have to stop at some points in the text, and make a kind of controversy about them.
- Teachers should develop different activities to make the reading session an enjoyable opportunity where students can express themselves through, for example, audio-visual, role-play, or group discussion activities.
- Teachers should give great importance to the inclusion of reading skill in the syllabus that is directed to the students at the beginning stage of the learning flow. In another words, the focus of teachers in this stage is to make students read any text either intensively or extensively.

- Many institutions around the world motivate students to read by creating books that are interests, pleasurable, and easy to be obtained. In addition to that, students try to develop themselves by reading extensively. These two facts entail that both teachers and students do their effort to make the reading sessions more active, and hence, there will be a competent discussion about the different issues that may discussed accidently in the classroom.
- The library systems in the university should allow the students to get more opportunities in the achievement of books. This procedure will motivate students to read when and whatever they want to.

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People's Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

Kasdi Merbah University-Ouargla-

The Class Level: 1st Master Biotechnology Vegetal

Students' questionnaire

Dear students, you are kindly invited to answer honestly the following questions. My aim is to specify your needs about the reading skills that sound useful in reading a scientific text. So, your responses will help me to proceed further in my master research. Please tick (√) in the appropriate box. Thank you in advance.

1. Are you interested in your domain?

Yes ☐

No ☐

2. Do you like to read in English?

Yes ☐

No ☐

3. Are you interested in reading scientific English text?

Yes ☐

No ☐

4. Is the actual method useful to you to comprehend that text?

Yes ☐

No ☐

5. What is the skill you utilize to increase your reading comprehension?
    1. Read the technical terms that are known to y
    2. Read that text many tim
    3. No skill is use
6. When you read a difficult word (whether it is new technical word or familiar one in the text). How you decode it?
    1. Use the dictionary if it is av ble
    2. Just make gu es
    3. Decode it according to the text's context
7. How you recognize the general meaning of the passage if it is unclear?
    1. Interpret the individual items of the text
    2. Translate the text into Arabic or E ch
    3. Understand the gist of the text according to the text

Thank you

People's Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

Kasdi Merbah University-Ouargla-

The Class Level: 1st Master Biotechnology Vegetal

The Test's Time: 40 minutes **The Student's Full Name: ……**

The Pre-Test:

The Text:

Every cell of a plant contains typically its genetic material and information. That is to say, every cell has the potentiality to produce an entire plant. We say that cells are "titopotents". The vegetable cells present particularly an important characteristic: once they are put in a tube under cultural condition that resembles the natural one, it can favor the expression of" titopotence". The capacity of vegetable cells in producing plant has various possible utilizations. In addition to generate entire plants, every vegetable cell can express the characteristics of a plant: "for example, some substances are produced by the entire plants can be synthesized by cells of that plant that are culturally processed". Thus, they function as chemical factories. This is important because the specific element, such as alcaloides, which protects the plants against disease and predators, can equally kill the organisms' pathogens that attack the human being; some can destroy even the cancerous cell.

For example, the Madagascar periwinkle "le pervenche de Madagascar" produces two anticancerous alcaloides, vinblastine, and vincristine. These alcaloides do not present only 0, 0005% weight of the plant. When we use the plant as source of vinblastine, 1 million US dollars are necessary to obtain 1 kilogramme of product. Whereas the vincristine, there must be 3, 5 millions US dollars. Under these conditions, the treatment of the disease cost more than 10 000 dollars. In addition, these molecules are so complex to be synthesized artificially.

The scientists are searching to produce these alcaloides starting from the cell cultures, but the price of the cost does not significantly decrease. However, some techniques are promising. A method consists in stimulating the production of these alcaloides by adding the

hormone to cultures. The scientists research to produce copies of genes stimulating that production.

[Murray Nabors, Biologie Végétale: structures, fonctionnement, écologie et biotechnologies. P: 39].

NB: the word "cultural" refer to the growing of plants or the keeping of certain types of animals.

Activity one:

1. **What does cell contain?**

……

2. **What is the capacity of vegetable cell?**

……

3. **What can alcaloides do?**

……

4. **What is the method that is searched by the scientists to stimulate the production of alcaloides?**

……

Activity two:

Find in the text the synonyms of the following words:

Consist=…….. Uses=…….. Produce=……. Whole=……

Find in the text the antonyms of the following words:

Impossible≠…… General≠…….Unnecessary≠……. Simple≠…….

<u>Activity Three</u>: complete the following table with the appropriate item:

Nouns	**Adjectives**	**Verbs**
……	**……**	**Inform**
……	**Productive**	**……**
Function	**……**	**……**
……	**Stimulate**	**……..**

<u>Activity Four</u>: Put the following verbs between brackets in the past tense:

1. The vegetable cells (present) an important characteristic.

……

2. The capacity of vegetable cells (has) various utilizations.

……

3. Every vegetable cell (express) the characteristics of the plant.

……

Thank you

People's Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

Kasdi Merbah University-Ouargla-

The Lesson Plan:

Time: 40 minutes

The objective of the lesson: is to make the students aware of the micro-reading skills, and to increase the student's reading comprehension in the scientific text.

The following micro-reading skills are useful to comprehend a scientific text :(5 minutes)

1. Skimming and scanning skills.
2. Developing the text's vocabulary.
3. Using context to infer the meaning of a word or an implicit passage.

Item one: skimming and scanning skills :(10 minutes)

- **Skimming:** is to remove your eyes quickly over a surface of the text. In reading, to skim means to read the text quickly so that you get what you want from the text, for example, to know how it is organized.

For example, if you are asked to skim the following excerpt, taken from an encyclopedia, in order to count the number of the word "cell":

"Chemistry, in a sense, dictates all of biology. In this chapter, therefore, we briefly survey the chemistry of the living **cell**. We will meet the molecules from which **cells** are made and examine their structures, their shapes, and their chemical properties. These molecules determine the size, structure, and function of living **cells**. By understanding how these molecules interact, we can begin to see how **cells** exploit the laws of chemistry and physics to stay alive".

- **Scanning:** is to locate and examine carefully specific information in the text. By doing so, the readers do not often follow the linearity of the passage.

For example, if you are asked to scan the passive sentences in a text. You will not find yourself looking for these forms without giving an importance to the organization of the text.

"……flowers are the reproductive structures of angiosperms; they lead to the formulation of seeds and fruits. They are involved in sexual reproduction in higher plants. Flower is composed of four basic floral organs: sepals, petals, stamens, and pistils. ……The female gametophytes are egg-containing structures called embryo sacs. These latter develop inside structures called ovules, which are enclosed by the ovaries. Receptacle is the stem apex to which flower is attached".

Item two: vocabulary development :(05 minutes)

- **Developing the text vocabulary:**

The knowledge of specific-text vocabulary is one of the important components that help us to build our background knowledge, express our ideas, and communicate effectively with the text.

Students who have different set of vocabularies read any text better than students with limited vocabularies. In addition to that, the background knowledge helps the reader to pick out the vocabulary, and thereby, to comprehend the text easily.

For example, if you are asked to read the following short cut passage entitled "*chemical bonds*" that is related to cell components:

"Matter is made of combination of elements-substances such as *hydrogen* or *carbon* that cannot be broken down or converted into other *substances* by *chemical* means. The smallest particle of an element that still retains its distinctive chemical properties is *an atom*. The characteristic of substances other than pure elements-including the materials from which *living cells* are made-depend on which *atoms* they contain, and the way these atoms are linked together in groups to form *molecules.*

A non-scientific reader cannot predict the meaning of this vocabulary (words in italics) because he/she does not have previous scientific background knowledge".

Item three: contextual meaning :(10 minutes)

- **Using context to infer meaning of a word or an implicit passage:**

The so-called context refers to the part of a text or statements that surround a particular word or passage and determine its meaning. It is the circumstances, or the setting in which an event occurs. Also, the word context refer to the words in the text that aid you to understand the general idea of the text or it helps you to know the meaning of a word that is unfamiliar to you.

For example in the following passage:"……flower is defined as the central part of plants or trees from which seeds or fruits grow. It encompasses of different **layers**. This latter are termed scientifically as **floral organs**. They are as follow: **sepals**, **petals**, **stamens**, **and pistils**".

If you read the bolded words according to the context of this passage, we can interpret them as the components of the flower.

So, context is of two kinds: the first kind relate to the surrounding setting in which the text take place. The second connect to the words in the text that assist the reader to predict the meaning of any word.

The knowledge of the referent and substituted words :(10 minutes)

The word reference: refers to set of linguistic units that refer to something else in the text. For example, in the following sentence:

- Every cell of **a plant** contains typically the genetic material and information of **the plant**. By doing reference, we simply say:
- Every cell of a plant contains typically **its** genetic material and information.

The word substitution refers to the linguistic units that are substituted and replaced by another items. For example, in the following sentence:

- Once the vegetable cell are put in a tube under cultural **condition** that resembles natural **condition**. By doing substitution, we simply say:
- Once the vegetable cell are put in a tube under cultural **condition** that resembles natural **one.**

Thank you

People's Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

Kasdi Merbah University-Ouargla-

The Class Level: 1st Master Biotechnology Vegetal

The Test's Time: 30 minutes

The Student's Full Name: ……

The Post-Test:

The Text:

Every cell of a plant contains typically its genetic material and information. That is to say, every cell has the potentiality to produce an entire plant. We say that cells are "titopotents". The vegetable cells present particularly an important characteristic: once they are put in a tube under cultural condition that resembles the natural one, it can favor the expression of" titopotence". The capacity of vegetable cells in producing plant has various possible utilizations. In addition to generate entire plants, every vegetable cell can express the characteristics of a plant: "for example, some substances are produced by the entire plants can be synthesized by cells of that plant that are culturally processed". Thus, they function as chemical factories. This is important because the specific element, such as alcaloides, which protects the plants against disease and predators, can equally kill the organisms' pathogens that attack the human being; some can destroy even the cancerous cell.

For example, the Madagascar periwinkle "le pervenche de Madagascar" produces two anticancerous alcaloides, vinblastine, and vincristine. These alcaloides ***do not*** present only 0, 0005% weight of the plant. When we use the plant as source of vinblastine, 1 million US dollars are ***necessary*** to obtain 1 kilogramme of product. Whereas the vincristine, there must be 3, 5 millions US dollars. Under these conditions, the treatment of the disease cost more than 10 000 dollars. In addition, these molecules are so complex to be synthesized artificially.

The scientists are searching to produce these alcaloides starting from the cell cultures, but the price of the cost does not significantly ***decrease***. However, some techniques are

promising. A method consists in stimulating the production of these alcaloides by adding the hormone to cultures. The scientists research to produce copies of genes stimulating that production.

[Murray Nabors, Biologie Végétale: structures, fonctionnement, écologie et biotechnologies. P: 39]

NB: the word "cultural" refer to the growing of plants or the keeping of certain types of animals.

Activity One: Skim and Scan the Text, and put (x) next to the statement that you think is the appropriate one:

1. **Read the text, and select the statement that you think is the appropriate title to the text:**
   - **A.** The components of the pla
   - **B.** The function of the vegetable ce
   - **C.** The cultural utilization of the vegetable ce
2. **Scan the text carefully, and do the following:**

A. The topic sentence of the third paragraph:

…….

B. **Put the following sentences in the right order as they appear in the text (by numbering them):**

- The scientists are searching to produce these alcaloides starting from the cell cultures, but the price of the cost does not decreased in significan anner
- These alcaloides do not present only 0, 0005% weight o e plant
- This is important because the specific element, such as alcaloides, which protects the plants from disease a predators.

C. **In which paragraph is it mentioned the method of producing more alcaloides:**

1. The first paragra
2. The second paragra
3. The third paragrap

<u>Activity two</u>: Select the definition that goes with the following underlined items:

A. **<u>Biology</u> is defined as:**

1. The science of the relationship between organisms and their environment
2. The science of life and living organisms, including their structure, function, and growth
3. The science of treating disease and other damage to the body or the mind

B. **<u>A biological culture</u> is defined as:**

1. The promotion of the plant's growth
2. The systems that rules the people's way of leading
3. The science that deals with the biochemical nature and activity of enzymes

<u>C.</u> Read the following passage. Then fill in the gaps with the appropriate words from the text:

1. In biology, the smallest living part of a plant is named as …….. .
2. The specific element such as ……..can protect the plants against any enemy.
3. …….searches to stimulate the production of some useful drugs.

<u>Activity three:</u> Read the text again, and answer the following questions:

A. **Find the <u>underlined words</u> in the text. Then, give the synonyms of the following words according to the context:**

The capacity=…….. Different=…… Utilize=……..

B. **Find the words *in italics* in the text. Then, give the opposite of the following words according to the context:**

All ≠……. Do≠…… Increase≠…… unnecessary≠……..

C. **Give the referent words to the following pronouns in the text:**

Its =……..

They=……..

D. **Substitute the underlined word in the following sentence:**

The vegetable cell puts in a tube under cultural condition that resembles the natural **<u>condition</u>**.

……..

Thank You

Abstract

The present study, which consists of three chapters, is an attempt to shed light on one of the important situation that is found in the context of teaching English to the non-specialists learners. This particular situation concerns the integration of some micro-skills in the scientific English to enhance the reading comprehension of SL readers. It is also try to stimulate ESP teachers to find out different strategies that may change the attitude of learners toward the reading lessons in the English language. In the first two chapters of this work, we indentify the underlying components that concern the area of EAP and EST. Then, we undertake the constituents of SL reading comprehension, taking into consideration the incorporation of discourse analysis approach as a focus in reading comprehension. The third chapter describes the different procedures of the experiment which is conducted to detect the effectiveness of the micro-skills on developing SL reading comprehension in the scientific English texts. The outcomes of the experiment are displayed in the conclusion of this study.

Key Words: SL Reading Comprehension, Micro-Skills, Scientific Text, Discourse Analysis Approach.

ملخص

الدراسة التي بين أيدينا هي محاولة لمعالجة واحدة من بين الوضعيات الموجودة في البيئة التعليمية للغة الانجليزية للطلبة الغير المتخصصين في هذه اللغة. تعنى هذه الوضعية بشكل خاص بالإدخال بعض مهارات القراءة في النص العلمي الانجليزي. تحاول هذه الدراسة أيضا لتحفيز الأساتذة لإيجاد مختلف الاستراتجيات التي يمكن من خلالها ترغيب و تغيير آراء الطلاب نحو دروس القراءة باللغة الانجليزية. في الفصلين الأولين لهذه الدراسة قمنا بتقديم الأجزاء الأساسية المتعلقة بمجالي اللغة الانجليزية الأكاديمية و العلمية من جهة و من جهة أخرى فقمنا بإدراج مختلف الأقسام التي تخص القراءة باللغة الانجليزية أخدين بعين الاعتبار التحليل الخطابي و فهم القراءة للنصوص العلمية. أما في الفصل الثالث قمنا بإجراء تجربة و التي نهدف من خلالها الى إثبات إشكالية الدراسة بإضافة إلى ذلك قمنا بعرض نتائج هذه التجربة.

الكلمات المفتاحية القراءة باللغة الانجليزية استراتجيات القراءة النص العلمي التحليل الخطابي

Thank you for reading my research