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READING STRATEGIES AND TOOLS FOR DEVELOPING READING SKILLS AT UNIVERSITY WITH LOW ENGLISH LEVEL STUDENTS

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Reading strategies and tools for developing reading skills at university with low English level students.

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1. Introduction

Reading at university not only implies understanding the language, but also understanding and using the content transmitted by the text, and making use of that content for a real purpose.

Reading has been viewed in different ways throughout the years. Models explaining the reading process have emerged in different periods, and thus, they are influenced by different views on learning, that is, the models that emerged during the behaviorist period place a strong emphasis on the printed stimuli, and on the contrary, those models which emerged during the cognitive psychology time highlight the importance of memory and attention. Reading was defined in many ways, considering different elements, such as the reader as an active or passive participant, or the focus being placed on the background knowledge the reader brings to the text, or on the words, phrases and sentences written on the text. Discussions about whether the reader uses bottom-up skills or top-down ones still continue to exist. The approach to be taken into consideration for the design of this course is the Interactive approach to reading suggested by Widdowson (1979). An Interactive approach to reading means that a reader makes use of both bottom-up and top-down processing strategies when handling a text, and for this, the reader needs to have, as many authors have implied, a sound knowledge of the language, in structure and vocabulary. But, what happens when they do not possess this knowledge? How do we go about when the students we have in our classes have a very basic knowledge of the language but still need to comprehend research articles for their academic life and post-graduate studies?

This paper will include a detailed study of the characteristics of reading in an ESP context, EAP to be more specific, where students bring a very basic knowledge of the English language, and are expected to be able to read authentic texts for other subjects in their course of studies, and for conducting research on topics of their interest. The main concepts developed in the theoretical framework will include those related to reading for specific purposes, reading strategies, vocabulary learning and material design, all aspects which play a key role in the teaching of reading at university level.

Although reading instruction emphasizes the importance of implementing reading activities for the sake of reading, leaving the teaching of language itself aside, the students who attend this course have a really basic level of English and the teaching of the language, or the most salient academic features of it, needs to be taken into consideration

if we are to help these students achieve their objective: understand authentic academic texts. Therefore, when thinking about the design of a reading course in this particular context the following features have to be taken into account: language characteristics, vocabulary –technical and sub-technical-, reading strategies, and motivation to continue working.

This project can be included under the umbrella of action research on the topic of teaching reading at university and material design. Its main aim is to analyze my students' reading strategies in order to develop goal-oriented material that will aid them in the acquisition of reading skills and improve their understanding of the English language by also focusing on the most salient grammatical and structural features of academic English. The role of vocabulary and how to help students build it up will be dealt with as well.

The research project is divided into seven chapters. After this introduction – CHAPTER I we find CHAPTER II, which is an explanation of the academic and personal interest on the topic chosen; in CHAPTER III the objectives of the present study are described. Once the objectives have been presented, the next section – CHAPTER IV- provides a detailed insight into the theoretical background to the research topic, including all the concepts and ideas relevant to the research objectives. Since this project involves different variables, there will be several concepts described which share a common thread; in CHAPTER V the methodology is presented, explaining the type of research that has been carried out and the rationale behind it. Also, it includes an explanation of the creative process and the group for which the material to be designed is aimed at, and the approach to material design adopted. Moreover, this section describes the data collection instruments. It presents the analysis of the data and the literature and its implications for material design, that is, by using the information obtained through the questionnaires and from the literature reviews, the material is designed. Examples of the designed tasks and accompanying explanations are also included here. CHAPTER VI objectively analyses the results. The last section, CHAPTER VII, develops a conclusion by answering the questions suggested by the present action research project and it also includes some possible lines for future research.

2. Justifying academic and personal interest of the topic

Dudley-Evans and St. John (1998) identify five key roles for the ESP practitioner: teacher, course designer and materials provider, collaborator, researcher and evaluator. The ESP teacher or “practitioner” has to fulfill many roles and they are different from the roles a General English teacher has. First, an ESP practitioner has to be a “researcher” on the field of the discipline he/she teaches. The teacher interchanges information with other teachers and with students, as regards the content of that specific discipline. Collaboration and cooperation among teachers and students is very important. Another difference is that the ESP teacher has to design the course according to specific needs and to provide the material; there are no textbooks ready to fit the course to be taught. At the same time, she has to become an evaluator, not only of the course but also of the material she had previously designed for the course. A lot of work is to be done outside the classroom and what the teacher designs demands constant revision. It was this idea of being an ESP teacher that embarked me on this action research project

Teaching reading comprehension at university to students who have a low level of English is a very complex task. One of the reasons for this is that reading seems to be a problem even in the students’ mother tongue. Teachers from other disciplines and subjects frequently complain about the low level of reading proficiency students bring from secondary school. As teachers we cannot turn a blind eye on this problem or put the blame on other levels of education, such as secondary school. On the contrary, we must work on this problem and do our best to give the students the tools that will enable them to get the best from textbooks and other material, either in their L1 or in the target language. The main aim of this project is to get a deeper understanding of the reading process that takes place when reading in English when students have a really basic knowledge of the language so as to help them tackle the texts more fluently and easily, and help them feel they can read and understand a text without translating it into their mother tongue but selecting and choosing where to focus and what to pay attention to.

By achieving this aim, I expect to be able to design tasks and activities according to the findings this research brings to light, because, as I mentioned above, there are no ready-made materials to be used with these courses, so as an ESP practitioner, I have to be able to identify the students’ difficulties and needs in order to design the material which will best suit them.

Many theorists have developed ideas and concepts about reading strategies that are employed while reading, but none of them really address the issue of having to face the challenge of reading non-graded academic texts when students have a really basic knowledge of the L2. This is another reason why I wanted to do research on this area. Even though students may be aware of the existence of reading strategies, they tend to panic at the sight of an authentic 15-page-long research article and they even forget about using the previous knowledge on the topic to help them understand when they read. They feel English is another world, one which will never be conquered if they do not have the Google translator tool at hand.

3. Objectives

The main aim of the project is to investigate different reading skills for tackling academic texts at university level by carrying out theoretical research and by providing students with a questionnaire on reading strategies. Then, tasks and activities will be designed to aid low-English-level students in the understanding of discipline-specific texts. Students will be given a questionnaire at the end of the course to see if strategies, besides translating everything into L1, are eventually employed and to see which are the most frequently used so as to develop activities which foster the use of them and of other strategies as well.

Specific aims of the study:

- To carry out a survey in order to find out about the low-English-level students' preference as regards reading strategies after a year of instruction on the availability of reading strategies besides the use of the dictionary or the translating tool.
- To use the information drawn from the survey to design material to foster the use of reading strategies
- To help students acquire a more profound knowledge of academic English
- To incorporate the teaching of vocabulary using a more lexical approach so as to help students read more fluently
- To use all the information taken from the collected data, from the literature review and the end-of-year questionnaires, so as to design appropriate material for a specific group of students

The following research questions are taken into account in the development of the present project:

- How can the teaching of reading strategies in L2 be mixed with the teaching of the L2 itself when students have a low level of English?
- How can the material be designed so as to give the students practice on the development of reading strategies?
- How can students build up their vocabulary so as to be able to read fluently and make sense of what they read?

In short, the information taken from the survey and the literature review is expected to serve as the main source for the development of material to be used with low English level students who are interested in taking the reading course at university.

4. Theoretical background

4.1. ESP

Through history, different authors have defined English for Specific Purposes (ESP) in different ways. Hutchinson and Waters (1987, as cited in Dudley Evans and St Johns) see ESP as an approach based on the question *Why does this learner need to learn a foreign language?* The reasons for studying English will vary from study purposes, which will be the starting points that determine the language to be taught. Strevens (1988) distinguished between absolute and variable characteristics for ESP. The absolute characteristics are that ESP consists of teaching that:

- Is designed to meet specified needs of the learner
- Is related in content to particular disciplines
- Is centred on language appropriate to those activities in syntax, lexis, discourse, semantics, and so on, and analysis of the discourse
- Is contrast with General English

The variable characteristics are:

- May be restricted as to the learning skills to be learned
- May not be taught according to any pre-ordained methodology

(Streven 1998, as cited in Dudley-Evans & St. John)

Robinson (1991) also includes in her definition the idea of ESP course being goal-directed and needing to be based on a needs analysis. She adds that these courses are generally limited in time, are designed for adults and are for homogeneous students, according to the discipline they are involved in.

By analyzing all these definitions provided by the above mentioned authors, Dudley-Evans and St. John propose a definition for ESP which seems to encompass all the features present in the teaching situation depicted in the present work. They point out that in their definition of ESP there are two important aspects to highlight: that ESP has its own methodology and that language should be included as a defining feature of ESP. The full definition is included in the list of absolute and variable characteristics these authors suggest, which are similar, but they also differ, to the ones suggested by Stevens.

Absolute characteristics:

- *ESP is designed to meet specific needs of the learner*
- *ESP makes use of the underlying methodology and activities of the discipline it serves*
- *ESP is centred on the language (grammar, lexis, register), skills, discourse and genres appropriate to these disciplines*

Variable characteristics:

- *ESP may be related to or designed for specific disciplines*
- *ESP may use, in specific teaching situations, a different methodology from that of General English;*
- *ESP is likely to be designed for adult learners, either at a tertiary level institution or in a professional work situation. It could, however, be used for learners at secondary school level;*
- *ESP is generally designed for intermediate or advanced students. Most ESP courses assume basic knowledge of the language system, but it can be used with beginners.*

Dudley-Evans & St John (1998), pp4-5

The teaching situation that is the focus of the present project coincides in every aspect described by these variables. To begin with, the whole course is based on the need students have to understand discipline-specific texts, so the language items and structures that they are presented with, together with the skills, discourse and genres, are closely linked to this need. The course is designed for a specific discipline, in this case, biology studies, it makes use of a different methodology from the one General English uses, since the class is delivered in Spanish, focuses only on the receptive skill of reading, and it makes use of authentic material. Furthermore, it is designed for adult learners at university and it is aimed at beginners, even though these authors suggest that ESP courses are generally designed for intermediate to advanced learners, they also claim that it can be used with low English-level students

There are many categories within the field of ESP; one of them is English for Academic Purposes (EAP). This term refers to any English teaching that relates to a study purpose. As described by Dudley Evans & St John (1998), there are many situations in which EAP can be taught. The one we are focusing on, which is our present situation, is that of courses taught in the students' mother tongue, and English being included on the timetable, as another subject or "Requisito de lectura", which implies that English is not even a compulsory subject in their syllabus. Students are free to choose to enroll in the course, and the ones who take this course are students who need to acquire the skills to be able to read and understand research articles related to their discipline.

It is of major importance that the role of the ESP teacher is defined, since it differs greatly with that of the GE teacher. Dudley-Evans and St John (1998) identify 5 key roles for the ESP teacher, which are really important to be taken into account since they place the teaching of ESP on a different position to that of a General English course teacher, and which is one of the reasons for the action research to be undertaken. They believe the ESP practitioner is a teacher who works on very specific content areas, who needs to be very flexible when changes occur, who will need to negotiate with her students, and who will not be the only carrier of knowledge. More often than not, the students become the teachers, for example, when explaining concepts that are too specific. Biology students are all the time defining concepts such as the ones provided by the area of ecology or insect biology, etc. The ESP teacher will also be the one designing their own material because there are no coursebooks available for the specific courses they have to teach, so they will also become course and material designers. This aspect makes the ESP

teacher a researcher as well, not only does an ESP teacher carry out research on the discipline she has to immerse herself on, but also on the way this specific course can be organized and which material it can contain. The steps that have to be taken as regards material design will be dealt with later. The role of collaborator is also present in an ESP teacher when she works together with other teachers of discipline specific subjects, for example when trying to relate the reading component of the course to the content of other subject programs. Teachers from other subjects may suggest possible texts or content areas, according to what they are working on. This requires the teachers to meet from time to time, to review the material together, and to help one another. Finally, the ESP teacher is also an evaluator not only of the students, but also of the material and the course she has designed. Students can be asked to answer questionnaires at the end of the year, giving their opinions about the material they have worked with, the different areas of the course and possible changes they may make. This is valuable information for the teacher.

4.2. Reading

Research conducted over the past three decades has given us a complete account of the ways in which reading could be described. Grabe (2002) presents a very clear summary of some of the most important models of reading, by dividing them into three broad categories: bottom-up models, top-down models and interactive models. In bottom-up models, which were the dominant and traditional ways of analyzing a text in the past, the reader is seen as a passive agent who uses strategies to decode the textual elements printed on the text: letters, words, phrases, sentences. Meaning is built from the smallest textual units, thus solely derived from the printed stimuli. The main problem with bottom-up strategies is that the reader places importance on individual parts of the written text rather than seeing it as a whole. As Samuels and Kamil (1988) state, these models attempted to describe observable events, such as words and printed stimuli, because the emphasis was on behaviorism.

Top-down models, on the other hand, assume that reading is mainly driven by the reader's aims and expectations. The reader makes predictions and hypothesis about the content of the text and then he attempts to check whether those predictions were right, by looking for the most likely places in the text to find useful information. The reader's background knowledge is of crucial importance in top-down processing.

The last “metaphorical” model Grabe and Stoller(2002)review is the *Interactive model*. They suggest that ‘one can take useful ideas from a bottom-up perspective and combine them with key ideas from a top-down view’ (Grabe and Stoller, 2002, p 32) In this sense, we are using not only the printed stimuli but we are also making use of other cues such as background knowledge. However, they add, ‘this combination leads to a self-contradictory model’ (op.cit p 33) and a modified interactive model is needed. McCarthy (1991:168, as cited in Harris & Ball n.d.) argues that:

The best reading materials encourage an engagement with larger textual forms (for example through problem-solving exercises at a whole-text level) but do not neglect the role of individual words, phrases and grammatical devices in guiding the reader around the text.

Widdowson (1979) proposed an *Interactive model*, which combines textual information with the information the reader brings to the text. He states that the reader reacts to the text, and he assigns the meaning by interacting actively with the text. Goodman (1980) developed a model called the *Psycholinguistic guessing game*, suggesting that the reader re-constructs the meaning of the text without making use of all the textual cues. He relates the cues to his experience and knowledge of the language. According to this model, the reader is an active participant, makes and confirms predictions and uses background knowledge. This model emphasizes top-down processing, but it also gives room for bottom-up skills.

Stanovich (1980) has tried to incorporate the notions of *skilled and non-skilled readers* into his *Interactive-compensatory model*. Top-down models are more useful when we deal with students who start reading a second language and they lack vocabulary and knowledge of the L2 structures. So they have to make predictions based on their background knowledge. When it comes to more skilled readers, they find it faster to recognize the words and structures rather than making predictions if the topic is not familiar to them, that is, skilled readers rely more on bottom-up processes. Van Dijk and Kintsch (1983, as cited in Grabe 1988) also address the issue of distinguishing between good and poor readers. They say that ‘poor readers recognize isolated words inaccurately and too slowly so they make context-dependent guesses and hypothesis testing to compensate for this lack of decoding skills’. Good readers, on the other hand, do not need to make use of decoding strategies because they have no problems in using their bottom-

up processing skills. We think that higher-level processing abilities are very important in the courses we teach because our students do not possess a very good level of English and many of them are not used to reading a lot even in their mother tongue. At the same time, it is important to work on extensive vocabulary development and syntactic pattern recognition if we want to help our students become competent readers, and in doing so we are focusing on bottom-up processes. They need to expand their vocabulary and gain greater control in order to improve their reading comprehension abilities

An element that has appeared in the descriptions so far is the concept of *background knowledge*. Coady (1979, as cited in Carrell and Eisterhold 1998) suggests that this background knowledge can be useful to compensate for some language deficiencies. He adds that this is one of the reasons why 'the subject of reading materials should be of high interest and relate well to the background of the reader, since strong semantic input can help compensate when syntactic control is weak' (op cit p75) . The role of background knowledge was formalized in what is known as *Schema Theory*. According to this theory, the reader retrieves or constructs meaning from his own previously acquired knowledge. In order to understand a text, the reader goes through an interactive process between his background knowledge and the text. In this model, both processing skills are needed: bottom-up and top-down. Comprehension fails when the reader cannot activate appropriate schemata, which may be due to lack of language proficiency.

To sum up, and following Eskey (1988), the interactive model has the major virtue of directing our attention to both the top-down and the bottom-up skills that fluent and accurate reading demands.

4.2.1. Teaching reading

The *Language Threshold Hypothesis* argues that students need a sufficient amount of L2 knowledge (i.e. vocabulary, grammar, discourse) to make effective use of strategies when reading a text (Grabe and Stoller 2002) This hypothesis states that language knowledge is more important than L1 reading abilities. This threshold is crossed when the students have enough linguistic knowledge to read a text without encountering too much difficulty in its grammar and vocabulary. So, we can see that teaching reading is not a question of teaching only reading. Taking into account the above mentioned hypothesis, we see reading as a language problem, and in doing so we must face the challenge of

incorporating language instruction into our reading programs. Studies summarized by Clarke (1988) support the idea of including “traditional” activities on grammar and vocabulary instruction, together with those activities and tasks which aim at working on more top-down processing. He suggests that ‘ESL reading teachers must emphasize both the *psycho* and the *linguistic*’, and by trying to systematically integrate language-focused teaching and reading skills instruction, students will become more skilled readers or, acquire a good reading behavior.

Grabe (1988) points out a series of implications for the teaching of reading bearing in mind an interactive model. We should remember that higher-level processing abilities play an important role, but we must not focus all the attention on these top-down processes, since a focus on the linguistic element is also necessary. The reading programme should then include activities that foster rapid visual recognition, extensive vocabulary development, and syntactic recognition.

Carell (1988) also concludes that in the teaching of second language reading there must be instruction on bottom-up skills, specifically grammatical skills and vocabulary development. She also describes possible activities to foster the development of top-down processing skills, such as pre reading activities and activities that help activate background knowledge.

4.3. Learning strategies

Ellis (1997, p 76-77) defined learning strategies as ‘the particular approaches or techniques that learners employ to try to learn an L2 [...] that are typically problem-oriented’. According to Ellis, there are three main types of strategies, which many authors have included in their own descriptions of learning strategies. These are: *metacognitive strategies*, which have to do with the planning, monitoring and evaluation of learning; *cognitive strategies*, which are the ones related to the analysis, synthesis and transformation of the material; and finally, *social-affective strategies*. Language learning strategies haven been studied and classified by many different scholars. Rubin (1987) suggests three types of strategies: learning strategies, communication strategies and social strategies. Within the category of learning strategies he presents cognitive and metacognitive strategies. Oxford (1990) presents learning strategies divided into two main categories: direct (memory, cognitive and compensation strategies) and indirect

(metacognitive, affective and social) strategies. O'Malley (1985) divides strategies into: metacognitive, cognitive and social affective strategies.

The important aspect of getting a deeper understanding of the different strategies is that we should be able to let our students know about the existence of these strategies. Oxford (1990:9-13, as cited in *Learning strategies*, FUNIBER) presents some general features of learning strategies, which will provide support for including strategy instruction and development in L2 teaching. She claims that learning strategies contribute to the main goal of communicative competence, they allow learners to become more self-directed, they expand the role of teachers, they are problem-oriented, they are specific actions taken by the learner, they involve many aspects of the learner, not only the cognitive, they support learning directly and indirectly, they can be taught, they are not always observable, they are flexible, and they are influenced by a variety of factors, such as learning styles.

These are all features that we must bear in mind when facing the teaching situation, and we should not take for granted that students are equipped with the strategies and that they will automatically employ them.

Another important point to be considered is how to know when strategies are useful, and to whom they can be useful. Oxford (2003) states that for a strategy to be positive and helpful there are some conditions to be met: that the strategy has to relate well to the task, that it has to fit the learning style of the learner to some degree, and finally, that it has to be employed effectively together with other strategies.

4.3.1. Strategy instruction

As we have seen in the previous section, not all the students are aware of the learning strategies that can be applied in the learning process, so it is the teacher's task to help them get to know all the different strategies that can be used in different contexts and depending on the learners' styles and preferences. The idea is to train the students in the acquisition of certain skills, which in the present study will be reading skills, that once they are learnt, they can be applied to other situations. It is about learning to learn, focusing on procedural knowledge that will aid them in the learning process, to be more specific, in the reading process.

Mokhtari and Sheorey (2002, p 3) claim that findings from research support the view that 'students who lack metacognitive awareness and control of reading strategies often have difficulties coping with academic material [...] they tend to spend more time and energy struggling with individual words than on constructing meaning from the text'. These authors believe strategy instruction can help these struggling students become more competent readers, and when becoming aware of what actually is involved in the reading process, students will eventually become more 'strategic, thoughtful and constructively responsive' to the text, which in turn will enhance academic achievement.

Since the strategies the students employ are varied, and strategy choice depends on different factors, we should bear in mind that the students need to be presented with a comprehensive array of strategies, and they should be carefully guided on the selection of strategies depending on the tasks to be performed. One way of presenting strategies for reading classes is to organize the reading lesson into three stages: pre-reading stage, while-reading stage, and post-reading stage. In this way, the teacher can introduce different strategies. This will be further developed and shown in the section dealing with material design.

A possible instructional approach is to provide direct teaching of the strategies and integrate it in class. Chamot (2004) claims that 'explicit learning strategy instruction involves the development of students' awareness of the strategies they use, teacher modeling of strategic thinking, student practice with new strategies, student self-evaluation of the strategies used, and practice in transferring strategies to new tasks'. She adds that many researchers favor the importance of providing explicit instruction on strategy use. Oxford (1996) also suggests that it is effective to overtly demonstrate when a given strategy might be useful, and to explain how to evaluate this strategy and how to transfer it to other tasks and situations. She concludes that teachers need to assess the learning styles and strategy preference of their students since by getting a deeper understanding of the learning styles, the teacher will be able to introduce strategy teaching more effectively according to the preferences and needs of the class. Because the class is comprised of students with a great variety of learning styles and preferences, the teacher needs to introduce a broad instructional approach to meet the needs of all the students present in the class.

O'Malley & Chamot (1996, as cited in Chamot 2004) describe a model for explicit strategy instruction, together with content area instruction and academic language development (CALLA model). In this model, they imply that there are different teachers working on the different modules. However, the strategy instruction component can be also delivered by the teacher in charge of the other components. There have been many attempts to incorporate strategy instruction in the classrooms. Oxford & Leaver (1996) present a complete description of the different ways strategy instruction can be implemented. They mention that strategy instruction now is given in all levels of education, from primary to university studies; that it can be implemented in the classroom, or at home; it can be learner-directed or teacher-directed. There are many options to take into consideration when we decide to implement strategy instruction. We must consider all the factors already mentioned that are included in our teaching situations, mainly, our students' needs and learning styles.

4.3.2. Reading strategies

Carell, Pharis and Liberto (1989, as cited in Mokhtari, K & Sheorey, R. 2002), claim that 'there is evidence that good L2 readers can compensate for a lack of English proficiency by increasing awareness of reading strategies and learning how to use these strategies while reading to enhance comprehension' and bearing in mind the main aim of this project, a great deal of attention will be given to the role of reading strategies.

Reading is sometimes seen as a passive activity because it is one of the two receptive skills in language learning. However, when we read we make use of cognitive strategies and, as described before, we constantly interact with the text to reconstruct the intended meaning the author wanted to encode in the written piece. As we have seen, when we read we make use of both bottom-up and top-down processing skills, and bearing this in mind Nutall (1982) suggests the following categorization of reading skills:

1. Utilizing non-text information

a- Graphic conventions: spacing, indentation, layout

Choice of type

Punctuation

Symbols

b- Reference apparatus: title

Blurb

Biographical information about the writer

Summary and table of contents

Preliminary material: forward, preface and introduction

Non-verbal material: lists of diagrams, illustrations

Index

2- Word-attack skills

a- Structural clues

b- Morphological information

c- Inference from context

d- Special difficulties: idioms

Words with several meanings

Superordinates

Synonyms and antonyms

Irony

3- Text-attack skills

a- Signification and cohesion

- I. Understanding sentence syntax:
 - complex noun groups
 - Subordination
 - Participial and prepositional phrases
 - Coordination
- II. Recognizing and interpreting cohesive devices:
 - Reference and substitution
 - Elliptical expressions
 - Lexical cohesion
- III. Interpreting discourse markers:
 - signals of sequence of events
 - Signals of discourse organization
 - Signals of the writer's point of view

b- Discourse

- I. Recognizing functional value
- II. Tracing and interpreting rhetorical organization
- III. Recognizing the presuppositions underlying the text

4- Increasing and varying reading speed

- I. Skimming

II. Scanning

Adapted from Nuttal, C. 1982. *Teaching Reading Skills in a Foreign Language*. Heinemann.

Sheorey and Mokhtari (2002) classify metacognitive reading strategies into three broad categories: *Global strategies*, which are intentional and carefully planned by learners to monitor and manage their reading, such as having a purpose in mind, previewing the text, using tables and figures, noting text characteristics like length and organization, and predicting or guessing the meaning of the text, *Problem solving strategies*, which are the actions that readers employ while they are working directly with the text, especially when the text turns difficult, such as guessing the meaning from unknown words, adjusting one's reading rate, visualizing the information read, and rereading the text to improve comprehension, and finally, *Support strategies*, which are what readers use to aid comprehension, such as using a dictionary, taking notes, paraphrasing, highlighting textual information, or translating from the mother tongue to the target language.

The questionnaire carried out by the participants of the study was based on this classification of strategies, and so they will be explored in more depth later on.

Grabe and Stoller (2002) present a series of dilemmas for reading research and instruction, and one of these dilemmas is that of "developing the strategic reader". They present a list of strategies which are used by the skilled reader:

- Specifying a purpose for reading
- Planning what to do/ what steps to take
- Previewing the text
- Predicting the contents of the text or sections of the text
- Checking predictions
- Posing questions
- Finding answers to posed questions
- Connecting text to background knowledge
- Summarizing information
- Making inferences
- Connecting one part of the text to another
- Paying attention to text structure
- Rereading

- Guessing the meaning of unknown words from context
- Using discourse markers to see relationships
- Checking comprehension
- Identifying difficulties
- Taking steps to repair faulty comprehension
- Critiquing the author
- Judging how well objectives were met
- Reflecting on what has been learned from the text.

Taken from Grabe and Stoller (2002) *Teaching and Researching Reading*. Pearson Education. p 83

These authors (Grabe and Stoller op.cit) also agree with the fact that strategy instruction takes a lot of time, and students need to be exposed to reading and be given practice, first one strategy at a time , at the problem-solving level, until the strategy becomes a routine, but flexible, adapting to the tasks and situations that may need its use.

4.4. Vocabulary

Schmitt (2000) states that in reading the importance of written words is obvious and that when we read we fixate upon most of the words, so it is critical to help students develop a large vocabulary. It is also important that we facilitate fluent reading, because 'there seems to be a threshold reading speed under which comprehension is quite difficult' He explains that this happens because when we read slowly, we decode words in a word-by-word fashion, and we fail to get the overall meaning of connected discourse. For Grabe & Stoller (2002), also, the most fundamental requirement for fluent reading comprehension is 'rapid and automatic word recognition'. In L2 reading situations, word recognition reading abilities should not be ignored, especially when the aim is to help the students become fluent readers. They also acknowledge the importance of grouping correctly, in what is known as syntactic parsing. In order to achieve these aims, students need to be exposed to the printed world.

Dudley-Evans & St. John (1998) provide a description of the importance of vocabulary teaching in ESP, which they say, follows similar principles to those in General English courses. They say that it is important to distinguish between the vocabulary students need for comprehension and the one needed for production. For the former, it is

of great importance that students learn to use the context and structures to deduce the meaning of unknown words.

An important element to take into consideration is the *lexical phrase*. Research about vocabulary learning (Nattinger and Gerrico, 1992; Peters, 1983, as cited in Dudley-Evans & St John, 1998) suggests that vocabulary is not stored isolated, but in the form of *chunks of language*. In reading courses in ESP, the students can benefit from identifying the frequent lexical phrases, and incorporating the meaning of specific vocabulary by contextualizing it in these chunks, or bits of language. The role of lexical units in both L1 and L2 acquisition has been stressed by many researchers. As Richards and Rodgers (1986) explain, these lexical phrases haven been called “holophrases” (Corder 1973), “prefabricated patterns” (Hakuta 1974), “gambits” (Keller 1979), “Speech formulae” (Peters 1983), and “lexicalized stems” (Pawley and Syder 1983). Lewis (1993) believes that introducing the notion of chunking and giving students opportunities to practice the identification of language chunks is of paramount importance in language teaching. Instead of asking students to come up with glossaries and lists of new words as they appear in the discipline-specific texts, teachers should encourage the use of vocabulary cards in which students can incorporate the lexical phrases in context as they appear frequently in the texts they are asked to read. By working with chunks of language, students will also gain more knowledge into the syntactic parsing which aids reading fluency. If we help our students acquire these fixed and semi-fixed chunks of language, we will give them another tool to use when handling the texts. The semi-fixed chunks also allow for variation within the phrases, so we can also work on developing synonyms and other frequent words that can appear in these expressions. For example, when working with academic expressions such as *the aim of this paper is...* students can be asked to replace the word “aim” with other words that they have encountered such as “objective”, “purpose” or “goal”, and we help the students store these expressions in a meaningful way.

Lewis (1993) provides the following categories for the analysis of lexical items that are multi-word units: *collocations* and *institutionalized expressions*. As regards the first category, he includes *polywords* such as phrasal verbs and expressions such as *by the way*, *on the other hand*, *all at once*; fixed and free collocations which are message-oriented, they are more related to the content to be expressed than to a language function (such as complaining, explaining, etc). On the other hand, institutionalized expressions are

more pragmatic. Examples of these expressions are: short grammaticalised utterances (*not yet, just a moment, certainly not*), sentence heads or frames (*sorry to interrupt..., I see what you mean, but...*), and full sentences. Lewis proposes presenting the learner with 'correctly identified lexical phrases' in contexts so they can be mastered as a whole, and be helpful in mastering the syntax. In the reading courses, this mastering of lexical chunks will be useful to get rid of the habit of reading word by word, and focus on reading larger chunks as the students progress.

More often than not students believe they can understand specialized texts of their own discipline because they know the technical terms. However, when it comes to making sense of what they are reading, they experience serious problems. It is true that most technical lexical items are generally transparent and students seem to recognize them quickly, the problem arises with what is known as nontechnical or sub-technical words, which are frequent in academic readings. In a study carried out by Andrew Cohen et al (1979), the results show that biology students indicated only 9 out of 32 technical words as being problematic, but they marked as problematic 45 out of 53 non-technical words.

Addressing the issue of vocabulary is a complex task, and we must pay attention to whatever aids we think possible so as to help our low-proficient English students achieve the level of comprehension needed for handling academic texts. Nutall (1982), under the category of word-attack skills, suggests drawing attention to the following aspects: the grammatical categories of words that may help students understand difficult stretches of texts, and morphological information by analyzing the most salient affixes and their meanings.

5. Methodology

5.1. Rationale

According to Wallace (1998), there are many ways in which teachers seek professional development that helps us improve our practice. He argues there are those strategies which are informal, such as discussions with colleagues, and those that are more formal, such as reading specific journals. This need to seek professional development, he claims, comes from an interest to solve an aspect of our professional performance. One possible way would be to isolate an area of our teaching experience or daily life, and ask questions about it. Cohen and Manion (1994, as cited in Wallace 1998)

called this “inquiry”, academic inquiry means seeking to answer academic questions. One good thing about these inquiries is that the questions posed by the professional can be answered without collecting any data, by collecting descriptive examples, etc depending on the question we choose to answer.

Action research is born because we, as teachers, have come up with a question about a specific teaching situation, so we can say it is problem oriented and as a result we get really practical outcomes, which in this study are crucial since the final product of the whole project is to design appropriate materials for a specific class.

A way to summarize the action research undertaken is to answer the questions suggested by Richards and Farell (2005)

Purpose. Why am I starting this action research project?
Topic. What issue am I going to investigate?
Focus. How can I narrow down the issue to investigate to make it manageable within a specific time frame?
Mode. What data-collecting methods will I need and why?
Timing. How much time will it take and how much time do I have?
Resources. What are the resources, both human and material, that I can call upon to help me complete the research?
Product. What is the likely outcome of the research, as I intend it?
Action. What action will I expect to take as a result of conducting this research?
Reporting. How will I share the finding of this research with other teachers?

Adapted from Richards, J. & Farrell, T. (2005). Professional Development for Language Teachers, (Chapt. 12, pp. 171-196). Cambridge: Cambridge University Press.

According to Garson (2002) data collection strategies can be quantitative or qualitative. The data used for this particular action research project consisted of both qualitative approaches, such as class observation and literature reviews, and quantitative

approaches, such as the use of the questionnaire which provided statistical information about the use of certain reading strategies. The method of gathering data from respondents representative of a certain population is called survey research (Garson, 2002), and this is done by providing these respondents with a data gathering instrument, such as the closed-structure questionnaire that was given to them. We consider the group to be too small to be a representation of a whole population, but in being such a small group we could also follow the process each student went through during the course, and in general, this is the same path students with similar characteristics go through when dealing with reading comprehension activities in this specific context

This action research project can also be classified as being primary research - information is obtained from the source, that is, students- and secondary research as well, since journals, books and articles are reviewed in order to obtain data for the achievement of the final aim.

5.2. Data collection

A questionnaire was sent to 9 students who have attended the English reading course the current year, two of them had done it the previous year but they still kept in touch with the reading material. The course included explanations and tips on how to use some reading strategies as well as instruction on the features of academic English more frequent in the texts students are asked to read. From the 9 questionnaires emailed, 7 were sent back and analyzed.

The questionnaire was taken from Shoerey & Mokhtai (2002) who developed the *Survey of Reading Strategies* (SORS) to measure metacognitive awareness and perceived use of reading strategies in adults and adolescents. This instrument was inspired by another survey instrument developed by Mohktari and Reichard (2001) that has the purpose of analyzing strategy use by native speakers. The authors of the SORS claim that this new instrument was developed because they wanted to do research on the relationship between metacognitive awareness of the reading process and the ability to read academically in L2 students, and even though there are plenty of instruments for measuring native speakers reading strategies, there are no instruments for students of English as a second language aiming at reading academic texts; and the existing ones do accept that there are strategies which are transferable but they do not take into consideration those that are unique to students who know more than one language (such

as translating into the mother tongue). The SORS measures three broad categories of reading strategies: *global reading strategies*, *problem-solving strategies* and *support strategies*. This instrument was selected because it has already been validated and used in other reading strategies research around the world.

5.2.1. The questionnaire

As it was mentioned earlier, this questionnaire is intended to measure the type and frequency of reading strategies that adolescent and adult ESL students perceive they use while reading academic material in English. It is made up of 30 statements, which I translated into Spanish so as to avoid misunderstanding and each item uses a 5-point Likert scale the ranges from 1 to 5 (I never or almost never do this/ I occasionally do this / I sometimes do this/ I usually do this/ I always or almost always do this) Students have to read each statement and choose the number that applies to them, according to the frequency with which they use the reading strategy implied in the statement. So, the higher the number, the more frequent the use of the strategy in question. The strategies were the following:

GLOBAL STRATEGIES

- Having a purpose in mind
- Using background knowledge to understand what I read
- Taking an overview of the text before reading it
- Thinking about whether the content fits my reading aim
- Paying attention to the text characteristics, such as length, organization, layout
- Deciding what to read in detail and what to ignore
- Using tables, graphs and pictures to aid understanding
- Using context clues
- Using typographical features to identify key information
- Analyzing and evaluating critically the content presented in the text
- Checking understanding each time I encounter new information
- Trying to guess the content of the text as I read
- Checking if the guesses are right or not

SUPPORT STRATEGIES

- Taking down notes as reading
- Reading aloud when the text becomes complex
- Underlining or circling information on the text
- Using reference material, like dictionaries
- Paraphrasing
- Going backwards and forwards to see relationships among ideas
- Asking myself questions that I expect the text to answer
- Translating from English into my mother tongue (Spanish)
- Think about the information both in English and in Spanish

PROBLEM-SOLVING STRATEGIES

- Reading slowly and carefully to make sure I understand
- Trying to get back on track when losing concentration
- Adjusting reading speed according to what I read
- Paying closer attention when text becomes difficult
- Making pauses from time to time, to think about what I read
- Trying to picture or visualize information
- Rereading when text becomes difficult
- Guessing the meaning of unknown words or phrases

Adapted from Mokhtari, K & Sheorey, R. 2002. Measuring ESL students' awareness of reading strategies. Journal of Developmental Education.

The strategies were translated into Spanish to focus the students' attention on the strategies themselves and not on the language, and to avoid misunderstanding. The questionnaire was the following:

Leer atentamente cada estrategia y contestar lo más honestamente posible. Tener en cuenta que son estrategias que uno emplea (o no) en la lectura de textos académicos en inglés. Ante cualquier duda, me consultan.

1: nunca o casi nunca 2: ocasionalmente 3: a veces (50% de las veces) 4: usualmente 5: siempre o casi siempre

ESTRATEGIA	NUNCA				SIEMPRE
Tengo un propósito en mente cuando leo	1	2	3	4	5
Tomo notas a medida que leo para entender el texto	1	2	3	4	5
Utilizo mi conocimiento previo del tema para que me ayude a entender lo que leo	1	2	3	4	5
Antes de leer el texto en detalle, realizo una lectura rápida del mismo para saber de qué trata	1	2	3	4	5

Quando el texto se vuelve complejo, leo en voz alta para poder entender mejor	1	2	3	4	5
Pienso si el contenido del texto se adecúa al propósito de lectura	1	2	3	4	5
Leo con cuidado y despacio para asegurarme que entiendo lo que leo	1	2	3	4	5
Primero miro el texto identificando sus características, como el largo y la organización	1	2	3	4	5
Trato de recuperar el sentido del texto cuando me desconcentro	1	2	3	4	5
Subrayo o resalto información en el texto para ayudarme a recordarla	1	2	3	4	5
Ajusto mi velocidad de lectura de acuerdo a lo que esté leyendo	1	2	3	4	5
Cuando leo, decido qué leer en detalle y qué ignorar	1	2	3	4	5
Uso material de referencia (por ej, diccionarios) para que me ayuden en la lectura	1	2	3	4	5
Cuando el texto se vuelve difícil, presto mayor atención a lo que estoy leyendo	1	2	3	4	5
Uso los gráficos, las tablas y los cuadros para incrementar mi comprensión	1	2	3	4	5
Hago pausas cada tanto y pienso acerca de lo que estoy leyendo	1	2	3	4	5
Uso pistas del contexto para entender mejor lo que leo	1	2	3	4	5
Reformulo con mis propias palabras lo que voy leyendo, para corroborar comprensión	1	2	3	4	5
Trato de crear imágenes o visualizar la información para poder entender mejor el texto	1	2	3	4	5
Presto atención a la información tipográfica (negrita, tamaño de letra, cursiva) para identificar la información clave	1	2	3	4	5
Analizo y evalúo críticamente la información que plantea el texto	1	2	3	4	5
Voy y vuelvo en el texto para encontrar relaciones lógicas entre las ideas	1	2	3	4	5
Corroboro mi comprensión cuando encuentro información nueva en el texto	1	2	3	4	5
Trato de plantearme hipótesis de lectura sobre el contenido del texto cuando leo	1	2	3	4	5
Cuando el texto se vuelve difícil, lo releo para mejorar mi comprensión del mismo	1	2	3	4	5
Me hago preguntas que me gustaría el texto responda	1	2	3	4	5
Corroboro si mis hipótesis de lecturas eran correctas o no	1	2	3	4	5
Cuando leo, deduzco el significado de expresiones o palabras desconocidas	1	2	3	4	5
Cuando leo, traduzco del inglés a mi idioma materno	1	2	3	4	5
Cuando leo, pienso acerca de la información en inglés y en mi propio idioma	1	2	3	4	5

5.2.2. Participants and target group for materials

The study was carried out bearing in mind the group of students who attend the non-compulsory English reading course at *Universidad Nacional del Comahue*, a state university located in Rio Negro province, Argentina. These students are in their 3rd and 4th year of their course of studies: Biology studies and Aquaculture studies (*Licenciatura y Profesorado en Ciencias Biológicas and Tecnicatura en Acuicultura*) Since they have been enrolled at university for three or four years, they have a deep knowledge of the subject matter presented to them in the texts that make up the reading material for the present course. It is assumed at university that these students possess a good command of English which allow them to understand academic texts written in English. In fact, other teachers from different subjects include in their syllabi compulsory material which is written in English. However, the students have a very basic level of English which they bring from

secondary school. Some of the students also attend English institutes so they have no problems in understanding texts, but most of the population in this public university have only had English in secondary education, and we must remember that they finished high school three or four years ago. This contradicts the fact that English is not even an compulsory subject in their course of studies. Given the difficulty students experience while trying to make sense of the reading material provided in English, the university gave room for the teaching of a reading comprehension course as if it were a regular subject in their course of studies. So, since the year 2011 Biology and Aquaculture students are given the opportunity to enroll in this course, attend classes twice a week, for a total of 6 hours a week, get the material needed and sit for mid-term exams and final exams as with any other subject in the academic course. In general, classes consist of no more than 12 students, which allows the creation of a very nice working atmosphere, students become more and more self-confident and are eager to share and work collaboratively.

5.3. Data collection, analysis and interpretation

5.3.1. Questionnaire

The analysis from the questionnaires will be presented in the following way. First of all, strategy use is analyzed without taking into consideration the strategy categories of *global*, *support* and *problem-solving*. Then, strategy use will be seen according to the previously mentioned categories, without analyzing the different strategies numbered in the statements. Finally, each strategy category will be analyzed separately to see which specific strategies were the most frequently used and which the least frequently selected.

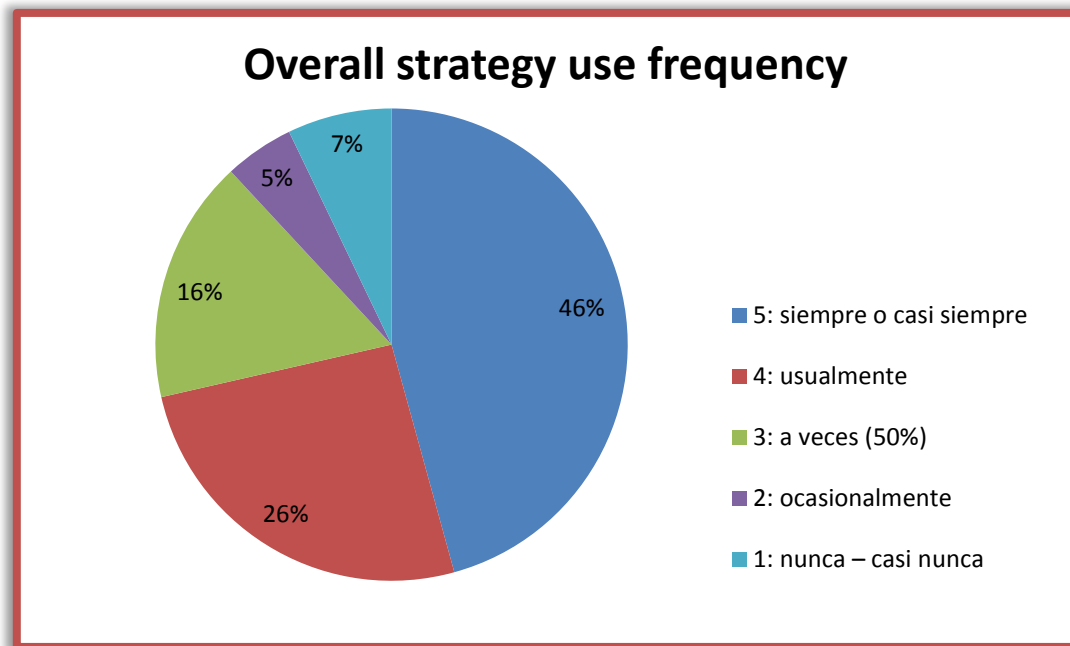


Chart 5:1

Looking at graph N° 1 we can see that students are “strategy users” in the sense that the frequency options (never-almost never/ occasionally/sometimes/ usually/ always-almost always) which were the most chosen were *always-almost always* (46%) and *usually* (26%).

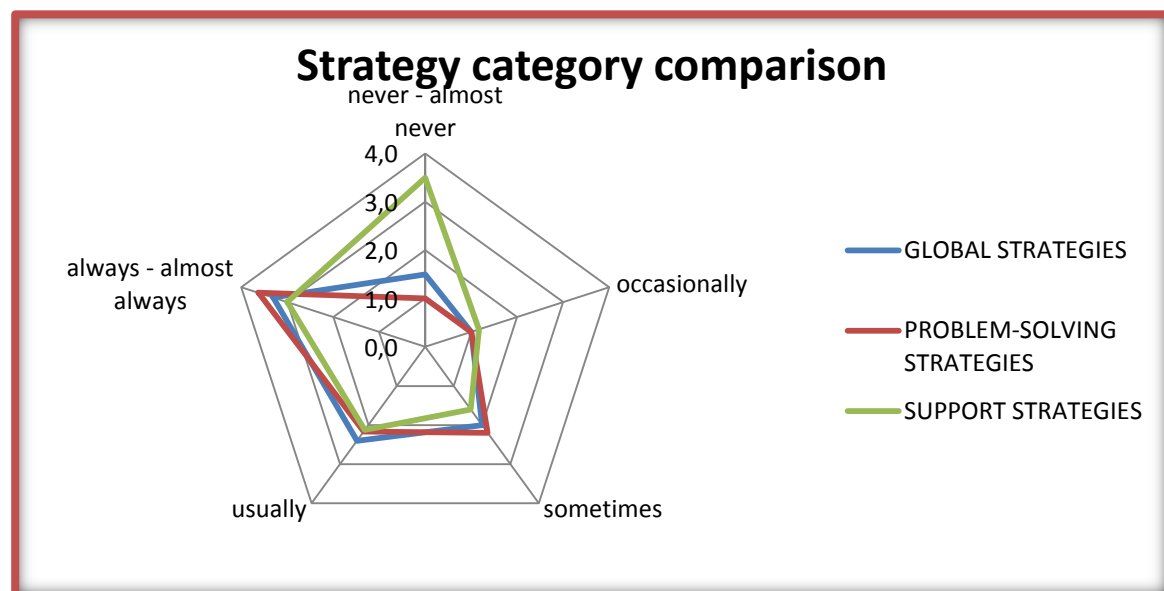


Chart 5:2

Graph N° 2 shows the frequency options but this time in relation to the three different types of strategy: global, support and problem solving. We can see that global

and problem-solving strategies share a similar pattern, implying that the number of times the strategies were selected are more or less similar. However, there is a striking difference between these two categories and support strategies in relation to the frequency option *never-almost never*. According to this result, support strategies were the category with the least frequency use.

The three figures below represent each category analyzed according to the frequency use of every mentioned strategy. They show the most frequently chosen strategies to the least frequently chosen ones.

As regards global strategies, those strategies that are carefully and intentionally planned to monitor the reading process, the most preferred strategy was “thinking about whether the content fits my reading aim” and then “having a purpose in mind” which are well-related. Also “using background knowledge” was chosen among the most used. The rest of the strategies fall under the category of moderate use and the least selected ones were: “deciding what to read in detail and what to ignore”, “checking if the guesses are right” and “trying to guess content of the text as I read”



Chart 5:3

Among the problem-solving category, that is, those strategies mostly employed when the text becomes difficult, the students mostly preferred “paying attention when the text becomes difficult”, followed by “reading slowly and carefully” and “adjusting reading

speed". The least chosen were "guessing the meaning of unknown words" and "trying to picture or visualize the information"

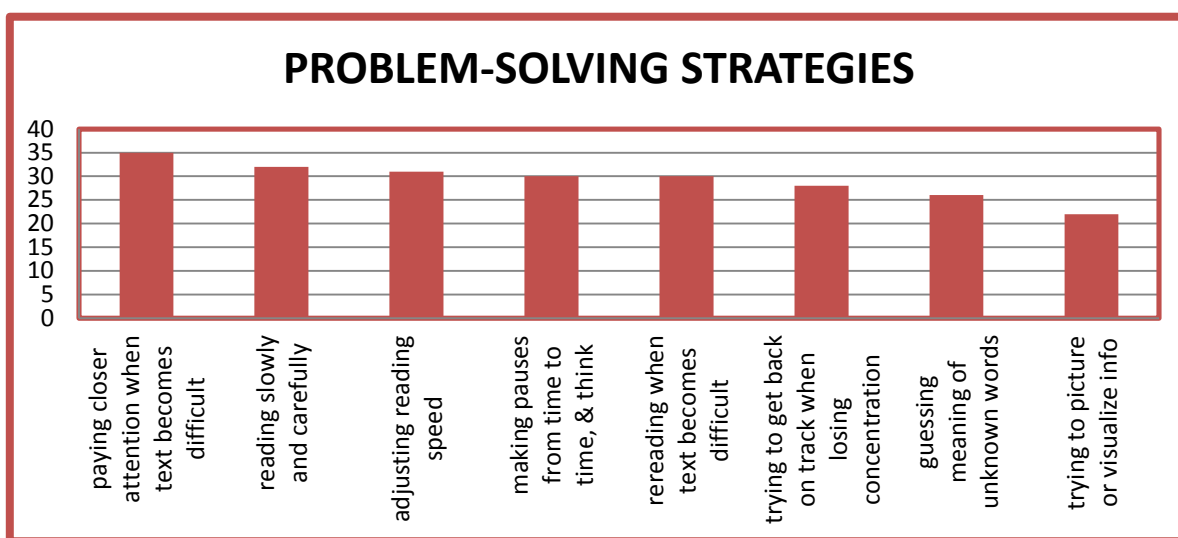


Chart 5:4

Finally, as regards support strategies, those strategies used to aid comprehension, the strategies of high usage level are "going backwards and forwards to see relationships among ideas", followed by "underlining or circling information", "thinking about the information both in English and in my mother tongue" and "using reference material". Whereas, the bottom strategies are "reading aloud" and "asking myself questions about the text"

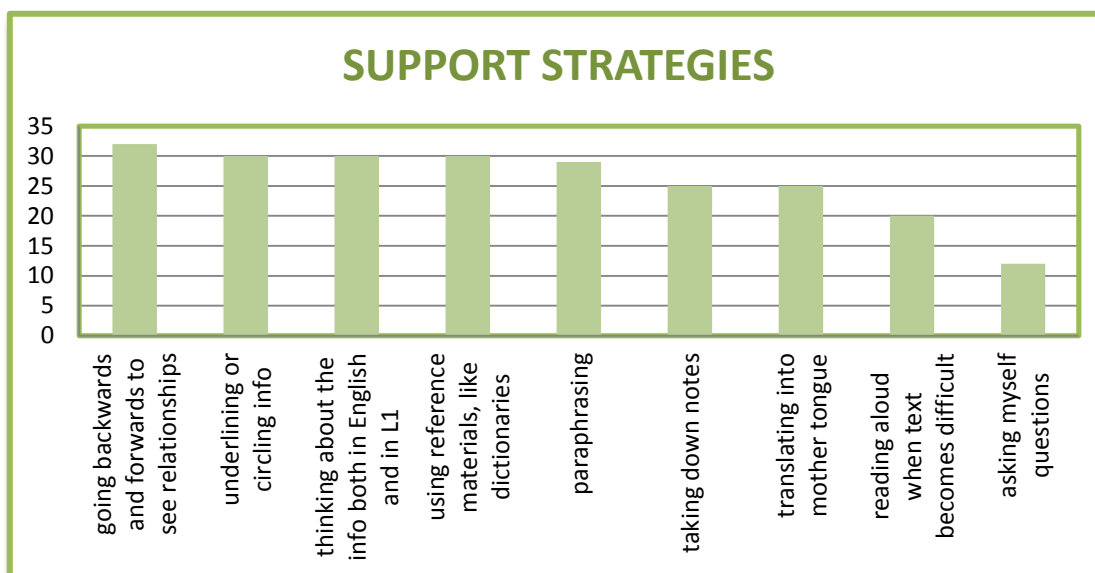


Chart 5:5

As we can see from the results of the survey, we must work on more detail in the instruction of support strategies. However, this does not mean poor use of this kind of strategy. Students might also get confused while doing the survey since many of the strategies are used in class, with the guidance of the teacher who tells them which strategy to use in a certain task, and then expects them to use it on their own. They may be confusing a task with a real life reading of a text. In order to clarify the doubts as regards strategy use, an interview would have been a good instrument. Poor use or no use of strategies may also be related to knowledge of the language, a strategy such as “paraphrasing” or “reading aloud” will be chosen by students who have the elements needed for reformulating an idea and the knowledge on pronunciation needed for being able to read aloud. Reading aloud is a practice we have incorporated in order to see how students read in chunks and if they make pauses in the right places. At the beginning of the year, students do not feel comfortable enough to read aloud, but as the year progresses, they start reading aloud and I can notice the improvement, not on pronunciation – which is not the focus – but on the reading speed which increases due to knowledge on where to make a pause and the ability to read larger chunks of language. Sometimes, strategies are presented as pedagogical tasks and students might need to be clarified on the possibility of implementing these strategies in their regular reading activities, for other subjects as well. Strategies such as “taking down notes” was not very much used during the reading course because the aim was not the content, but it is a strategy students use when reading in their L1, and especially, when having to read for exams or study matters. The fact that students did not favor “making use of reference material, such as dictionaries” as the most frequently used is a very positive outcome because even though reference materials are of great importance, at the very beginning of the year, students seem to over rely on the use of dictionaries and on-line tools. This over reliance hinders comprehension and it turns the dictionary into an enemy more than a helping hand, since students tend to look up every single word they do not understand, even forgetting to use context as a clue to understanding.

As Oxford (2003) believes there is a strong correlation between strategy choice and learning style, in the sense that a learner will choose the learning strategy that best fits his learning style, and we must bear this in mind when analyzing why students favor one strategy over another. There are many factors influencing the choice, and even though questionnaires may sometimes provide biased information, and we must not rely solely on

them, the facts that we can draw from the results allow us to conclude that strategy training brings benefits and helps students become aware of them.

5.4. Material design

As suggested by Hutchinson & Waters (1987) one of the most salient features of an ESP practitioner, especially if he is compared to a GE teacher, is the active role they play in material design. There are no ready-made coursebooks which fit the purpose of the different ESP courses available. Designing material is a very complex task which requires time and constant evaluation. Jolly & Bolitho (1998) suggest a series of steps to be taken when designing materials:

1- Identification of need
2- Exploration of the area, skills, problem
3- Contextual realization of the material
4- Pedagogical realization
5- Physical production of material

The authors believe it is of great importance that the materials are based on a deep understanding of the learners' needs, which implies a learner-centred approach to material writing. They also claim that this is not a straight path with no turning back; on the contrary, the teacher is constantly reviewing the previous steps in order to continue improving or developing new material depending on the outcomes.

So, what is the connection between the results from the questionnaire and the material to be designed? There are many things to take into account. First of all, the results show that students are aware of the existence of strategies to aid comprehension in the reading process. At the beginning of the course, the students only wanted to translate every single word into their mother tongue, and they only referred to the google translation tool for the texts they were asked to read in other subjects. Students were not familiar nor they used strategies that had nothing to do with the ideas previously mentioned. Secondly, it seems to be obvious that more emphasis has to be placed on those strategies that were not so frequently chosen. This is the case of the support strategies, i.e. strategies used to aid comprehension. Consequently, tasks will need to provide practice on strategies such as

taking down notes as reading, reading aloud when the text becomes complex, paraphrasing, asking myself questions that I expect the text to answer, translating from English into my mother tongue (Spanish) since those were the support strategies less frequently selected by the subjects. Moreover, as regards the least chosen problem-solving strategies, we must work on “guessing the meaning of unknown words” and “trying to picture or visualize the information”, as regards this last strategy, it seems to be closely linked to the learning style of the student, because it has to do with a visual learner. Finally, in connection to global strategies, activities will need to be designed to foster the use of strategies like “deciding what to read in detail and what to ignore”, “checking if the guesses are right” and “trying to guess content of the text as I read”. We can see that the idea of “guessing” is not one truly favored by the students, either when it comes to global or problem-solving strategies, which may be a signal of students not feeling too confident to take risks. Tasks need to be designed so as to provide a context for taking risks; however, the idea of students not feeling too confident to take risks is deeply connected to the personality and learning style of the student.

In addition, more activities can be included to foster a greater awareness of availability of strategies, so students can have a good understanding of the wide range of tools they have at hand so as to tackle the texts more easily. This kind of tasks can be aimed at making students think about the strategies, and being able to freely choose one strategy over another. So, more options have to be included in the tasks given to them. Also, group discussions can also be promoted, so students can share their preferences and talk about the use of strategies.

5.4.1. *Approach adopted*

The approach adopted to design the material is based on a skills-centred course design. This is the approach that many ESP courses adopt in universities where students are requested to learn reading comprehension. In this view, the learner is seen as a *user* of the language rather than as a *learner* of the language (Hutchinson & Waters, 1987, p 70). However, as we have already mentioned, the students who attend this course are not proficient language users, so the instruction of language has to be taken into consideration. Dudley-Evans & St John (1998) state that the reading component of an ESP course needs a balance between skills and language development. Alderson (1984,

as cited in Dudley-Evans & St John 1998) showed that learners need to go over a threshold level of language if they are to transfer reading skills from their mother tongue to the L2. It is believed that the text should not be seen as a linguistic object, but as a vehicle of information, so the main goal of the use of texts will not consist of analyzing the structures and the grammar, but trying to get, by means of strategies, the information it conveys.

As regards strategy training, Cohen (2003) proposes a series of steps based on Oxford (1990) which are very useful because they can be adapted depending on the needs and courses to be taught. The steps are as follows:

- 1- Determine learners' needs and the resources available for training
- 2- Select strategies to be taught
- 3- Consider the benefits of integrated strategy training
- 4- Consider motivational issues
- 5- Prepare the materials and activities
- 6- Conduct explicit strategy training
- 7- Evaluate and revise the strategy training

Taken from Cohen, Andrew (2003, August). *Strategy training for second language learners*. Digest, Second Language Learning. EDO-FL-03-02.

As Cohen (2003, Conclusion section) suggests:

when including strategies-based instruction in a foreign language curriculum, it is important to choose an instructional model that introduces the strategies to the students and raises awareness of their learning preferences; teaches them to identify, practice, evaluate, and transfer strategies to new learning situations; and promotes learner autonomy to enable students to continue their learning after they leave the language classroom.

In addition to strategy instruction, the materials for the reading course we are in charge of need to include activities related to the language, its structures and vocabulary. Johns & Evans (2001, as cited in Brunton 2009) suggest that the students' target English situations have identifiable elements. So, it is important to identify them. The analysis and explanation of the following features are also included in the material:

- Verb forms, including tense and voice

- Modal verbs, especially for expressions of certainty and uncertainty
- Logical connectors
- Nominalizations
- Cohesive devices
- Complex noun groups
- Participial and prepositional phrases

The grammar structures that are explained and analyzed in class are not included in the same booklet as the texts, since they are like guides which students can turn to when necessary. They do not form part of the compulsory material to be studied, but they serve as tools for those students whose level of English is really low. These guides are written in Spanish, and they are not too specific as regards linguistic complexity and terminology because students are not used to working with language as an object of study, so they may sometimes get confused by an explanation instead of clarifying a problematic topic. They do contain examples taken from authentic material.

Another important concept in the discussion of material design, especially for a reading course, is the issue of choosing authentic material. Much debate has been around this topic, and also whether we choose authentic texts and then ask our students to carry out non-authentic activities. In this respect, we believe what Widdowson (1978, 1983 as cited in Dudley-Evans and St John 1998, p 28) claims ‘authenticity thus lies on the nature of the interaction between the reader and the text’. The texts we choose are always authentic material, since we take them from different journals and books, even brochures or posters, however, students are not always asked to carry out reading tasks with an authentic purpose” because we sometimes focus on particular structures or we work on the vocabulary, those aspects belonging to the bottom-up processing skills mentioned earlier. For the same purpose, the selected texts are changed so as to make them didactic tools, in this sense it can be claimed that they stop being authentic. But the process of making a text a didactic tool only involves selecting some parts of a research article, for example, or choosing different headings and isolating them from the rest of the text, and even disorganizing the different sections so as to create a “puzzle”. All these changes that are done to the text make it become a didactic tool, however, the content and language of the text remains untouched.

5.4.2. Creative process description

After a needs analysis has been carried out and the objectives have been established, the materials are created. This is done by selecting appropriate texts with the help of the students – they bring texts and suggest possible topics. Once the texts have been chosen, they are graded taking into account the following criteria:

- Length
- Topic
- Complexity of structures
- Layout
- Genre

Texts are the basis for the teaching of strategies, recognition of discourse organization, academic vocabulary, and structures. So at the beginning we start with a very short text, such as a table of contents, and at the end of the year we end up reading whole research articles.

The tasks are designed taking into account a three stage lesson:

- Pre-reading stage
- While-reading stage
- Post-reading stage

In each of the stages mentioned the teacher assigns tasks which imply the use of different strategies, so depending on the text, different strategies and tasks are developed

For example, a text with lots of graphs and sub-headings can be used to practice the strategy of anticipating content of the text by looking at this info, and activating previous knowledge on the topic depicted. Then, the text under the graphs can be looked at so as to see if they can read it without problems, and see which vocabulary is present in this short piece of text, that matches the anticipated content they have come up with at the beginning. During a while reading stage, students can do skimming and scanning to see if there is more information that supports the previous guess, or more information accompanying the one provided by the graphs. They can also develop each subheading in a taking-down-notes manner. Finally, during a post-reading stage the teacher may want to draw the students' attention to specific language characteristics, and assign also a task

that helps the student grasp the meaning of the text as a whole, especially after we have worked and “dissected” the text in so many parts.

The tasks that provide opportunity for language work and analysis are designed according to the most salient structures and vocabulary phrases that the text shows, and those that the teacher predicts will appear again and again. For example, there seems to be no use in working with all the verb tenses when students will not be faced with all of them when reading academic material. The teacher identifies the most frequent verb tenses and she presents them to the class in context, that is, by using the examples taken from the texts.

Last but not least, the idea of helping students develop their vocabulary so as to become more fluent readers can be introduced through activities and suggestions for them to incorporate lexical phrases in semantic fields. More structural students can also benefit from noting down different categories a word can belong to by adding suffixes for example. Students are encouraged to keep a record of the lexical expressions, together with examples of the context where those expressions appeared. This way of organizing the vocabulary is based on the theory of Schmitt (2000) when claiming that one way of applying a strategy for learning vocabulary involves relating the word (or lexical expression) to some previously learned knowledge. So, if we ask our students to store a lexical unit taking into account the context where it appeared, we facilitate this relationship, and by aiding the development of this memory strategy we are asking the student to elaborate a mental process, which, as Schmitt (op cit) states, facilitates long-term retention of the word.

5.4.3. Description of material and activities typology

The designed material forms part of the students’ working and reference material for attending the non-compulsory reading course offered by the University. This material is uploaded to the university’s virtual platform, and once the students get enrolled in the course, they get access to the virtual classroom where they can participate in forums, download the material and get news and updates about the weekly face-to-face lessons. Even though the existence of this virtual space has allowed for more varied practice, we still have classes in the traditional way by meeting twice a week for a period of 3 hours

each class. In general, the texts for the first semester are provided by the teacher, but before the second part of the year starts, the students collaborate with the teacher suggesting possible topics or texts that they get from other subjects.

Students are given material which is divided into three sections: first, a set of texts ranging from the shortest to the longest, and more difficult both in structures and vocabulary. The content of the texts is not problematic for the students since they already have a good understanding of the topics from other subjects. In fact, it is the students who explain the content to the teacher sometimes. Then, they get a set of grammar guides with examples of the most complicated structures they can encounter in the texts. These guides have examples taken from different texts and on-line journals. Finally, students get extra material which is uploaded into the virtual classrooms, where they can see videos related to a topic dealt with in class, or listen to a podcast or even carry out some relaxing activities such as listening to a song and completing the lyrics. They also get access to different science magazines, scientific journals or they just share difficulties encountered while doing written assignments for example. This last “component” is mainly to increase students’ motivation and incorporate in a non-compulsory way the practice of other skills, such as the listening skill.

The activities that accompany the different texts are varied and not easy to categorize because of the broad array of topics that are dealt with in each text. If we think of the distinctions between “real world” vs. “pedagogical” tasks there are different variables to consider, for example, the input for the activities, i.e. the text, is authentic, but it is sometimes converted into a pedagogic text; the activities sometimes aim at doing with the text what we do in everyday life, i.e., skimming a text for deciding to read it or not, but other times the activities have the purpose of learning a new structure or finding information by paying attention to specific logical connectors, etc. To begin with, students are asked to read a text inside a classroom, in a learning situation.

The activities that we carry out can be considered to have a real world orientation in the sense that the sources (texts) are authentic, sometimes this authentic material is adapted, but we never use texts taken from language coursebooks, for example. The final aim of the material is to help students acquire the reading strategies that they will need when facing a real reading experience, which is something they already do in other subjects.

The activities are presented following the three-stage organization mentioned before. Activities belonging to the first stage include:

- Skimming and scanning
- Providing reason for reading
- Predicting the content
- Writing a reading hypothesis
- Introducing the text
- Dealing with the new language
- Discussing a topic before actually reading about it
- Looking at pictures related to the topic
- Scanning for known expressions related to the content

Activities which are done during the while-reading stage may include those tasks which have to do with the word-attack skills and the text-attack skills described by Nutall (1982). Students can be asked to:

- Find main ideas
- Carry out True-false activities
- Answer comprehension questions
- Order information
- Select a specific strategy and work on it
- Create mind maps
- Check previous guesses

Finally, activities to be done in the last stage can be:

- Writing a summary (in their mother tongue)
- Watching a video on the same topic
- Listening to podcasts or other listening material dealing with the same topics
- Asking questions based on the information obtained
- Debating on the topic and relating the content to other subjects
- Critiquing the author's point of view
- Analyzing language structures

During the presentation of the different tasks, students are requested to discuss and note down the strategies they employ.

The following tasks show what has been mentioned so far, with activities organized into the three categories above mentioned- pre, while and after reading tasks.

ACTIVITY N° 1: Table of contents

PRE – READING TASKS

- 1- Mira rápidamente el siguiente texto. ¿qué tipo de texto es? ¿de dónde fue sacado? ¿qué área de estudio abarca?
- 2- Lee rápidamente el texto para identificar aquellos términos que conoces y los que son transparentes. Recuerda que las palabras que ya conozco y las palabras transparentes son las que te van a ayudar en la lectura del texto. No prestes atención a los términos desconocidos. Completa la siguiente tabla:

Palabras conocidas	Palabras transparentes	Palabras que quiero buscar en el diccionario

WHILE-READING TASKS

- 1- Lee rápidamente el texto para encontrar la siguiente información específica:
 - a- ¿qué parte del libro trata sobre las interacciones de especies?
 - b- ¿dónde encontramos las sugerencias para lecturas adicionales?
 - c- ¿qué encontramos luego de las aplicaciones prácticas de cada parte del libro?
 - d- ¿de qué trata la parte 4 del libro?
 - e- ¿en qué página se define al depredador?
 - f- ¿qué tema se describe en la página 306?
 - g- ¿a qué sección pertenece la página 159? ¿qué tema trata?
- 2- Elige la parte que más te atrae de esta tabla de contenidos por la temática y escribe un breve párrafo con tu conocimiento sobre el tema. ¿qué conceptos o términos esperas encontrar en el capítulo de ese tema?

As we can see in this first task, the focus is on those strategies which allow the reader become familiar with the topic, and the language, so as to make use of previous knowledge to aid comprehension. Also, skimming and scanning activities, to foster reading speed are included. Moreover, students are requested to anticipate or predict the content of the text, so then they have a purpose for reading, i.e., check the hypotheses.

In activity 3, the pre-reading tasks foster the use of predicting strategies so students activate their previous knowledge on the subject and anticipate the content of what they may be asked to read.

ACTIVITY 3: Different texts and titles

PRE-READING TASK

- 1- Lee los siguientes TÍTULOS y escribe una versión en castellano de cada uno.
- 2- ¿a qué área de estudio de las siguientes crees que podrían pertenecer los títulos?

**ECOLOGY – ZOOLOGY – ECONOMY – ICHTHYOLOGY – GLOBAL WARMING –
AQUACULTURE – PLANT BIOLOGY - GENETICS – PHYLOGENY -**

Some of the titles are:

MEETING PRODUCTION GOALS WITH LIMITED RESOURCES

→

**THE ROLE OF DISTURBANCE
IN NATURAL COMMUNITIES**

→

Global Biodiversity Scenarios for the Year 2100

→

In this translation activity, students are given practice on the skills to solve unknown words using the context where the word is embedded. Finally, students are asked to scan the texts (see appendix) to match them with the titles. Also, students have to find key phrases that helped them decide which text goes with each title.

In the next activity, students need to pay attention to the text organization and features, fostering the use of the following global strategies:

- Using typographical features to identify key information
- Taking an overview of the text before reading it

- Paying attention to the text characteristics, such as length, organization, layout

ACTIVITY 5: Posters

PRE-READING TASKS

- 1- Observa los siguientes textos, ¿qué tipo de textos son? ¿qué función cumplen? ¿qué características tienen en cuanto a formato, etc? ¿dónde esperas encontrarlos?

Then, students have to scan the text to find specific information to complete the table below. Students are encouraged to find key expressions and to use their knowledge of these kinds of texts to complete the task

WHILE-READING TASKS

- 1- Text 1: en base a la información brindada por este poster completa el siguiente cuadro:

Nombre del taller/ seminario	
Lugar	
Fecha	
Dirigido a	
Organizadores	
Objetivo	
Temas	
Inscripción	
Cantidad de lugares disponibles	
Fecha límite para enviar resúmenes	

In the following tasks (which belong to the 2nd term) students are overtly asked to focus on strategy use.

¿Qué estrategias aplicarías para comprender este abstract?

Marca con un tick aquellas que consideras prácticas para este texto en particular.

- Tomar nota de la información a medida que vas leyendo
- Leer en voz alta cuando el texto se vuelve complejo
- Subrayar o marcar expresiones en el texto
- Utilizar diccionarios u otras fuentes de consulta
- Reformular ideas poco claras
- Ir y volver en el texto para entender la relación que existe entre las ideas
- Formularme preguntas que quiero que el texto me responda

Dynamics of the Leaf-Litter Arthropod Fauna Following Fire in a Neotropical Woodland Savanna

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Abstract

Fire is an important agent of disturbance in tropical savannas, but relatively few studies have analyzed how soil-and-litter dwelling arthropods respond to fire disturbance despite the critical role these organisms play in nutrient cycling and other biogeochemical processes. Following the incursion of a fire into a woodland savanna ecological reserve in Central Brazil, we monitored the dynamics of litter-arthropod populations for nearly two years in one burned and one unburned area of the reserve. We also performed a reciprocal transplant experiment to determine the effects of fire and litter type on the dynamics of litter colonization by arthropods. Overall arthropod abundance, the abundance of individual taxa, the richness of taxonomic groups, and the species richness of individual taxa (Formiciade) were lower in the burned site. However, both the ordinal-level composition of the litter arthropod fauna and the species-level composition of the litter ant fauna were not dramatically different in the burned and unburned sites. There is evidence that seasonality of rainfall interacts with fire, as differences in arthropod abundance and diversity were more pronounced in the dry than in the wet season. For many taxa the differences in abundance between burned and unburned sites were maintained even when controlling for litter availability and quality. In contrast, differences in abundance for Collembola, Formicidae, and Thysanoptera were only detected in the unmanipulated samples, which had a lower amount of litter in the burned than in the unburned site throughout most of our study period. Together these results suggest that arthropod density declines in fire-disturbed areas as a result of direct mortality, diminished resources (i.e., reduced litter cover) and less favorable microclimate (i.e., increased litter desiccation due to reduction in tree cover). Although these effects were transitory, there is evidence that the increasingly prevalent fire return interval of only 1–2 years may jeopardize the long-term conservation of litter arthropod communities.

Topic:
Aims:
Materials and Methods:
Results:
Conclusion:

Post-reading task:

- 1- Elige tres términos que desconoces del texto. Escribe la oración o la frase donde ese término aparece y trata de pensar su significado ayudándote del contexto. ¿Qué palabra similar se te ocurre? Escribe cómo resolviste la actividad
- 2- Busca el paper de donde se extrajo el abstract y en base al cuadro que completaste elige qué sección te resultaría interesante leer en detalle

(<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0007762>)

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In the next task, we can also see how the focus is on strategy development and awareness. Students are asked to write down the strategies they use, especially the ones employed to sort out the difficulties.

PRE-READING TASKS: PROBLEM-SOLVING STRATEGIES

- 1- Leer el siguiente texto. Primero de manera rápida para poder predecir el contenido y asociarlo con tu conocimiento previo. Y después utilizando estrategias que te ayuden a resolver los problemas que te plantee el texto. Registra dichas estrategias a medida que las utilizas.

Then, students have to read the text with specific aims in mind, i.e., to find specific information to answer questions. They are also asked to recognize and think about the strategies they chose to use

WHILE-READING TASKS:

- 2- Busca información en el texto que te ayude a resolver las siguientes preguntas

¿Qué especie se estudió y por qué?

¿Por qué esta especie es importante como modificadora del hábitat?

¿De qué manera se la estudió?

- 3- Lee las siguientes estrategias y marca las que utilizaste en la segunda lectura:

- **Lectura lenta y cuidadosa para asegurarme la comprensión.**
- **Al perder el hilo de la lectura, intento volver al texto**
- **Ajusto la velocidad de lectura de acuerdo a lo que estoy leyendo**
- **Me concentro especialmente en las partes más difíciles**
- **Realizo pausas cada tanto para pensar acerca de lo que voy leyendo**
- **Trato de visualizar la información a medida que leo**
- **Cuando el texto se vuelve difícil, re-leo la información**
- **Trato de adivinar el significado de las palabras desconocidas utilizando su forma y el contexto**

Finally, using the same text, students will be guided into the practice of a specific strategy: paraphrasing.

POST-READING TASKS:

4- ¿Cuáles de las estrategias que están en la lista no utilizaste y crees que te resultarían de utilidad para próximas lecturas?

5- Strategy: Paraphrasing

Analiza las siguientes ideas y busca en el texto qué ideas están reformulando

- a- We use patterns of picids to study the special traits of the biology of the woodpecker
- b- The place where the woodpecker makes its nest is also the home of other species and this is why the woodpecker is a potential habitat modifier in the austral temperate forest biome of Argentina.
- c- There is not enough information about this woodpecker's ecology, biology, natural history, mating systems, breeding biology, nestling development or parental care.
- d- The aim of my study is to report on the activity of pairs and families of the woodpecker and to provide some of the information missing for this woodpecker.

As the texts become more complex (especially as regards length) students are given tasks aimed at helping them use the strategies that they use when reading texts for their academic life, which is the ultimate aim of the whole course. The focus on language becomes less important, and more significance is given to the strategies. Towards the end of the year, students have acquired a good command of academic structures and vocabulary, which allows them to read more fluently. They also come to understand that the idea of reading in English is similar to that of reading in their mother tongue, that is, they need to take information out of the texts. They feel less anxious about reading in English and they start to believe in themselves, making use of a variety of strategies which they thought did not exist.

6. RESULTS

Through the analysis of the results provided by the survey it can be seen that strategy instruction does play a role in raising awareness of strategy use in university students who have a low level of English proficiency. Even though questionnaires are not so reliable in the sense that there are many factors interfering that may produce biased results, we can see that the students showed a high frequency use of different strategies. This implies that they have become aware of the existence of strategies to aid the comprehension of texts written in English. Work has to be done so as to improve the student's knowledge on the wide array of strategies available to them.

As regards the literature on the topic of reading instruction and reading skills, there is agreement that an interactive approach to reading in this particular context (Grabe 1988) in which students bring a basic knowledge of the English language, may be favorable because it allows for the introduction of both top-down and bottom-up processing tasks. The teaching of reading strategies, discourse characteristics, academic lexical expressions together with the teaching of language can be combined using authentic materials as the starting points, and bearing in mind a student as an active reader and participant of the learning process.

This action research project aimed at addressing the issue of teaching reading skills to students who possess a very low level of English. Given the view of teaching reading as a skill without “mixing” it with the teaching of language that many authors hold, the question of how to combine these two aspects in an ESP context provided the grounds for this project.

As regards the results showed by the surveys, we can see that students are aware of the strategies they can use while tackling material written in English. However, in order to get more feasible results it would have been better to survey a larger population and to have given the very same questionnaire to the same group before starting the reading course. In this way, we would have got information about the state of knowledge on the use of strategies before and after the course. However, at the beginning of the course students had stated that the only “strategy” they used was to look up all the unknown words in the dictionary, and to copy and paste extracts from the given texts into the Google translator tool.

An observation that can also be made is that the group of students who participated in the research consists of students who are really motivated to learn to read in English because they are required to read a lot of research articles and academic material written in English in other subjects in their course of studies, so the exposure they have to texts written in English and to academic material written in Spanish is quite large.

7. CONCLUSIONS

As mentioned at the beginning, the main aim of the project was to get a deeper understanding of the reading strategies students make use of when reading academic

texts so as to design tasks which foster the use of strategies and help these low-level English students achieve the goal of reading and understanding academic texts. By conducting theoretical research on the topics of reading, reading strategy instruction, vocabulary teaching and material design, together with the information drawn from the questionnaires given to students who had attended the course, we were able to get a deeper understanding of the key elements that must be included in the material, and the importance of making strategy instruction explicit. All the information we got helps us understand that there is a wide array of elements to be taken into account when designing material for a reading course, i.e., it is not only the use of an authentic text, but also the tasks we design to work with that text, how we “grade” authentic texts, what language we are going to present with that text, what strategies we can work with by means of that piece, and how to develop the use of those strategies.

The topic of material design is closely linked to the role of the ESP teacher or practitioner. We have seen that one of the features that distinguish the General English teacher from the ESP practitioner is the important role the latter plays on material design. This project has opened the door for the revision of theoretical aspects to put into practice on the design of material for the teaching of reading in an ESP context, and it also provided evidence of the actual use of strategies by “actual” students.

The issue of teaching reading is broad and it gives room for a great variety of research lines which have not been covered in this project. One of those research lines can be investigating the effect of motivation and the exposure has on the overall performance of reading comprehension tasks, as compared to another population, such as Nursing or Physical Education students, who are also required to take the reading comprehension exam but who are never asked to read in English in other subjects and thus, show no motivation in acquiring the skill.

As mentioned before, the path that has to be followed is not static, but loaded with going backwards and forwards, changing, adapting, designing, and evaluating. The concept of evaluation has not been fully developed and it could be a long-term plan of action to take into account. Materials are evaluated by the practitioners and by the students, so they can be active participants in the process.

To conclude, bearing in mind the insights gained by carrying out this project the following goals are set for the long-term:

- First of all incorporate more reading strategy-awareness-raising tasks, especially for those strategies that were the least chosen, of course there may be other reasons rather than lack of awareness, but this result must be addressed. The strategy category that students chose the least was SUPPORT STRATEGIES. This category encompasses strategies such as taking down notes, reading aloud, underlining or circling information, using reference material, paraphrasing, going backwards and forwards to see the relationships between ideas, asking questions to which we expect answers found in the text, translating, etc
- Secondly, help students become active participants in their own learning process, and encourage the habit of incorporating more reading in their daily life. Also, foster their motivation by providing texts of their own choice and of relevant content rather than language content.
- Thirdly, carry out on-going evaluation of the activities given to the students and the texts selected. In addition, more research can be done on the topic of material evaluation and adaptation, since once the material is created it requires constant revision and improvement. Some texts we consider good material turn out to be really poor both in content and in structures, and it might lead to confusion. As teachers we must be opened to criticism and revision, and accept when we are wrong. See appendix 3 for an example of a questionnaire for end of course evaluation by one of the students. This questionnaire did not include questions about strategy use and instruction. It can be improved, but it serves for the developing of materials for the following year.
- Finally, a more thorough needs analysis has to be done before courses start, aiming at knowing how aware students are of reading strategies and not only focusing on their interests and English level. In this way, the teacher will have the grounds for deciding which strategies need more attention and which are not so important to present. Also, the learning style of the students needs to be taken into account because, as it has been stated, strategy choice depends closely on learning preferences and styles.

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APPENDIX

An example of an evaluation of the course and the materials done at the end of the academic year

MATERIAL DE ESTUDIO

1. ¿Crees que el material de estudio resultó de ayuda?

Realmente si, porque textos en inglés que nos daban en otras cátedras, antes los dejaba de lado o le pedía la explicación a algún compañero, y en el transcurso del año cada vez me fui animando más al inglés, y realmente me ayudo a estudiar y entender temas de diferentes materias.

2. ¿Qué textos te resultaron más interesantes? ¿Por qué?

Los textos de acuicultura sobre todo, más que nada porque es el tema de mi interés, a su vez todos los textos que hablaban sobre el manejo en el criadero me resultaron más interesantes que los demás. Algunos textos de biología también me gustaron quizás por temas que desconocía como el comportamiento de diferentes especies.

3. ¿Qué otros temas te gustaría incluir en los textos?

Textos de acuaponia, textos de especies potenciales para cultivo en Argentina, de las que, como todo lo referido a acuicultura, hay mucha información en inglés y no tanto en español, por ejemplo cultivo de Tilapia, langosta australiana (red claw); y también sobre sistemas de recirculación para acuicultura (SRA).

4. ¿cuál es tu opinión acerca de las fichas de apoyo gramatical?

Excelentes, fueron útiles para las clases, para estudiar y para consulta permanente.

EXPLICACIONES Y ACTIVIDADES

5. ¿Cómo describirías las clases de inglés?

Algo que una vez hablé con Caro, es que tuve inglés desde la primaria, en el colegio, clases particulares, en la facultad de turismo, y lamentablemente no sé por qué, nunca aprendí mucho, pero esta vez fue diferente, creo que de todas las veces eran las únicas veces que me daban ganas de ir a las clases de inglés, las describiría como amenas, claras, prácticas y participativas.

6. ¿Las explicaciones te resultaron claras?

Sí, siempre.

7. ¿Sentiste que faltó algo? ¿Qué?

No.

8. ¿Qué tipo de actividad te resultó más provechosa?

Las preguntas para la comprensión de los textos, o sea, lo que hicimos la mayoría del año, comprender los textos sin la necesidad de traducirlos textualmente.

Comprender los audios también me sirvió para prestar más atención al vocabulario, y darme cuenta que podía entender cosas que pensaba que no.